An 85-year-old man is being evaluated for gait difficulties. He says that he frequently trips walking up stairs or on uneven surfaces. On examination, it is found that joint proprioception is absent in his toes. People with impaired position sense will usually fall if they simultaneously stand with their feet together and do which of the following?

а	Flex the neck
b	Extend their arms in front of them
с	Flex the knees
d	Turn the head
e *	Close their eyes
A 62-	year-old right-handed man has "involuntary twitches" of his left hand. He first noticed between 6 months
and 1	year ago that when he is at rest, his left hand shakes. He can stop the shaking by looking at his hand and
concer	ntrating. The shaking does not impair his activities in any way. He has no trouble holding a glass of water.
There	is no tremor in his right hand, and the lower extremities are not affected. He has had no trouble walking.
There	have been no behavioral or language changes. On examination, a left hand tremor is evident when he is
distrac	ted. Handwriting is mildly tremulous. He is very mildly bradykinetic on the left. The most likely
exami	nation finding would be which of the following?
a	Upper motor neuron pattern of weakness on the left
b	Lower motor neuron pattern of weakness on the left
с	Bilateral upper motor neuron pattern of weakness
d *	Mild cogwheel rigidity on the left only with distraction
e	Bilateral severe cogwheel rigidity
A 42-	year-old man notices that his right pupil is smaller than the left. His wife has also commented that the
right e	eve is "droopy looking." The only remarkable recent history is that he was tackled a little hard while
playin	g football the day before. An axial T1-weighted magnetic resonance image (MRI) is shown below. Which
of the	following is present?
a	Increased T2 signal in a periventricular distribution
b	Contrast enhancement along the tentorial margin
c *	Increased T1 signal in the wall of the right carotid artery
d	Enlarged optic nerve in the orbit
е	Thrombosed cavernous sinus aneurysm
A 21-	year-old, generally healthy college student presents with loss of sensation in the right arm that has been
progre	ssive over a few days. She says that she had flu for about a week and noticed the symptoms started
afterw	ard. It began in her hand, and then very slowly progressed over 36 hours to involve the entire right upper
extren	nity. Her physician ordered blood tests and an MRI. A T2 image is pictured below. Which of the
follow	ing is the most likely process?
a	Ischemic
b *	Demyelinating
с	Neoplastic
d	Hemorrhagic
e	Psychogenic
A 42-	vear-old attorney presents with a tremor in her hands that is most obvious when she is awake and trying to
perfor	m an action. She had first noticed it several years ago, but is concerned that it may be very slowly
worse	ning. A tremor of this type is most likely caused by disease in which of the following structures?
a	Thalamus
b *	Cerebellum
c	Substantia nigra
d	Spinal cord
e	Internal capsule
A 65-	vear-old man was forced to retire from iron working because of a neurological condition which has
nroore	used over the past several years. It is characterized by tremor rigidity and bradykinesia worse on the left
side 7	The symptoms are somewhat alleviated by treatment with L-dona/carbidona. This national's resting tremor
is mos	t likely to do which of the following upon falling asleep?
3	It becomes more rapid
u	

b		Its amplitude increases
с		It generalizes to limbs that were uninvolved when the patient was awake
d	*	It disappears
e		It transforms into choreiform movements
Α	25-y	year-old woman with a history of epilepsy presents to the emergency room with impaired attention and
un	stead	diness of gait. Her phenytoin level is 37 (normal therapeutic range 10-20). She has white blood cells
(W	BC	s) in her urine and has a mildly elevated thyroid-stimulating hormone (TSH) level. Examination of the
eve	es w	ould be most likely to show which of the following?
a		Weakness of abduction of the left eve
b	*	Lateral beating movements of the eves
c		Impaired convergence
d	1 1	Papilledema
e		Impaired unward gaze
Δ	75-v	rear-old retired journalist is generally healthy but has noticed worsening problems maneuvering over the
na	r J - y	months. He has particular trouble getting out of low seats and off toilets. He most likely has which of the
fol	lowi	inonthis. The has particular trouble getting out of low seats and off tonets. The most fixery has which of the
101	10 10	Door fine finger movements
a h		Floatromyography results indicating widespread denormation
0		Distal mussle weekness
2	*	Distal inuscle weakness
a	*	Crit susperie
e	50	
A:	50-y	ear-old fight-handed man has presented to a neurologist because of gradually progressive hearing loss of
the	rigi	nt ear. He denies worsening balance or ringing in his ears. There is no associated pain. A vibrating tuning
IOT	K 1S	applied to the center of his forenead. The sound is louder in his left ear. This finding suggests which of
the		lowing?
a 1		Bilateral sensorineural hearing loss
b		Bilateral conductive hearing loss
c		Right ear conductive hearing loss
d	.	Left ear sensorineural hearing loss
e	*	Right ear sensorineural hearing loss
Α	38- <u>y</u>	year-old woman says that she is "dizzy." A more careful history reveals that she has an abnormal
ser	isati	on of movement intermittently. Examination reveals several beats of horizontal rhythmic eye movements
on	left	ward gaze. A TT MRI image from this patient is shown. Dix-Hallpike test is positive. Which is the most
lik	ely d	diagnosis?
a		Ocular bobbing
b		Pontine hemorrhage
С		Cervicomedullary junction glioma
d	*	Benign positional vertigo
e		Brainstem stroke
A	48-y	year-old left-handed man develops increased sensitivity to sound in his left ear. A brain MRI reveals a
po	steri	or fossa mass. This symptom may develop in one ear with damage to which of the following ipsilateral
CN	Ns?	
a		V
b	*	VII
c		VIII
d		IX
e		X
A	42-v	ear-old woman is being evaluated for gait difficulties. On examination, it is found that her ability to walk
alc	mg	a straight line touching the heel of one foot to the toe of the other is impaired. This finding is most
co	mma	on with which of the following?
а	*	Cerebellar dysfunction
b		Parietal lobe damage
с	1 1	Temporal lobe damage
-		

d Ocular motor disturbances		
e Dysesthesias in the feet		
A 55-year-old woman is being examined because of difficulty walking. The clinician notices the presence of		
fine twitching movements beneath the surface of the tongue and wasting of one side of the tongue. This finding		
suggests which of the following?		
a Pseudobulbar affect		
b Aberrant reinnervation of muscles from CN X		
c Aberrant reinnervation of muscles from CN XII		
d Depervation of muscles from CN X		
e * Depervation of muscles from CN XII		
A 46 year old longshoreman has lower back pain radiating down the posterior aspect of his left leg and		
paresthesias in the lateral aspect of his left foot. This has been present for 6 months. Strength and howel and		
bladder function have been normal. Examination would be most likely to show which of the following?		
a Left Babinski sign		
b Loss of pipprick sensation over the web space between the first and second digits of the left foot		
c Hyperreflexia at the left knee jerk		
d * Hyperfellevia in the left Achilles tendon reflev		
Decreased rectal tone		
A 28 year old graduate student presents with confusion and mild right hominerosis developing over the course		
of an evening. His girlfriend relates that he has been having severe headaches each morning for the past 2		
weeks. While being evaluated in the emergency room be has a generalized tonic clonic seizure. When		
examined 2 hours later he is lathergic and unable to recall recent events has difficulty naming and has a right		
properties drift. There is mild weakness of adduction of the eves bilaterally. Funduscopic examination might be		
expected to show which of the following?		
a Pigmentary degeneration of the retina		
h Hollenhorst plaques		
c Retinal venous pulsations		
d * Blurring of the margins of the ontic disc		
e Pallor of the optic disc		
A 42-year-old man sustained multiple injuries in an automobile accident. After orthopedic surgery he is		
difficult to arouse. Assuming that his brainstem function is intact, when he is lying supine with his head slightly		
elevated (30°) and one external auditory meatus is irrigated with warm water which of the following would be		
expected?		
a Tonic deviation of the eyes toward the ear that is stimulated		
b * Nystagmus in both eyes toward the ear that is stimulated		
c Tonic deviation of the insilateral eve toward the ear that is stimulated		
d Nystagmus in both eyes away from the ear that is stimulated		
e Tonic deviation of both eyes away from the ear that is stimulated		
A 33-year-old woman has an acute onset of right orbital pain after a tennis match. The following morning her		
10-year-old son comments that her right eve looks funny. On examination she has a mild right prosis and		
anisocoria. The right pupil is 2 mm smaller than the left, but both react normally to direct light stimulation		
Visual acuity visual fields and eve movements are normal. The site of injury is caused by interruption of fibers		
from which of the following structures?		
a Optic tract		
b Optic chiasm		
c CN III		
d T1 nerve root		
e * Superior cervical ganglion		
An 81-year-old woman with a history of type 2 diabetes mellitus and atrial fibrillation presents with right body		
weakness and slurred speech. She realized that there was a problem on awakening in the morning and her		
husband called emergency medical services (EMS), who brought her to the emergency room. There are no		
word-finding difficulties, dysesthesia, or headaches. She is taking warfarin. Physical examination findings		
include blood pressure of 210/95 and irregularly irregular heartbeat. There is leftside neglect with slurred		

speech. There is a corticospinal pattern of weakness of the right body, with the face and upper extremity worse than the lower extremity. Routine chemistries and cell counts are normal. Her INR is Computed tomography (CT) of the head reveals a large right-sided subdural hematoma. The intracranial material appearing most dense on CT is which of the following?

а	*	Blood clot
a h		White matter
0		Grav matter
		Corebrospinal fluid (CSE)
u		Dia mater
e 	15 -	Pla maler
A	13-y	rear-old boy developed a left Bell paisy over the course of 1 week. He was treated with acyclovir and
pre twi	tchi	ng at the left corner of the mouth each time he tries to blink the left eye. This is most likely caused by
wh	ich (of the following?
a		A habit spasm
b		Cerebellar damage producing impaired coordination
с	*	Aberrant regeneration of the facial nerve
d		Trigeminal neuralgia
e		Focal seizures
Yo	u ai	re working in the emergency room when a 30-year-old man presents with a headache that started
ves	terd	lay. As he was shoveling snow, he felt a sudden pain in the front of his head. The pain does not throb and
has	be	en relatively constant since. He says that now his neck also has become a little stiff. He carries a
dia	gno	sis of migraine headaches, but says that this is different than his usual headaches. He is afebrile and has a
nor	mal	examination except for slight photophobia and mild discomfort with neck flexion. Which of the
foll	lowi	ing is the most appropriate next step in management?
a		Obtain a brain MRI
b	*	Obtain a brain CT
c		Obtain a cerebral angiogram
d		Obtain an electroencephalogram (EEG)
e		Obtain a psychiatric consult
A	56-1	year-old right-handed woman presents to the emergency room with a sudden-onset severe left-sided
hea	idac	he. The pain began when she stood up from her couch while watching TV A head CT is normal. Which
of t	he f	following is the most appropriate next step in management of this patient?
a 1		Begin intravenous henarin
h	*	Perform a lumbar puncture
C		Obtain a brain MRI
d		Obtain a cerebral angiogram
u e		Give the patient a prescription for zolmitriptan and send her home
	50 v	are old man is clinically suspected to have had a subarachnoid hemorrhage. A lumbar puncture shows
700)0-y	and blood cells (PBCs) in tube 1 and 7200 in tube There are nine WBCs in each. The fluid is
von	ntho	chromic. The opening pressure is 22 cm H-O. Which of the following is the payt best step in managing
this	s cas	se?
a	*	Arrange for a cerebral angiogram and call a neurosurgical consult
b		Give the patient a prescription for sumatriptan and send him home
с		Immediately give 2 g of intravenous ceftriaxone
d		Immediately start intravenous acyclovir
e		Repeat the lumbar puncture
A 2	28-y	rear-old man presents to the emergency room with a severe headache. It is different than any that he has
eve	er ha	ad before. It is in the right posterior region and is not throbbing. The headache started suddenly, about 5
hou	irs a	ago, while he was watching television and eating pizza. He is now noticing some mild neck stiffness and
blu	rry	vision. Examination is significant for weakness of abduction of the right eye. Which of the following is
the most definitive test for identifying intracranial aneurysms?		
a		MRI scanning
b		CT scanning

c	Single photon emission computed tomography (SPECT)	
d	Positron emission tomography (PET)	
e *	Cerebral angiography	
In this	s MRI scan, the site most likely to produce a noncommunicating hydrocephalus when it is obstructed is	
identi	fied by which of the following?	
a *	Arrow A	
b	Arrow B	
c	Arrow C	
d	Arrow D	
e	Arrow E	
An 18	-year-old woman tells her physician that she has throbbing right-sided headaches. They are most common	
just p	rior to her menstruation and are associated with nausea and photophobia. Examination at the time of the	
office	visit is normal. A T1 sagittal image from her MRI is shown below. The location of the cerebellar tonsil in	
the M	RI scan suggests which of the following?	
a	Arnold-Chiari type 1 malformation	
b	Arnold-Chiari type 2 malformation	
c	Giant cisterna magna	
d	Dandy-Walker syndrome	
e *	Normal posterior fossa	
A 46-	year-old woman with depression has a brain CT performed at the request of her psychiatrist. There is the	
incide	ntal finding of a dense mass that appears to originate from the tentorium cerebelli. The tentorium cerebelli	
separa	tes the superior cerebellum from the cerebrum and is a common site of origin for which of the following?	
a *	Meningiomas	
b	Ependymomas	
c	Hemangioblastomas	
d	Medulloblastomas	
e	Astrocytomas	
A 35-	year-old woman has noticed that over the past 3-to-5 months she has had some difficulties with balance,	
partic	ularly when she closes her eyes. On examination, she has decreased hearing in her left ear and also left	
body	dysdiadochokinesia. Her physician orders a head CT, shown below. Given this CT scan, which was	
obtair	ed without contrast enhancement, the physician must assume that the posterior fossa mass at the arrow is	
which	of the following?	
a	Normal	
b *	Calcified	
с	Highly vascular	
d	Granulomatous	
e	Highly cystic	
A 35-	year-old woman presents with slowly evolving left arm ataxia, left-sided head tilt, dysarthria, and left	
facial	weakness. The patient denies vertigo, tinnitus, or hearing loss. MRI reveals a posterior fossa mass that	
lies cl	ose to the bone and enhances with contrast. Which of the following is the most likely explanation for this	
lesion	?	
a	Cerebellar infarction	
b	Cerebellar hemorrhage	
c *	Meningioma	
d	Schwannoma	
e	Astrocytoma	
A 45-year-old woman presents with worsening right-sided headaches. Examination is significant for a left-sided		
drift. Brain MRI and CT scans reveal a homogeneously enhancing, round, dural-based, calcified lesion		
compressing the right frontal lobe. Which of the following is the most appropriate course of action for the		
management of this case?		
a	Anticoagulation	
b	Triple therapy with isoniazid, rifampin, and ethambutol	
c *	Surgical resection	

d		Chemotherapy
e		Craniospinal axis irradiation
A	patie	ent with bilateral posterior fossa masses has café au lait spots and reports a family history of bilateral
he	aring	g loss at a relatively young age. A gene abnormality should be suspected on which chromosome?
а		5
b		13
c		17
d		21
u A	*	21
1	65 x	22 year old diabetic man has a history of a caraballar stroke. The stroke occurred 5 years ago, and he says
A the	us-y at he	has now fully recovered. He cannot recall the symptoms, but his medical records state that he presented
wi	th lo	ft_sided dysdiadochokinesia. Which of the following was most likely impaired?
w1		Successive finger movements
a h		Heal to too wellting
D	*	Desid alternation managements
C 1	*	Rapid alternating movements
a		I remor suppression
e		Conjugate eye movements
A	27-y	rear-old healthy normal woman is having a routine EEG examination. The study begins with a 5-minute
rec	cordi	ing of her sleeping. Then she is awakened and given photic stimulation. Next she is alert and awake,
lyi	ng v	with her eyes closed in a quiet room. At this point she will exhibit what frequency of EEG activity over
the		cipital and parietal areas bilaterally?
a		0-to-3 Hz
b		4-to-7 Hz
С	*	8-to-13 Hz
d		14-to-25 Hz
e		26-to-45 Hz
А	38-3	year-old right-handed woman presented with early morning headaches. There was papilledema on
exa	amir	nation. Below is shown a T1-weighted postcontrast brain MRI of the patient. Which of the following
syı	mpto	oms is most likely to also be present?
a	*	Aphasia
b		Neglect
c		Left hemiparesis
d		Left homonymous hemianopia
e		Alexia without agraphia
Α	65-y	vear-old man with a history of atrial fibrillation is brought into the emergency room at 1:00 PM because
of	the	acute onset of right-sided weakness and inability to speak beginning at noon. On examination, he is alert
bu	t una	able to speak. He follows simple one-step commands. There is left gaze deviation and impaired rightward
ga	ze. F	Flaccid paresis of the right face and arm is present, but he is able to lift his right leg off the bed. Reflexes
are	e dec	creased on the right side. What diagnostic examination is needed?
а		MRI of the brain
b		Serum creatine phosphokinase (CPK)
c		Cerebral angiography
d		Myelography of the spinal canal
e	*	Cranial computerized axial tomography (head CT)
Δ	50-1	vear-old homeless woman is admitted to the hospital with ulcerations on her feet. She complains of
hu	rnin	g in her feet and lower legs but does not localize the pain to where her skin is ulcerated. She is unable to
sta	nd v	with her eves closed and her feet together. Her deep tendon reflexes are diffusely hypoactive. On
eve	stem	atic testing of her strength and sensation decreased nain position and vibration sense are evident in her
ha	nde	and feet. She also has weakness on dorsiflexion of the ankles and wrists. What diagnostic examination is
ne	nus i Aahe	and reed, one also has weakness on dorsinezion of the ankies and wrists. What diagnostic examination is
2		 MRI of the brain
a h	$\left \right $	Brain bionsy
0	*	Nerve conduction studies (NCS)

d		CSF analysis				
e		EEG				
A	A 7-year-old boy has recurrent staring episodes while at school. His school performance is poor. The episodes					
nev	ver 1	last more than 30 seconds, and afterward he immediately resumes normal attention. There are no lip-				
sm	acki	ing movements or other automatisms. He never falls down during the episodes. If he is walking or eating				
dur	ring	the episode, he merely stops. He is unaware of this behavior. What diagnostic examination is needed?				
a		MRI of the brain				
b		Brain biopsy				
с		Nerve conduction studies (NCS)				
d		CSF analysis				
e	*	EEG				
Aı	orev	viously healthy 7-month-old infant is brought to the emergency room after having had three generalized				
cor	ivul	sions. The infant has a stiff neck, is poorly responsive to the examiner, and has a rectal temperature of				
9°C	C (1	02°F). The parents report that 1 day of diarrhea preceded this episode. What diagnostic examination is				
nee	eded	1?				
a		MRI of the brain				
b		Brain biopsy				
с		Nerve conduction studies (NCS)				
d	*	CSF analysis				
e		EEG				
Ά	70-y	year-old right-handed woman with a history of polio describes 1 month of increasing difficulty rising				
fro	m a	chair and walking. She also has trouble combing her hair and cooking, and there is mild swallowing				
tro	uble	e, but only with solids. Her legs and upper arms are painful and mildly swollen. Periungual telangiectasias				
are	see	n. Erythrocyte sedimentation rate (ESR) is What diagnostic examination is needed?				
a	*	Serum creatine phosphokinase (CPK)				
b		Cerebral angiography				
C 1		Myelography of the spinal canal				
d		Cranial computerized axial tomography (head CT)				
e		Skull x-ray				
	26-y	rear-old woman with a /-year history of epilepsy develops a generalized convulsion while shopping. She				
15 1 D	аке	in to an emergency room, but no one accompanying her is aware of a previous history of epilepsy.				
Bee	caus	se sne nas a protracted posticial period, numerous investigations are performed over the course of the				
net	torn	most likely to be found				
pai	lem	Protoin Contont 40 (mg/dL: Normal values 15.45); Clucose Contant 75 (mg/dL: Normal values				
a		Froteni Content - 40 (mg/dL, Normal values = $15-45$), Ordcose Content = 75 (mg/dL, Normal values = $40-70$); WBC = 3 (per mI : Normal values = 0.5); RBC = 0 (per mI : Normal values = 0); Opening				
		Pressure $= 430$ (per mL; normal values $= 0.5$), RDC $= 0$ (per mL; Normal values $= 0.5$), Opening				
		Clear): $I_{0}G$ % Total of Protein – 8 (Normal values – 3-12)				
h		Protein Content - 300 (mg/dL: Normal values - 15-45): Glucose Content - 86 (mg/dL: Normal values -				
U		40-70; WBC - 7 (per mL: Normal values - 0-5); RBC - 0 (per mL: Normal values - 0); Opening				
		Pressure – 120 (per mL: mm H ₂ O: Normal values – 100-180): Appear-ance – Yellow (Normal values –				
		Clear): IgG % Total of Protein -12 (Normal values $-3-12$)				
с		Protein Content - 95 (mg/dL; Normal values – 15-45); Glucose Content – 12 (mg/dL; Normal values –				
		40-70); WBC – 150 (per mL; Normal values – 0-5); RBC – 3 (per mL; Normal values - 0); Opening				
		Pressure – 200 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Milky (Normal values -				
		Clear); IgG % Total of Protein – 13 (Normal values – 3-12)				
d		Protein Content - 120 (mg/dL; Normal values - 15-45); Glucose Content - 65 (mg/dL; Normal values -				
		40-70); WBC - 85 (per mL; Normal values - 0-5); RBC - 15 (per mL; Normal values - 0); Opening				
		Pressure – 300 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Cloudy (Normal values -				
		Clear); IgG % Total of Protein – 15 (Normal values – 3-12)				
e	*	Protein Content - 45 (mg/dL; Normal values - 15-45); Glucose Content - 78 (mg/dL; Normal values -				
		40-70); WBC – 3 (per mL; Normal values – 0-5); RBC – 0 (per mL; Normal values - 0); Opening				
		Pressure – 130 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Clear (Normal values -				

	Clear); IgG % Total of Protein – 7 (Normal values – 3-12)	
A 72	-year-old man is brought to the emergency room in a coma. He has a fever and was observed to have a	
gener	calized tonic-clonic seizure just prior to arriving in the emergency room. His family reports that he had	
lethar	rgy and cough about 1 week prior to the acute deterioration. On the day of his seizure, he developed a	
heada	ache and blurred vision. He had some vomiting early in the day and became more stuporous as the day	
progr	ressed. There is no evidence of alcohol or drug use. Choose the CSF pattern most likely to be found.	
<u>progr</u>	Protein Content - 40 (mg/dL: Normal values - 15-45): Glucose Content - 75 (mg/dL: Normal values -	
u	40-70): WBC = 3 (per mI : Normal values = $0-5$): RBC = 0 (per mI : Normal values = 0): Opening	
	Pressure = 430 (per mI : mm H ₂ O: Normal values = $100-180$): Appear-ance = Clear (Normal values =	
	Clear): IgG % Total of Protein 8 (Normal values 3.12)	
h	Distance Contant 200 (mg/dL + Normal values - 15.45); Chuassa Contant - 86 (mg/dL + Normal values -	
D	Protein Content - 500 ($\operatorname{Ing}/\operatorname{uL}$; Normal values - 15-45); Glucose Content - 80 ($\operatorname{Ing}/\operatorname{uL}$; Normal values - 40.70); WDC - 7 (non mL); Normal values - 0.5); DDC - 0 (non mL); Normal values - 0); Ononing	
	40-70; wbC = 7 (per mL; Normal values = 0-3); KbC = 0 (per mL; Normal values = 0); Opening	
	Pressure – 120 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Yellow (Normal values -	
	Clear); IgG % Total of Protein -12 (Normal values $-3-12$)	
с	Protein Content - 65 (mg/dL; Normal values – 15-45); Glucose Content – 80 (mg/dL; Normal values –	
	40-70); WBC – 8 (per mL; Normal values – 0-5); RBC – 0 (per mL; Normal values - 0); Opening	
	Pressure – 110 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Clear (Normal values -	
	Clear); IgG % Total of Protein – 17 (Normal values – 3-12)	
d *	Protein Content - 95 (mg/dL; Normal values – 15-45); Glucose Content – 12 (mg/dL; Normal values –	
	40-70); WBC – 150 (per mL; Normal values – 0-5); RBC – 3 (per mL; Normal values - 0); Opening	
	Pressure – 200 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Milky (Normal values -	
	Clear); IgG % Total of Protein – 13 (Normal values – 3-12)	
e	Protein Content - 120 (mg/dL; Normal values - 15-45); Glucose Content - 65 (mg/dL; Normal values -	
	40-70); WBC – 85 (per mL; Normal values – 0-5); RBC – 15 (per mL; Normal values - 0); Opening	
	Pressure – 300 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Cloudy (Normal values -	
	Clear); IgG % Total of Protein – 15 (Normal values – 3-12)	
A 19-	-year-old man notices discomfort in his ankles within a few days of recovering from an upper respiratory	
infect	tion. Over the next 7 days, he develops progressive weakness in both of his legs and subsequently in his	
arms.	He has no loss of sensation in his limbs, despite the progressive loss of strength. He does not lose bladder	
or bo	owel control, but on the tenth day of his weakness he develops problems with breathing and requires	
venti	latory assistance. Choose the CSF pattern most likely to be found.	
a	Protein Content - 40 (mg/dL: Normal values - 15-45): Glucose Content - 75 (mg/dL: Normal values -	
u	40-70): WBC $- 3$ (per mL: Normal values $- 0-5$): RBC $- 0$ (per mL: Normal values $- 0$): Opening	
	Pressure $= 430$ (per mL; mm H ₂ O; Normal values $= 100-180$); Appear-ance $= Clear$ (Normal values $=$	
	Clear): IgG % Total of Protein $= 8$ (Normal values $= 3.12$)	
h *	E Drotein Content 300 (mg/dL: Normal values 15.45): Clucose Content 86 (mg/dL: Normal values	
U	40.70 WPC 7 (nor mL: Normal values -0.5); PPC 0 (nor mL: Normal values -0); Opening	
	40-70, wbC = 7 (per mL, Normal values = 0-3), KbC = 0 (per mL, Normal values = 0), Opening	
	Pressure $= 120$ (per mL; mm H ₂ O; Normal values $= 100-180$); Appear-ance $= 1$ enow (Normal values $= 0.000$); Appear-ance $= 1200$ (Normal values $= 0.000$); Appear-ance $= 1200$ (Normal values $= 0.000$);	
	Clear); IgG % Total of Protein -12 (Normal values $-3-12$)	
с	Protein Content - 65 (mg/dL; Normal values – 15-45); Glucose Content – 80 (mg/dL; Normal values –	
	40-70); WBC – 8 (per mL; Normal values – 0-5); RBC – 0 (per mL; Normal values - 0); Opening	
	Pressure -110 (per mL; mm H ₂ O; Normal values $-100-180$); Appear-ance $-$ Clear (Normal values $-$	
	Clear); IgG % Total of Protein – 17 (Normal values – 3-12)	
d	Protein Content - 95 (mg/dL; Normal values – 15-45); Glucose Content – 12 (mg/dL; Normal values –	
	40-70); WBC – 150 (per mL; Normal values – 0-5); RBC – 3 (per mL; Normal values - 0); Opening	
	Pressure – 200 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Milky (Normal values -	
	Clear); IgG % Total of Protein – 13 (Normal values – 3-12)	
e	Protein Content - 120 (mg/dL; Normal values - 15-45); Glucose Content - 65 (mg/dL; Normal values -	
	40-70); WBC – 85 (per mL; Normal values – 0-5); RBC – 15 (per mL; Normal values - 0); Opening	
	Pressure – 300 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Cloudy (Normal values –	
	Clear): IgG % Total of Protein -15 (Normal values $-3-12$)	
A 40.	-vear-old man was involved in an automobile accident. There is an obvious laceration on his head, and he	
has neck pain. Police at the scene report that he was unconscious when they arrived but the patient cannot		
recall	this loss of consciousness. In fact, he cannot remember the accident or events within 10 minutes prior to	
TUCUALI	i uno 1000 di conociousnego, in raci, ne cannoi remenioer une accident di events within 10 minutes prior to j	

the accident. On examination, he has obvious neck stiffness and photophobia. Within a few hours of his arrival at the emergency room, he develops vomiting. Lumbar puncture is delayed until after an MRI can be obtained. The tap is performed 2 days after the accident because the patient is still confused and irritable. Choose the CSF pattern most likely to be found.

pa	lien			
a		Protein Content - 40 (mg/dL; Normal values - 15-45); Glucose Content - 75 (mg/dL; Normal values -		
		40-70); WBC – 3 (per mL; Normal values – 0-5); RBC – 0 (per mL; Normal values - 0); Opening		
		Pressure – 430 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Clear (Normal values -		
		Clear); IgG % Total of Protein – 8 (Normal values – 3-12)		
b		Protein Content - 95 (mg/dL; Normal values - 15-45); Glucose Content - 12 (mg/dL; Normal values -		
		40-70); WBC - 150 (per mL; Normal values - 0-5); RBC - 3 (per mL; Normal values - 0); Opening		
		Pressure – 200 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Milky (Normal values -		
		Clear); IgG % Total of Protein – 13 (Normal values – 3-12)		
с		Protein Content - 120 (mg/dL; Normal values - 15-45); Glucose Content - 65 (mg/dL; Normal values -		
		40-70); WBC – 85 (per mL; Normal values – 0-5); RBC – 15 (per mL; Normal values - 0); Opening		
		Pressure – 300 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Cloudy (Normal values -		
		Clear); IgG % Total of Protein – 15 (Normal values – 3-12)		
d		Protein Content - 45 (mg/dL; Normal values - 15-45); Glucose Content - 78 (mg/dL; Normal values -		
		40-70); WBC – 3 (per mL; Normal values – 0-5); RBC – 0 (per mL; Normal values - 0); Opening		
		Pressure – 130 (per mL; mm H ₂ O; Normal values – 100-180): Appear-ance – Clear (Normal values –		
		Clear): IgG % Total of Protein -7 (Normal values $-3-12$)		
е	*	Protein Content - 250 (mg/dL: Normal values – 15-45): Glucose Content – 68 (mg/dL: Normal values –		
		40-70): WBC - 20 (ner mL: Normal values - 0-5): RBC - 9808 (ner mL: Normal values - 0): Opening		
		Pressure – 190 (per mL; mm H ₂ O; Normal values – 100-180): Appear-ance – Yellow (Normal values –		
		Clear): IgG % Total of Protein -14 (Normal values $-3-12$)		
A	1 22-v	vear-old woman is brought to the hospital in a coma. She has had changes in her behavior characterized		
hv	exc	cessive suspiciousness and facetiousness over the month prior to her hospitalization. One week prior to		
hei	r ho	spitalization she had visual and auditory hallucinations. Drug testing reveals no apparent illicit drug use		
On	the	a day of admission she had a generalized seizure and lansed into a coma MRI shows unilateral changes		
in	the t	temporal lobe Choose the CSE pattern most likely to be found		
- m - a		Protein Content _ 40 (mg/dI · Normal values _ 15_45); Clucose Contant _ 75 (mg/dI · Normal values		
a		40-70; WRC = 3 (ner mI · Normal values = 0.5); RRC = 0 (ner mI · Normal values = 0); Opening		
		Pressure = 430 (ner mL: mm H ₂ O: Normal values = 100-180): Appear-appe = Clear (Normal values =		
		Clear): InG % Total of Protein $= 8$ (Normal values $= 3-12$)		
h		C_{1} (matrix), 180 /0 10(a) 01110(c) = 0 (100)(a) values = $3-12$) D rotein Content = 300 (mg/dL · Normal values = $15/45$); Clucosa Content = 96 (mg/dL · Normal values		
U		40.70): WBC 7 (ner mI: Normal values - 0.5): DBC 0 (ner mI: Normal values - 0): Oragina		
		40-70, wbC = 7 (per mL, Normal values = 0-5); KbC = 0 (per mL; Normal values = 0); Opening		
		riessure – 120 (per init; initi π_2 0; inormal values – 100-180); Appear-ance – Yellow (normal values -		
		Clear); IgG % 10tal OI Protein – 12 (Normal values – $3-12$)		
c		Protein Content - 65 (mg/dL; Normal values – 15-45); Glucose Content – 80 (mg/dL; Normal values –		
		40-70); WBC – 8 (per mL; Normal values – 0-5); RBC – 0 (per mL; Normal values - 0); Opening		
		Pressure -110 (per mL; mm H ₂ O; Normal values $-100-180$); Appear-ance $-$ Clear (Normal values $-100-180$); Appear-ance $-$ Clear (Normal values $-100-180$);		
		Clear); IgG % Total of Protein – 17 (Normal values – 3-12)		
d		Protein Content - 95 (mg/dL; Normal values – 15-45); Glucose Content – 12 (mg/dL; Normal values –		
		40-70); WBC – 150 (per mL; Normal values – 0-5); RBC – 3 (per mL; Normal values - 0); Opening		
		Pressure – 200 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Milky (Normal values -		
		Clear); IgG % Total of Protein – 13 (Normal values – 3-12)		
e	*	Protein Content - 120 (mg/dL; Normal values - 15-45); Glucose Content - 65 (mg/dL; Normal values -		
		40-70); WBC – 85 (per mL; Normal values – 0-5); RBC – 15 (per mL; Normal values - 0); Opening		
		Pressure – 300 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Cloudy (Normal values -		
		Clear); IgG % Total of Protein – 15 (Normal values – 3-12)		
Α	26-3	year-old man develops bed wetting and transient sexual dysfunction that resolves over the course of 6		
we	eks	. One month later, he notices a pins-and-needles sensation in his right leg that never clears completely.		
On	exa	amination, he has hyperreflexia in both of his legs and past-pointing in his right arm. His gait is slightly		
ata	ataxic, and he is unable to perform tandem gait. Choose the CSF pattern most likely to be found.			
a		Protein Content - 40 (mg/dL; Normal values - 15-45); Glucose Content - 75 (mg/dL; Normal values -		

		40-70); WBC – 3 (per mL; Normal values – 0-5); RBC – 0 (per mL; Normal values - 0); Opening
		Pressure – 430 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Clear (Normal values -
		Clear): IgG % Total of Protein -8 (Normal values $-3-12$)
b		Protein Content - 300 (mg/dL: Normal values – 15-45): Glucose Content – 86 (mg/dL: Normal values –
Ũ		40-70; WBC = 7 (per mI: Normal values = 0-5); RBC = 0 (per mI: Normal values = 0); Opening
		Pressure $= 120$ (per mL; mm H ₂ O; Normal values $= 100-180$); Appear-ance $=$ Yellow (Normal values $=$
		Clear): InG % Total of Protein $= 12$ (Normal values $= 3-12$)
C	*	Protein Content _ 65 (mg/dI : Normal values _ 15-45): Glucose Content _ 80 (mg/dI : Normal values _
Ũ		40-70: WBC = 8 (ner mI : Normal values = 0-5): RBC = 0 (ner mI : Normal values = 0): Opening
		Pressure $= 110$ (per mI : mm H ₂ O: Normal values $= 100-180$): Appear-ance $= Clear$ (Normal values $=$
		Clear): $IgG \%$ Total of Protein = 17 (Normal values = 3-12)
d		Protein Content $_{-95}$ (mg/dI : Normal values $_{-15}$ $_{-15}$): Glucose Content $_{-12}$ (mg/dI : Normal values $_{-15}$ $_{-15}$
u		40-70: WBC = 150 (per mI : Normal values = 0-5): RBC = 3 (per mI : Normal values = 0): Opening
		Pressure = 200 (per mL; mm H.O: Normal values = 100-180): Appear-ance = Milky (Normal values =
		Clear): InG % Total of Protein $= 13$ (Normal values $= 3.12$)
0		Protein Content $= 120 \text{ (mg/dI : Normal values } = 15.45)$: Glucose Content $= 65 \text{ (mg/dI : Normal values } = 15.45)$
C		40.70): WBC 85 (per mI : Normal values 0.5): BBC 15 (per mI : Normal values 0): Opening
		Pressure 200 (per mL: mm H.O: Normal values 100 180): Appear appa Cloudy (Normal values
		Γ ressure = 500 (per InL, Inni 11 ₂ O, Normal values = 100-180), Appear-ance = Cloudy (Normal values - Clear); $I_{2}C_{1}^{0}$ (Normal values - 2.12)
A /) 6 •	$\sqrt{10}$ 10
	20-y	ting a physician. She has no vomiting or diplonia. Examination of her avos reveals florid papilledoms but
	lisui thou	this a physicial. She has no volnting of uptopla. Examination of her eyes reveals nonu papilledenia but
wi		response with her fourth shild. Choose the CSE pattern most likely to be found
wi	*	Protain Content 40 (mg/dL: Normal values 15.45); Chaosa Content 75 (mg/dL: Normal values
a		Protein Content - 40 (ing/dL; Normal values $-15-45$); Glucose Content -75 (ing/dL; Normal values -40.70); WPC -2 (nor mL; Normal values -0.5); PPC -0 (nor mL; Normal values -0); Opening
		40-70, wbC = 5 (per mL, Normal values = 0-5), KbC = 0 (per mL, Normal values = 0), Opening Pressure 420 (per mL; mm H O; Normal values = 100, 180); Appear appa Clear (Normal values
		Pressure – 450 (per InL; Inin Π_2O ; Normal values – 100-180); Appear-ance – Clear (Normal values –
h		Clear), 19G % Total of Ploteni – δ (Normal values – 5-12) Protein Content – 200 (mg/dL · Normal values – 15 45); Clusses Content – 86 (mg/dL · Normal values
D		40.70), WDC 7 (non mL: Normal values - 0.5); DDC 0 (non mL: Normal values - 0); Opening
		40-70, wBC = 7 (per mL, Normal values = 0-5), KBC = 0 (per mL, Normal values - 0), Opening
		Pressure – 120 (per InL, Inni Π_2 O, Normal values – 100-180), Appear-ance – 1 enow (Normal values - Clear); $I_2 \subseteq 0$ (Normal values – 2.12)
		Clear), 190 % Total of Ploteni – 12 (Normal values – $5 \cdot 12$) Protain Contant – 65 (mg/dL: Normal values – 15 45); Cluassa Contant – 80 (mg/dL: Normal values
C		40.70): WPC 8 (per mL: Normal values 0.5): PPC 0 (per mL: Normal values 0): Opening
		40-70, wbc = 8 (per mL, Normal values = 0-3), Kbc = 0 (per mL, Normal values = 0), Opening Pressure 110 (per mL mm H O: Normal values = 100 180); Appear appear (Normal values = 0)
		Pressure – 110 (per InL, Inni H ₂ O, Normal values – 100-160), Appear-ance – Clear (Normal values - Clear), $I_{2}C_{1}$ (Normal values – 2.12)
4		Clear); IgG % Total of Protein $= 17$ (Normal values $= 5 \cdot 12$)
a		FIOREIR CONTERIT - 95 (Ing/uL; Normal values – 15-45); Glucose Content – 12 (mg/dL; Normal values – 40.70); WPC = 150 (nor mL; Normal values = 0.5); PPC = 2 (nor mL; Normal values = 0.5); Or a size
		40-70; wBC = 150 (per mL; Normal values = 0-5); KBC = 5 (per mL; Normal values - 0); Opening
		Pressure – 200 (per IIIL; IIIII H_2 O; Normal values – 100-180); Appear-ance – Mirky (Normal values –
-		Utai), 190 % 10tai 01 Proteini – 15 (Normal values – 5-12) Drotain Contant – 120 $(mg/dL + Normal values – 15/45)$; Chaosa Contant – 65 $(mg/dL + Normal - 1)$
e		FIOREIR CONTERN - 120 (Ing/dL; Normal values – 15-45); Glucose Content – 65 (mg/dL; Normal values – 40.70); WPC = 85 (nor mL; Normal values – 0.5); DPC = 15 (nor mL; Normal values – 0.5); Or missing the second se
		40-70; WBC - 85 (per mL; Normal values - 0-5); RBC - 15 (per mL; Normal values - 0); Opening
1		Pressure – 500 (per mL; mm H ₂ O; Normal values – 100-180); Appear-ance – Cloudy (Normal values – Clearly LeC 9). Testal of Protein – 15 (Nermal values – 2, 12).
_		Clear); IgG % Total of Protein – 15 (Normal values – 3-12)
A	b/-y	year-old woman with a history of type 2 diabetes mellitus and atrial fibrillation presents to the emergency
roc	om v	with left body weakness and slurred speech. The onset was sudden while she was brushing her teeth I
no	ur a	ago, and sne was brought immediately to the emergency room. She denies word-finding difficulties,
	sestl	nesia, and neadacne. Sne is taking wartarin. Physical examination findings include blood pressure of
203	5/90) mm Hg and irregularly irregular heartbeat. There is left-side neglect with slurred speech. There is a
COI		ospinal pattern of weakness of the left body, with the face and upper extremity being worse than the lower
	rem	ity. Koutine chemistries and cell counts are normal. Her international normalized ratio (INR) is Which of
1 The	f-1	
-	fol	A drainister tissue reserve setimeter
a	fol	Administer tissue plasminogen activator
a b	fol	Administer tissue plasminogen activator Call a vascular surgery consult for possible endarterectomy

d		Order a cerebral angiogram
u e		Start hengrin
	74-x	start neparin
hv	'+-y	anetic resonance angio-gram shown below. Which of the following is the most likely cause of this
na na	tient	's present condition?
pa	*	Atherosclerosis
a h		Fibromuscular duantasia
D		Fibroniuscular dysplasia
C		A startish diseasting
a		Arterial dissection
e	50	Meningovascular inflammation
A	52-у	ear-old woman with diabetes awakens with right body weakness. Examination at the hospital indicates
rel	ative	ely symmetric upper motor neuron pattern of weakness involving the face, arm, and leg. There are no
sei	nsor	y abnormalities. Language is preserved. A stroke associated with this presentation is most likely with
da	mag	e to which of the following?
a	*	Internal capsule
b		Cerebellum
с		Putamen
d		Caudate
e		Amygdala
Fo	llow	ving cardiac catheterization, a 60-year-old right-handed man acutely develops a loss of sensation
inv	volvi	ing the entire left side of his body (face, arm, and leg). Which of the following structures has most likely
be	en d	amaged?
a		Internal capsule
b	*	Thalamus
с		Hippocampus
d		Globus pallidus
e		Pons
Α	61-y	year-old man with a history of hypertension has been in excellent health until he presents with vertigo and
un	stea	diness lasting for 2 days. He then develops nausea, vomiting, dysphagia, hoarseness, ataxia, left facial
pa	in. a	ind right-sided sensory loss. There is no weakness. On examination, he is alert, with a normal mental
sta	tus.	He vomits with head movement. There is skew deviation of the eyes, left ptosis, clumsiness of the left
arı	n, a	nd titubation. He has loss of pin and temperature sensation on the right arm and leg and decreased joint
po	sitio	n sensation in the left foot. He is unable to walk. Magnetic resonance imaging (MRI) in this patient
mi	ght	be expected to show which of the following?
а		Basilar artery tip aneurysm
b		Right lateral medullary infarction
c	*	Left lateral medullary infarction
d		Left medial medullary infarction
P		Right medial medullary infarction
Δ	50_1	regr-old man had a brainstem stroke following a vertebral artery dissection secondary to an acute sports-
rel	oted	injury. This nation might be expected to develop dysphagia secondary to involvement of which of the
fol	llow	ing structures?
10	liow.	Nucleus solitarius
a h		Nucleus and descending tract of cranial nerve (CN) V
	*	Nucleus ambiguus
ט ג		Lateral spinothalamia traat
u		Lateral spinothalanne tract
e		interior cerebenar peduncie
	cius	Bosiler externs
a 1	st.	Bashar artery
b	ボ	vertebrai artery
C		Superior cerebellar artery
d		Anterior inferior cerebellar artery (AICA)
e		Anterior spinal artery
		11

A 75-year-old man with a history of recent memory impairment is admitted with headache, confusion, and a left homonymous hemianopsia. He has recently had two episodes of brief unresponsiveness. There is no history of hypertension. CT scan shows a right occipital lobe hemorrhage with some subarachnoid extension of the blood. An MRI scan with gradient echo (susceptibility) sequences reveals foci of hemosiderin in the right temporal and left frontal cortex. Which of the following is the most likely cause of this patient's symptoms and signs? Gliomatosis cerebri

a

b		Multi-infarct dementia	
с		Mycotic aneurysm	
d	*	Amyloid angiopathy	
e		Undiagnosed hypertension	
A	22-у	year-old male abuser of intravenous heroin has been having severe headaches during sexual intercourse.	
Wi	thin	a few minutes of one headache, he develops right-sided weakness and becomes stuporous. His	
neu	lor	ogic examination reveals neck stiffness as well as right arm and face weakness. An unenhanced	
em	erge	ency CT scan reveals a 3-to-4 cm lesion in the cortex of the left parietal lobe. The addition of contrast	
enł	nanc	cement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the	
les	ion	in the left parietal lobe. Which of the following diagnostic studies is most likely to establish the basis for	
thi	s pa	tient's neurologic deficits?	
a		Human immunodeficiency virus (HIV) antibody testing	
b	*	Cerebrospinal fluid (CSF) examination	
с		Electroencephalography (EEG)	
d		Nerve conduction studies (NCS)	
e		Cardiac catheterization	
Α :	52-у	year-old right-handed woman who has abused intravenous drugs for many years has an HIV antigen test	
tha	t is	positive. CD4+ T-lymphocyte count is normal. A brain CT scan reveals several hemorrhagic lesions.	
NC	CS r	eveal generalized slowing in the legs, and EEG exhibits focal slowing over the left parietal lobe. Cardiac	
cat	hete	erization suggests aortic valve disease, and the patient's CSF is xanthochromic. Which of the following is	
the	pro	bable site of injury in the central nervous system (CNS)?	
а	*	An arterial wall	
b		The ventricular endothelium	
с		The pia arachnoid	
d		The dura mater	
e		The perivenular space	
A 3	3 5- y	year-old man presented to the emergency room with the acute onset of right body weakness. A diffusion-	
we	ight	ed MRI was positive and is in part shown below. Further imaging sequences indicated a small left frontal	
int	intraparenchymal hemorrhage. Within 1 day of admission, the patient's right-sided weakness began to abate,		

and within 1 week it almost completely resolved. On the sixth day of hospitalization, the patient abruptly lost consciousness and exhibited clonic movements starting in his right side and generalizing to his left side. The movements stopped within 3 minutes, but he had residual right-sided weakness for 24 hours. A head CT scan was unchanged from admission. The most appropriate treatment to institute involves which of the following?

а		Heparin
b		Recombinant tissue plasminogen activator (r-TPA)
c		Lamotrigine
d	*	Levetiracetam
e		Warfarin
Λ /	77.	year old woman presents to the americanaly room following a generalized tonic clonic solution that become

A 27-year-old woman presents to the emergency room following a generalized tonic-clonic seizure that began focally in her left lower extremity. Although the seizure stopped within 1 minute, there was persistent weakness of the left lower extremity lasting several hours. Further testing revealed a small arteriovenous malformation near the motor cortex. Focal weakness lasting for 24 hours following a motor seizure is most likely attributable to which of the following?

e Hyponatremia

A 16-year-old girl with complex partial seizures and mild mental retardation has a birthmark consisting of deep red discoloration extending over her forehead and left upper eyelid. A CT scan of her brain would be likely to reveal which of the following?

reveal	
a	A hemangioblastoma
b	A Charcot-Bouchard aneurysm
с	An arteriovenous malformation
d *	A leptomeningeal angioma
e	A fusiform aneurysm
A 72-	year-old retired school teacher has the abrupt onset of right face and hand weakness, disturbed speech
produc	ction, and a right homonymous hemianopsia. This is most likely attributable to occlusion of which of the
follow	ring arteries?
a *	Left middle cerebral artery
b	Left anterior cerebral artery
с	Left vertebrobasilar artery
d	Right anterior choroidal artery
e	Left posterior inferior cerebellar artery (PICA)
A 39-v	year-old woman has diplopia several times a day for 6 weeks. She consults a physician when the double
vision	becomes unremitting and also mentions a dull pain behind her right eye. When a red glass is placed over
her rig	the every and she is asked to look at a flashlight off to her left, she reports seeing a white light and a red
light.	The red light appears to her to be more to the left than the white light. Her right pupil is more dilated than
her lef	t pupil and responds less briskly to a bright light directed at it than does the left pupil. Before any further
investi	igations can be performed, the woman develops the worst headache of her life and becomes stuporous.
Her p	hysician discovers that she has marked neck stiffness and photophobia. The physician performs a
transfe	emoral angiogram. This radiologic study is expected to reveal that the woman has which of the following?
a	An arteriovenous malformation
b	An occipital astrocytoma
C	A sphenoidal meningioma
d	A pituitary adenoma
e *	Δ saccular aneurysm
	vear-old man presents with a left CN III deficit and headache. The ocular symptoms began with papillary
dilatio	and then progressed to oculomotor impairment. Which of the following is the most likely site of the
lesion	responsible for this presentation?
2	Anterior communicating artery
a b *	Posterior communicating artery
0.	Anterior communicating aftery
C 1	Anterior cerebral artery
d	Brainstem white matter
e	Posterior cerebral artery
Three	days after a subarachnoid hemorrhage, a patient begins to develop neck stiffness and photophobia. This is
follow	ed by left-sided weakness and hyperreflexia. Her left plantar response is upgoing. Her physician
presun	nes that these deficits are a delayed effect of the subarachnoid blood. Which of the following is the most
approp	briate treatment?
a	Heparin
b	Wartarın
c *	Nimodipine
d	Phenytoin
e	Carbamazepine
A 73-	year-old man with a history of hypertension has a 10-minute episode of left-sided weakness and slurred
speech	1. On further questioning, he relates three brief episodes in the past month of sudden impairment of vision
affecti	ng the right eye. His examination now is normal. Which of the following is the most appropriate next
diagno	ostic test?
a	Creatine phosphokinase (CPK)
b	Holter monitor

с		Visual evoked responses
d	*	Carotid artery Doppler ultrasound
e		Conventional cerebral angiography
A	72-1	year-old woman with coronary artery disease and a history of cardiac artery stenting began developing
epi	isod	es of transient visual loss several months ago. Each episode is restricted to her left eye and comes on
suc	lden	ly. She says, "All of a sudden half of my vision is black." Each time the vision returns within 30
mi	nute	s. There have been approximately 10 of these events within the past 3 months. These symptoms are most
lik	ely 1	related to which of the following?
a		Retinal vein thrombosis
b	*	Central retinal artery ischemia
с		Posterior cerebral artery ischemia
d		Middle cerebral artery ischemia
e		Posterior ciliary artery ischemia
А	thor	ough evaluation reveals that a 69-year-old patient has a symptomatic 90% stenosis of the right internal
car	otid	artery at the bifurcation. Which of the following management options is most likely to prevent a future
str	oke	
a		Warfarin
b		Carotid artery angioplasty
с	*	Carotid endarterectomy
d		Extracranial-intracranial bypass
e		Aspirin
Α	62-y	year-old man with a history of myocardial infarction awakens with a dense right-sided hemiplegia. His
eye	es ar	re tonically deviated to the left, and he does not respond to threat on the right side of his visual field. He
ap	pear	s to be alert and responds to pain on the left side of his body. His speech is unintelligible and nonfluent,
an	d he	follows no instructions. Efforts to get him to repeat simple phrases consistently fail. Pick the language
dis	turb	ance that best explains the clinical picture.
а		Broca aphasia
b		Wernicke aphasia
с		Transcortical sensory aphasia
d		Transcortical motor aphasia
e	*	Global aphasia
Α	45-y	year-old woman with chronic atrial fibrillation discontinues warfarin treatment and abruptly develops
pro	oblei	ms with language comprehension. She is able to produce some intelligible phrases and produces sound
qu	ite f	luently; however, she is unable to follow simple instructions or to repeat simple phrases. On attempting
to	writ	e, she becomes very frustrated and agitated. Emergency MRI reveals a lesion of the left temporal lobe
tha	t ex	stends into the superior temporal gyrus. Pick the language disturbance that best explains the clinical
pic	ture).
a		Broca aphasia
b	*	Wernicke aphasia
С		Transcortical sensory aphasia
d		Transcortical motor aphasia
e		Anomic aphasia
A	71-у	rear-old man develops headache and slight difficulty speaking while having sexual intercourse. He has a
lor	ng-st	tanding history of hypertension, but has been on medication for more than 7 years. He makes frequent
err	ors	in finding words and follows complex commands somewhat inconsistently. The most obvious defect in
his	lan	iguage function is his inability to repeat the simplest of phrases without making repeated errors. An
em	erge	ency CT scan reveals an intracerebral hemorrhage in the left parietal lobe that appears to communicate
wi	th th	e lateral ventricle. Pick the language disturbance that best explains the clinical picture.
a		Broca aphasia
b		Wernicke aphasia
С		Anomic aphasia
d		Global aphasia
e	*	Conduction aphasia

A 24-year-old woman abruptly loses all speech during the third trimester of an otherwise uncomplicated pregnancy. She has a history of severe migraines during which she occasionally develops a transient right hemiplegia. Her comprehension is good, and she is frustrated by her inability to speak or write. She is unable to repeat simple phrases, but she does begin to produce simple words within 5 days of the acute disturbance of language. Pick the language disturbance that best explains the clinical picture.

а	*	Broca aphasia
b		Wernicke aphasia
с		Transcortical sensory aphasia
d		Transcortical motor aphasia
e		Anomic aphasia
A	78-у	year-old man has a cardiac arrest while being treated in an emergency room for chest pain. Resuscitation
is res	initi tore	ated immediately, but profound hypotension is observed for at least 20 minutes. A cardiac rhythm is ad, but the patient remains unconscious for the next 3 days. When he is awake, alert, and extubated, his
spe	ech	is limited to repetition of words and sounds produced by those around him. He has no apparent
con	npre	ehension of language and produces few sounds spontaneously. Whenever the patient is spoken to, he
fai	rly a	accurately repeats what was said to him. Pick the language disturbance that best explains the clinical
pic	ture	
a		Transcortical motor aphasia
b		Anomic aphasia
с		Global aphasia
d		Conduction aphasia
e	*	Mixed transcortical aphasia
Α	62-y	year-old man has had a left hemisphere stroke. He has impaired naming and repetition. His speech is
no	nflu	ent. Comprehension is preserved. Pick the language disturbance that best explains the clinical picture.
a	*	Broca aphasia
b		Wernicke aphasia
c		Transcortical sensory aphasia
d		Transcortical motor aphasia
e		Anomic aphasia
An	82	-year-old man has had a slow, stepwise cognitive deterioration. A brain MRI is consistent with the
dia	gno	sis of dementia caused by multiple cerebral infarcts. Naming is impaired. Comprehension, repetition, and
flu	ency	y are relatively maintained. Pick the language disturbance that best explains the clinical picture.
a		Broca aphasia
b		Wernicke aphasia
С		Transcortical sensory aphasia
d		Transcortical motor aphasia
e	*	Anomic aphasia
A	53-у	year-old woman sustains a small left frontal embolic stroke during cardiac catheterization. She has poor
nai	ning	g ability and is nonfluent. Comprehension and repetition are relatively preserved. Pick the language
dis	turb	bance that best explains the clinical picture.
a		Broca aphasia
l b	1	Wernicke aphasia

- c Transcortical sensory aphasia
- d * Transcortical motor aphasia
- e Anomic aphasia

A 28-year-old woman is hit in the left neck while playing lacrosse. Approximately 2 hours later she begins having language difficulties. Her speech is fluent and nonsensical. She cannot understand commands, but repeats well. Pick the language disturbance that best explains the clinical picture.

a		Broca aphasia
b		Wernicke aphasia
с	*	Transcortical sensory aphasia
d		Transcortical motor aphasia
e		Anomic aphasia

A 9-year-old boy is brought to your clinic by his parents because he has begun to have episodes of eye fluttering lasting several seconds. Sometimes he loses track of his thoughts in the middle of a sentence. There was one fall off a bicycle that may have been related to one of these events. There are no other associated symptoms, and the episodes may occur up to 20 or more times per day. The boy's development and health have been normal up until this point. He had two head injuries as a young child: the first when he fell off a tricycle onto the ground, and the second when he fell off a playset onto his head. Both episodes resulted in a brief loss of consciousness and he did not think clearly for part of the day afterward, but he had no medical intervention. Which of the following test results is most likely?

		· · · · · · · · · · · · · · · · · · ·
a		Electroencephalogram (EEG) showing 1-2 Hz spike wave
b		Brain magnetic resonance imaging (MRI) showing widespread abnormalities
с	*	EEG showing 2-3 Hz spike wave
d		Lumbar puncture with high white blood cell (WBC) count
e		Conners Rating Scale abnormalities reported by parents, but not teachers

A 19-year-old right-handed man who carries the diagnosis of epilepsy is seen in the urgent-care clinic. He had been healthy until about age 12, when he began to have episodes of eye fluttering lasting several seconds. Sometimes he would lose track of his thoughts in the middle of a sentence. There was one fall off of a bicycle that may have been related to one of these events. He has been treated with valproic acid. At one point he was off all medications, but the seizures returned. He is now at the end of his first semester of college and came in today because he had a witnessed generalized tonic-clonic seizure this morning. He had had only about 2 hours of sleep the night before because he was studying for a final examination. Which of the following is the most appropriate thing to tell this patient?

a "I know that you faked this seizure to avoid taking a test"

b * "Lack of sleep may have contributed to triggering this seizure"

c "You can expect to have tonic-clonic seizures on a regular basis from now on"

d "Your seizures are getting worse and there is nothing we can do about it"

e "You should take the next semester off to recover and get extensive testing"

A 56-year-old man with epilepsy is brought into the emergency room. He has been having continuous generalized tonic-clonic seizures for the past 30 minutes. He is treated with 2 mg of intravenous lorazepam. Most physicians recommend using a high dose of intravenous benzodiazepine as part of the management of status epilepticus because it has which of the following qualities?

a Ability to suppress seizure activity for more than 24 hours after one injection

b Lack of respiratory depressant action

c * Rapid onset of action after intravenous administration

d Lack of hypotensive effects

e Lack of dependence on hepatic function for its metabolism and clearance

A 34-year-old woman is having her medications tapered in the epilepsy-monitoring unit. She has a convulsive seizure that does not stop after 5 minutes, even after she receives a lorazepam injection. A second intravenous drug is given. Infusing which of the following antiepileptic drugs at more than 50 mg/minute in an adult may evoke a cardiac arrhythmia?

a		Carbamazepine
b		Diazepam
с		Phenobarbital
d		Clonazepam
e	*	Phenytoin
		•

A 44-year-old man presents with left arm shaking. Two days ago, the patient noticed left arm paresthesias along the lateral aspect of his left arm and left fourth and fifth fingers while he was reading. He thinks he may have been leaning on his left arm at the time; the symptoms resolved after 30 seconds. This morning, he noted the same feelings, lasting a few seconds, but then his fourth and fifth fingers started shaking rhythmically, and the shaking then spread to all of his fingers, his hand, and then his arm up to his elbow. This episode lasted a total of 30 seconds. He denies any strange smells or tastes, visual changes, or weakness. Afterward, his fingers felt locked in position for a few seconds. Then he felt as if he did not have control of his hand and had difficulty donning his socks. He and his wife decided to drive to the emergency room, and in the car he had trouble putting his seat belt latch into its socket. Examination and routine labs are normal. Which of the following is the

most	most appropriate next action?		
a	Discharge the patient to follow up in clinic in 2 weeks		
b [*]	Obtain a brain MRI		
c	Obtain an EEG		
d	Obtain an orthopedic consult		
e	Order electromyography (EMG) and nerve conduction studies (NCS)		
Δ 31	er-old right-handed woman has a history of alcohol abuse requiring detoy. Currently, she says she	is	
drink	about nine beers 3 days per week. She drank five glasses of wine and three beers 5 days ago. I a	15 net	
night	he had 10 beers. This morning she awoke feeling well. She was speaking with her figncé went to the	he	
hathr	m and got back into bed. She had no headache fever chills nausea vomiting or pain Suddenly h	er	
body	ecame stiff with arms flexed for a few seconds followed by rhythmic jerking of both arms. Her lex	σς	
were	aking but less so. Her eves were open and she was foaming at the mouth After 1 minute this stopped	ss ed	
and	e initially did not recognize her fiancé or his sister. She slowly returned to a normal level of	of	
cons	usness over a 10-minute period. She remembers events just prior to the episode, and she remember	ers	
being	the car on the way to the hospital. Her only medication is a multivitamin. She denies illicit drugs. He	er	
exam	ation is entirely normal. Routine labs and a brain MRI are normal. Following cessation of drinking, wh	at	
is the	eak time period for alcohol withdrawal seizures?		
a *	1-to-2 days		
b	2-to-3 days		
с	3-to-4 days		
d	4-to-5 days		
e	5-to-6 days		
A 4-	r-old boy has the onset of episodes of loss of body tone, with associated falls, as well as generalized	ed	
tonic	onic seizures. His cognitive function has been deteriorating. EEG shows 1-to-2 Hz spike-and-way	ve	
disch	ges. Which of the following is the most likely diagnosis?		
a	Landau-Kleffner syndrome		
b *	Lennox-Gastaut syndrome		
с	Juvenile myoclonic epilepsy		
d	Mitochondrial encephalomyopathy		
e	Febrile seizures		
A 27	ear-old man begins to experience infrequent episodes of nausea, warmth rising through his body, and a	an	
unus	odor like rotting fish. His girlfriend notices that afterward he may develop twitching of the right side of	of	
his fa	and an inability to speak for several minutes. Afterward the man appears dazed and cannot remember	er	
what	s occurred. He has otherwise been well. MRI of his brain is most likely to show a lesion in which of the	ne	
follo	ng areas?		
а	Left occipital lobe		
b	Right frontal lobe		
c	Cribriform plate		
d *	Hippocampus		
e	Left parietal lobe		
An 1	year-old girl riding on the back of her boyfriend's motorcycle without a helmet is brought in with a le	eft	
front	skull fracture and cortical contusion. Her Glasgow Coma Scale (GCS) is She is admitted to the intensiv	ve	
care	t. She has had no seizures. Which of the following is true regarding anticonvulsant therapy in this case	?	
a	It is contraindicated owing to risk of rash		
b	It is best achieved using phenobarbital		
c	It is likely to cause increased cerebral edema		
d	It is indicated to reduce the incidence of late posttraumatic epilepsy		
e *	It is indicated to reduce the incidence of early posttraumatic seizures		
A 36	ear-old man with intractable complex partial seizures and mesial temporal sclerosis (MTS) undergoe	es	
left t	poral lobectomy. He is most likely to develop which of the following problems after surgery?		
a *	Right superior quadrantanopsia		
b	Right inferior quadrantanopsia		
c	Right homonymous hemianopsia		

d	Right hand weakness
e	Aphasia
A 29-	year-old man with a history of febrile seizures as a child has developed medication-refractory complex
partia	seizures within the past 2 years. An MRI reveals the abnormality indicated by the arrow. Which of the
follov	ving is true regarding this condition?
a *	This patient may benefit from a neurosurgical procedure
b	The patient will probably die within 2 years
с	The seizures will most likely stop with further medication titration
d	A head computed tomography (CT) should be performed
e	A cerebral angiogram may confirm the diagnosis
A 37-	year-old man develops involuntary twitching movements in his left thumb. Within 30 seconds, he notices
that th	he twitching has spread to his entire left hand and that involuntary movements have developed in his left
forear	m and the left side of his face. He cannot recall what happened subsequently, but his wife reports that he
fell d	own and the entire left side of his body appeared to be twitching. He appeared to be unresponsive for
about	3 minutes and confused for another 15 minutes. During the episode, he bit his tongue and wet his pants.
Choos	e the seizure type that best explains the patient's complaints.
a	Generalized tonic-clonic
b	Generalized absence
c	Complex partial
d	Epilepsia partialis continua
e *	Jacksonian march
A 17-	year-old boy reports involuntary jerking movements in his arms when he awakens. This has occurred
during	g the day after a nap as well as in the morning after a full night's sleep. Over the next few months, he
devel	oped similar jerks during the day, even when he had been awake for several hours. He did not lose
consc	ousness with these muscle jerks, but did occasionally fall. On one occasion, jerks in his legs caused a fall
that re	esulted in a fractured wrist. Choose the seizure type that best explains the patient's complaints.
a	Jacksonian march
b	Psychomotor status
c	Tonic-clonic status epilepticus
d	Pseudoseizures
e *	Myoclonic
A 21-	year-old man reports several episodes over the previous 4 years during which he lost consciousness. He
had n	b warning of the impending episodes, and with each episode he injured himself. Observers told him that
ne abi	uptly developed a blank stare and stopped talking. His body became still and he arched his back. After
severa	is seconds of this type of posturing, his arms and legs started snaking violently. During one of these
episod	les, ne distocated his right shoulder. He fouthely bit his tongue and urmated in his pants during the
	Conorolized tonic clonic
a r h	Generalized absence
	Complex partial
d	Epilepsia partialis continua
u	Simple partial sensory
A 25	simple partial sensory
	ent episodes for several years during which she performed popsensical activities such as burying her
nlates	in the backyard biding her underwear, and discarding her checkbook. She did not recall what she had
done	after performing these peculiar activities. She had been referred for psychotherapy but the episodes
becan	be even more frequent after she was started on thioridazine. Her husband observed one episode and noted
that sl	he was unresponsive for about 5 minutes and confused for at least 1 hour. She did not fall down or remain
immo	bile during the episodes. As the episodes became more frequent, she noticed that she would develop an
unple	asant taste in her mouth, reminiscent of motor oil, just before an episode. Choose the seizure type that best
explai	ns the patient's complaints.
a	Generalized tonic-clonic
b	Generalized absence

с	*	Complex partial
d		Epilepsia partialis continua
e		Simple partial sensory
A	21-x	ver-old cocaine-abusing man develops seizures that persist for more than 30 minutes before emergency
me	dica d ha	attention is available. When examined nearly 1 hour later, he is still exhibiting tonic-clonic movements s never recovered consciousness. Choose the seizure type that best explains the patient's complaints.
a		Generalized tonic-clonic
h		Generalized absence
c		Jacksonian march
d		Psychomotor status
e	*	Tonic-clonic status enilenticus
Δ	16-v	rome clone status ophepheus ear-old boy with a history of acute viral myocarditis requires placement of a left ventricular assist device
He	has	a complicated postoperative course, with fever bacteremia and renal failure. On postoperative day 10
he	dev	elops continuous rhythmic jerking of the left corner of the mouth, associated with jerking of the left
thu	imb.	This persists for 24 hours. He is alert, able to follow commands, and has no gaze deviation. CT shows a
sm	all ł	nemorrhagic infarction of the right posterior frontal region. Choose the seizure type that best explains the
pat	tient	's complaints.
<u>р</u>		Generalized tonic-clonic
b		Generalized absence
c		Complex partial
d	*	Epilepsia partialis continua
e		Simple partial sensory
Δ	19 <u>-</u> v	vear-old woman describes recurrent memory problems. Her fiancé reports that she seems to be inattentive
for	· mir	utes at a time several times a week. She never injures herself during these episodes, but she cannot recall
wh	nnn at h	append and on one occasion, she became lost while walking home. An ambulatory EEG demonstrates
	at 11	appended, and, on one occasion, she became rost while waiking nome. The another the EEG pattern does
not	t ae	peralize CT and MRL scanning of the brain reveal no structural abnormalities. Conversations with the
WO	mar	a's parents reveal that she had fabrile seizures when she was 3 years old, which abated with antipyretic
tre	atm	ant alone. Choose the medication that is most appropriate in the management of the patient's problem
a	aum	I orazenam
a h		Magnesium sulfate
0		Clonazenam
с 1		Falbamata
u	*	Levetirecotem
e		Levelnacetani
A	/-m	onth-old boy develops generalized nind extension and neck flexion spasms that occur more than 20 times
da		the are associated with altered consciousness. EEG reveals diffuse, high-voltage, polyspike-and-slow-
wa	ive (inschafges between spasins and suppression of these bursts during the spasins. A stolling thed with a
UI2	unsi	bad abviews psychometer retardation even before the appearance of the appearance. Chaose the mediation
		mad obvious psycholitotor retardation even before the appearance of the spassifis. Choose the medication
	115	Dependential
a h		
0		Divelmoet and Dive
C d		Divalproex sodium
a	*	A drea a serti seturni a harmana (ACTU)
e ^	 5 _	Autenocorrectoropic normone (ACTH)
A	S-ye	ar-old girl has frequent staring spells and does not respond when her mother calls her name during these
epi	isod	es. She never fails down or bites her tongue, but she does have occasional lip smacking during episodes.
	Gr	eveals a 3 Hz spike-and-wave pattern that occurs for less than 10 seconds at a time but several times an
	ur. 1	ne child has normal motor and cognitive development. Choose the medication that is most appropriate in
the	e ma	nagement of the patient's problem.
a 1		Lorazepam
b		Feibamate
С	1	Phenobarbital

d		Levetiracetam
e	*	Divalproex sodium
A 3	5-y	rear-old pregnant woman at term is admitted to the hospital for delivery. She has headaches and visual
blur	ring	g. Her blood pressure is 180/On examination, she is edematous. Reflexes are increased. Protein is found
in t	he	urine. She then develops a generalized tonic-clonic convulsion. Choose the medication that is most
appr	rop	riate in the management of the patient's problem.
a		Lorazepam
b	*	Magnesium sulfate
с		Clonazepam
d		Felbamate
e		Phenobarbital
A 2	2-y	ear-old woman reports a scotoma progressing across her left visual field over the course of 30 minutes,
follo heac	owe faci	ed by left hemicranial throbbing pain, nausea, and photophobia. Her brother and mother have similar hes. Which of the following is present in this patient's condition but not in common migraine?
a		Photophobia
b		Familial pattern
c	*	Visual aura
d		Hemicranial pain
e		Nausea
A 1	6-v	rear-old woman has been having attacks of weakness blurry vision and loss of consciousness. The
svm	nto	oms progress over 20-to-30 minutes, then begin to recede and are followed by a throbbing occipital
head	fac	he. This patient's symptoms are most likely due to which of the following?
a	auci	Complex partial seizure
h		Common migraine
C	*	Basilar migraine
d		Transient ischemic attack
e		Orthostatic hypotension
A 4	3-v	ear-old woman describes lancinating pains radiating into the right side of her jaw. This discomfort has
beer	נס ב	resent for more than 3 years and has started occurring more than once a week. The pain is paroxysmal
and	rou	utinely triggered by cold stimuli, such as ice cream and cold drinks. She has sought relief with multiple
dent	tal	procedures and has already had two teeth extracted. Multiple neuroimaging studies reveal no structural
lesic	ons	in her head. Assuming there are no contraindications to the treatment, a reasonable next step would be
to p	reso	cribe which of the following?
a		Clonazepam, 1 mg orally three times daily
b		Diazepam, 5 mg orally two times daily
с		Divalproex sodium, 250 mg orally three times daily
d		Indomethacin, 10 mg orally three times daily
e	*	Carbamazepine, 100 mg orally three times daily
A 23	3-y	ear-old woman has had 1 week of worsening facial pain. She describes it as an intense shooting pain that
com	les	and goes. It is present only on her right face. Which of the following is most likely to be this patient's
unde	erly	ving problem?
a	*	Multiple sclerosis
b		Tolosa-Hunt syndrome
c		Migraine
d		Anterior communicating artery aneurysm
e		Falx meningioma
A 39	9-y	ear-old left-handed woman is being treated with carbamazepine for lancinating pain in her left face. The
pain	is	paroxysmal, usually occurring without apparent reason, but seems sometimes to be brought on by a cold
bree	eze.	Both trigeminal neuralgia and atypical facial pain involve pain that may be which of the following?
a		Lancinating
b		Paroxysmal
c		Associated with anesthetic patches
1		Alt-1'shed with more than a fight a second second bar

e	*	Unilateral		
A	26-y	year-old graduate student presents to the emergency room with a severe left-sided throbbing headache		
ass	associated with nausea, vomiting, and photophobia. She has tried taking ibuprofen without relief. On further			
que	questioning, she relates that she has been having similar headaches three to four times per month for the past			
yea	ır. H	Her mother had a similar problem. Her examination is normal. Immediate therapy for this patient's		
pre	sent	t headache might include which of the following drugs?		
a	*	Sumatriptan		
b		Nitroglycerine		
с		Verapamil		
d		Amitriptyline hydrochloride		
e		Phenobarbital		
A	16-1	zear-old girl has been diagnosed with migraine headaches. She has identified some triggers and made		
life	stvl	e changes, but still has 14 headaches per month. Appropriate long-term management might include a		
pre	scri	ption for daily use of which of the following medications?		
<u>r</u>		Metoclopramide hydrochloride		
h		Sumatrintan		
<u>с</u>		Oral contracentives (OCPs)		
d	*	Amitrintyline hydrochloride		
u e		Frontamine fartrate		
	22_V	Legotamine tartiate		
л. ner) 2-y	ek lasting until she falls asleen. The pain is constant and focused at the front and back of the head. The		
per	we n ie	unrelated to position and tends to be worse later in the day. There is mild photophobia. Which of the		
fol	n is Iowi	ing findings is most likely?		
3	*	Slightly reduced neck range of motion and paracervical tenderness		
h		Panilledema		
<u>с</u>		Abnormal brain magnetic resonance imaging (MRI)		
<u>d</u>		Abnormal brain computed tomography (CT)		
u o		Abnormal electroencenhalogram (EEG)		
	$n \tau$	Abiofinal electroencephalogram (EEG)		
H 4	2∠-y itad	to the right side of her head and contered about the right temple. She knows that a headache is coming		
hac		a of changes in her vision that precede the headache by 20 to 30 minutes. She sees scintillating lights		
ine	aus t to	the left of her center of vision. This visual aberration then expands and interferes with her vision. The		
bli	nd s	not that it creates appears to have a scintillating margin. As the blind spot clears, the headache starts. It		
rar	alv]	lasts more than 1 hour, but is usually accompanied by nausea and vomiting. Pick the diagnosis that best		
ext	lair	is the clinical nicture		
<u>2</u>	*	Classic migraine		
h		Cluster headache		
<u>с</u>		Common migraine		
d		Trigeminal neuralgia		
u e		Sinusitis		
	20_1	sinusins		
the	ر-رے اول	t side of her face just below her eve. These last less than 1 second at a time, but are so severe that she		
win		involuntarily with each pain. The pain seems to be triggered by drinking cold fluids. The only other		
nro	hlei	my she has noticed are clumsiness in her right hand and blurred vision in her right eve. Both of these have		
hee	been present for more than 2 years and have not interfered with her normal activities. Pick the diagnosis that			
hes	best explains the clinical nicture			
a		Classic migraine		
b b		Cluster headache		
<u>с</u>		Common migraine		
d	*	Trigeminal neuralgia		
e		Sinusitis		
A	35-v	vear-old man has severe throbbing pain waking him from sleep at night and persisting into the day. This		

A 35-year-old man has severe throbbing pain waking him from sleep at night and persisting into the day. This pain is usually centered about his left eye and appears on a nearly daily basis for several weeks or months each

year. It occurs most prominently at night within a few hours of falling asleep and is associated with a striking personality change in which the man becomes combative and agitated. He never vomits or develops focal weakness. Pick the diagnosis that best explains the clinical picture.

a		Classic migraine
b	*	Cluster headache
С		Common migraine
d		Trigeminal neuralgia
e		Sinusitis
A '	76-y	vear-old man develops a dull left-sided head pain with some radiation of the discomfort to the right side
of	the	head. He has no nausea or vomiting with the pain, but has lost 10 lb over the previous 2 months. His
ery	thro	ocyte sedimentation rate is 102 mm/h, and he is mildly anemic. An extensive investigation for
ma	lign	ancy reveals no signs of lymphoma, carcinoma, or leukemia. Pick the diagnosis that best explains the
cli	nica	l picture.
а		Classic migraine
b		Cluster headache
c		Common migraine
d		Trigeminal neuralgia
e	*	Temporal arteritis
An	81-	-year-old man with chronic lymphocytic leukemia develops pain and burning over the right side of his
fac	e. V	Vithin a few days, a vesiculopapular rash in the distribution of the first division of the trigeminal nerve
app	bear	s. The vesicles become encrusted, and the burning associated with the rash abates. Within 1 month the
ras	h ha	as largely resolved, but the man is left with a dull ache over the area of the rash that is periodically
pu	nctu	ated by shooting pains. Imipramine 100 mg nightly helps reduce the intensity of the chronic pain. Pick
the	dia	gnosis that best explains the clinical picture.
a		Sinusitis
b		Temporal arteritis
с		Vertebrobasilar migraine
d		Hemiplegic migraine
e	*	Postherpetic neuralgia
An	obe	ese 37-year-old woman has had a daily headache, worse in the morning, for 1 year. She has episodes of
tra	nsie	nt visual obscurations affecting each eve and also hears a pulsatile tinnitus. Examination is notable for
bil	atera	al papilledema. MRI is normal. Select the most likely diagnosis.
а		Carotid artery dissection
b	*	Pseudotumor cerebri
с		Glioblastoma multiforme
d		Thunderclap headache
e		Analgesic rebound headache
A	42-v	rear-old man presents with a sudden and severe headache associated with nausea. The headache reaches
ma	xim	al intensity within 5 seconds. He has no prior history of headache. Examination is unremarkable. CT and
spi	nal	fluid examination show no evidence of blood. He later admits that he had been engaged in sexual activity
wh	en f	he headache occurred. Select the most likely diagnosis.
a		Carotid artery dissection
h		Pseudotumor cerebri
C		Glioblastoma multiforme
d	*	Thunderclan headache
e		Analgesic rebound headache
	20_	vear-old man relates that he has had recent headaches only when standing up. The headaches resolve
	ckh	when he lies down and are accompanied by mild nausea. His examination is normal. Select the most
լ գա	oki olv 4	liagnosis
9		Carotid artery dissection
a h		Analgesic rebound headache
0	$\left - \right $	Parovysmal hemicrania
4		Paodor syndromo
u		תמכנוכו באווטוטווכ

e	*	Intracranial hypotension		
A	35-y	rear-old woman works as a keyboard operator and must type for 6 hours per day. Over the course of a		
fev	few months she has developed pain in her wrists (right worse than left), as well as some paresthesias into the			
late	eral	palmar aspect of her hands. There is no atrophy. Conservative treatment for her condition consists of		
wh	ich	of the following?		
а		Exploratory surgery		
b	*	Wrist splints		
c		Hydrocodone		
d		Shoulder sling		
e		Back brace		
A	28-x	year-old police officer has been generally healthy except for mild easily controlled hypertension. He		
5115	20 y	s a sunshot wound to the upper arm. This type of trauma may cause partial damage to the median nerve		
tha	t m	av leave the patient with which of the following?		
a	*	Easily provoked pain in the hand		
h		Weakness on wrist extension		
C C		A trophy in the first dorsal interoscous muscle		
с 		Numbross over the fifth digit		
u		Padial deviation of the hand		
	10 1	Radial deviation of the finde		
A	19-y	I blow hits his left albow. Plunt trauma to the albow may lead to the development of which of the		
fol	low	in blow fints first left elbow. Brunt trauma to the elbow may lead to the development of which of the		
101	IOWI	Wristdrop		
a h		Wastrass of the character pollicie browie		
D	*	Clawband on banadiation sign (impaired automaion of digits 4 and 5)		
C		Clawhand of benediction sign (impaired extension of digits 4 and 5)		
a		Ulnar deviation of the hand		
e		Poor pronation of the forearm		
A	21-y	year-old right-handed woman works at an airport as a luggage handler. She is usually on the tarmac		
WO	rkin	ig in an environment in which loud noises are routine. Ear protection must be worn to protect against loss		
01	near	Nextice		
a 1	*	Vertigo		
D				
C 1				
d				
e		Oscillopsia		
A	your	ng man fractures his humerus in an automobile accident. As the pain from the injury subsides, he notices		
we	akne	ess on attempted flexion at the elbow. He develops paresthesias over the radial and volar aspects of the		
for	earn	n. During the accident, he probably injured which one of the following nerves?		
a		Suprascapular nerve		
b		Long thoracic nerve		
С	*	Musculocutaneous nerve		
d		Radial nerve		
e		Median nerve		
A	37-у	vear-old alcoholic man awakes with clumsiness of his right hand. Neurologic examination reveals poor		
ext	ensi	on of the hand at the wrist. He most likely has injured which one of the following nerves?		
a		Median nerve		
b		Brachioradialis nerve		
с		Musculocutaneous nerve		
d	*	Radial nerve		
e		Ulnar nerve		
A	72-у	vear-old man slipped and fell in the bathroom 1 week ago. He hit the right side of his head, but did not		
thi	think it was necessary to seek medical attention. He finally goes to his doctor because his son thinks his balance			
is o	off. (Computed tomography (CT) of the brain may fail to reveal a small subdural hematoma in this patient for		
wh	ich	of the following reasons?		

а	*	The lesion is subacute	
b		The hematoma extends into the brain from the subdural space	
c		The resolution of the CT machine is greater than 2 mm	
d		The subdural hematoma is less than 4 hours old	
e		The patient has extensive cerebral atrophy	
Δ	16-3	vear-old boy is struck on the side of the head by a bottle thrown by a friend involved in a prank. He	
an	near	s dazed for about 30 seconds, but is lucid for several minutes before he abruntly becomes stuporous. His	
lin	pear phe i	on the side opposite the site of the blow are more flaccid than those on the same side as the injury. On	
arr	ival	in the emergency room 25 minutes after the accident he is unresponsive to painful stimuli. His pulse is	
40	hea	ts per minute, with an electrocardiography (ECG) revealing no arrhythmias. His blood pressure in both	
arr	ns is	s 170/110 mm Hg. Although papilledema is not evident in his fundi, he has venous distention and absent	
nu	lsati	ons of the retinal vasculature. Which of the following is the best explanation for this young man's	
ev	olvii	ng clinical signs?	
a		A seizure disorder	
b		A cardiac conduction defect	
c	*	Increased intracranial pressure	
d		Sick sinus syndrome	
e		Communicating hydrocenhalus	
Δ	52-x	year-old patient presents with headache and sudden onset of mania. Her head CT is shown below. Two	
ho	92 J 11rs 1	ater her blood pressure is 225/110 mm Hg her heart rate is 40 heats per minute and her consciousness is	
flu	ctua	ting. Which of the following is the best management over the next 4 hours for this patient?	
2	*	Craniotomy	
h		Antihypertensive medication	
C		Transvenous nacemaker placement	
d		Ventriculoperitoneal shunt	
u e		Antienileptic medication	
Δ	64-1	vear-old woman slips and falls on an icy sidewalk. She hits the side of her head on the curb. After a	
m	omei	ntary loss of consciousness she recovers but is in some pain Fifteen minutes later her level of	
co	nsci	ousness begins to fluctuate and she is brought to the emergency room comatose. Magnetic resonance	
im	agin	g (MRI) of the patient's head within the first few hours of injury will most likely reveal which of the	
fol	low	ing?	
a		A normal brain	
b		Intracerebral hematoma	
с		Temporal lobe contusion	
d		Subarachnoid hemorrhage	
e	*	Epidural hematoma	
CT	sca	anning of a patient's head within 2 hours of a newly acquired epidural hematoma should reveal which of	
the	e fol	lowing?	
a		A normal brain	
b	*	A lens-shaped density over the frontal lobe	
c		Increased cerebrospinal fluid (CSF) density with a fluid-fluid level	
d		Multifocal attenuation of cortical tissue	
e		Bilateral sickle-shaped densities over the hemispheres	
Ar	n eld	lerly patient suffers from a relatively mild head trauma but then subsequently develops a progressive	
de	men	tia over the course of several weeks. He is most likely to have sustained which of the following?	
a		An acute subdural hematoma	
b		An acute epidural hematoma	
c	*	A chronic subdural hematoma	
d		An intracerebral hematoma	
e		An intracerebellar hematoma	
A	42-	year-old woman is involved in a head-on collision with a lamp-post at 50 mph. Her head hits the	
wi	windshield. She is highly likely to have an intracranial hemorrhage in which one of the following structures?		
a		Occipital lobe	
	1		

b		Thalamus	
с		Putamen	
d		Parietal lobe	
e	*	Temporal lobe	
A	57-1	year-old woman is involved in a motor vehicle accident in which she strikes the windshield and is briefly	
und	cons	scious. She makes a full recovery, except that 3 months later she notices that she cannot taste the food she	
is e	eatir	This is most likely caused by which of the following?	
3	Juin	Medullary infarction	
h		Temporal lobe contusion	
C C		Sphenoid sinus hemorrhage	
с 		Deputcin use to provent solution	
u	*	Augleien of olfostery restlets	
e	10	Avuision of officiory footiets	
An	118-	-year-old boy is brought into the emergency room after diving into a shallow pool. He is awake and alert,	
nas	s int	act cranial nerves (CNS), and is able to move his shoulders, but he cannot move his arms or legs. He is	
fla		and has a sensory level at CAppropriate management includes which of the following?	
a		Naloxone hydrochloride	
b	*	Intravenous methylprednisolone	
С		Oral dexamethasone	
d		Intubation and preparation for immediate surgery	
e		Hyperbaric chamber therapy	
A	53-y	year-old office worker presents to clinic stating, "My hands are numb." Upon questioning she says that	
bot	th o	f her hands have a sensation like "a shot at the dentist." She also believes that her hands are weaker than	
the	ey us	sed to be. It fluctuates during the course of the day, but is worst at the end of the work day and during the	
ear	ly 1	morning hours. The symptoms have been progressively worsening over the past 1-to-2 years. On	
exa	amiı	nation the abductor pollicus brevis is weak bilaterally, and there is decreased sensation to pinprick over	
the	e ant	erior portions of digits 1-to-Which of the following will most likely be positive?	
a	*	Tinel sign	
b		Brudzinski sign	
с		Kernig sign	
d		Monrad-Krohn test	
e		Babinski sign	
Th	e m	ost striking neurological complication of von Economo encephalitis (encephalitis lethargica), a type of	
end	ceph	alitis that occurred in epidemic proportions along with viral influenza between 1917 and 1928, was	
wh	ich	of the following?	
а		Blindness	
h		Hearing loss	
C C		Paranlegia	
d	*	Parkinsonism	
a		Incontinence	
	27	mediation is noted to have lumphedenonethy on routing physical examination. Following on	
A 37-year-old woman is noted to have lymphadenopathy on routine physical examination. Following an			
owt		(CN) is most likely to be injured in this notion?	
ext	rve (Civ) is most likely to be injured in this patient?	
ext ner			
ext ner a			
ext ner a b			
ext ner a b c	*		
ext ner a b c d			
ext ner a b c d e	17-y		
ext ner a b c d e A	including electromyography (EMG)/nerve conduction studies (NCS) suggests a motor neuron disease. The		
ext ner a b c d e A inc		/ear-old girl presents initially with fever and progressive weakness. An extensive neurological evaluation ing electromyography (EMG)/nerve conduction studies (NCS) suggests a motor neuron disease. The	
ext ner a b c d e A inc mo	otor	/ear-old girl presents initially with fever and progressive weakness. An extensive neurological evaluation ing electromyography (EMG)/nerve conduction studies (NCS) suggests a motor neuron disease. The neuron disease most certainly traced to a virus is which of the following?	
ext ner a b c d e A inc mo	otor *	vear-old girl presents initially with fever and progressive weakness. An extensive neurological evaluation ing electromyography (EMG)/nerve conduction studies (NCS) suggests a motor neuron disease. The neuron disease most certainly traced to a virus is which of the following? Poliomyelitis	
ext ner a b c d e A inc mo a b	otor *	year-old girl presents initially with fever and progressive weakness. An extensive neurological evaluation ing electromyography (EMG)/nerve conduction studies (NCS) suggests a motor neuron disease. The neuron disease most certainly traced to a virus is which of the following? Poliomyelitis Subacute sclerosing panencephalitis (SSPE)	

d	Subacute human immunodeficiency virus (HIV) encephalomyelitis
e	Kuru
A 35-	vear-old woman who has received a liver transplant develops meningeal signs and fever. Cerebrospinal
fluid ((CSF) testing with India ink stain reveals a fungal infection. Which of the following is the cause of this
patien	t's fungal meningitis?
a	Aspergillus
b	Candida
c	Mucor
d *	Cryptococcus
e	Rhizopus
A 28-	vear-old man who has recently immigrated from Brazil presents with 3 months of fluctuating but slowly
progre	essive bilateral lower extremity weakness, a little worse on the left side than on the right. After a complete
evalua	ation, a parasite is diagnosed as the etiology. This organism's ova usually damage the nervous system at
the lev	vel of which of the following?
a	Cerebrum
b	Cerebellum
с	Basal ganglia
d *	Spinal cord
e	Peripheral nerves
A 12-	-vear-old boy has left body weakness. A brain magnetic resonance imaging (MRI) scan reveals a
polvey	visitic lesion. The parasitic brain lesion most likely to have a large cvst containing numerous daughter cvsts
is that	associated with which of the following?
a	Taenia solium
b	Schistosoma haematobium
c *	Echinococcus granulosa
d	Diphyllobothrium latum
e	Schistosoma japonicum
An 82	e-vear-old previously healthy woman with a recent upper respiratory infection presents with generalized
weakr	bess, headache, and blurry vision. For the past 2 weeks she has had upper respiratory symptoms that
started	with a sore throat, nasal congestion, and excessive coughing. She went to her primary care doctor 4 days
ago ar	nd was diagnosed with sinusitis. She was given a prescription for an antibiotic and took it for 2 days, then
stoppe	ed. She thereafter had chills, lightheadedness, vomiting, blurry vision, general achiness, and a headache
that st	arted abruptly and has not gotten better since. Except for blurry vision, she has not had any other visual
sympt	oms. The blurry vision remains when she closes either eye. She also has eye tenderness with movement
and m	ild photosensitivity. She has no drug allergies. Examination findings include temperature of 5°F (16°C),
nucha	l rigidity, and sleepiness. Which of the following is the next most appropriate action in this case?
a	Get a brain MRI, then perform a lumbar puncture
b	Give the patient a prescription for oral azithromycin and let her go home
c *	Immediately give intravenous ceftriaxone plus ampicillin
d	Immediately start intravenous acyclovir
e	Obtain CSF and blood cultures and observe the patient until the results come back
A 52-	year-old generally healthy woman has had a gradual neurological deterioration over the past 6 to 8
month	s. It began with depression and a mild change in personality. Eventually she developed weakness and
nonpu	rposeful movements of her left hand, as well as significant cognitive decline. All serologies were
negati	ve. MRI showed abnormal restricted diffusion in portions of the cortical gray matter and deep nuclei.
Electr	oencephalography (EEG) had diffuse slowing and triphasic waves. Routine spinal fluid examination in
this pa	atient would be expected to show which of the following?
a *	No abnormalities on routine studies
b	Elevated protein
с	More than 100 lymphocytes
d	More than 1000 red blood cells
e	Decreased glucose
A 17-	year-old right-handed boy has had infectious meningitis eight times over the past 3 years. He has

oth	otherwise been generally healthy and developed normally. Recurrent meningitis often develops in persons with		
wh	ich	of the following?	
a		Otitis media	
b		Epilepsy	
c		Multiple sclerosis	
d		Whipple disease	
e	*	CSF leaks	
An	82	-year-old man with a history of pulmonary tuberculosis in 1947 presents with left body weakness and	
neg	glect	t. MRI shows a right frontal lesion, which is subsequently biopsied. The pathology suggests that the	
pat	ient	has recurrent tuberculosis. This mass lesion most likely consisted of which of the following?	
a		Dysplastic central nervous system (CNS) tissue	
b	*	Caseating granulomas	
с		Heterotopias	
d		Gram-positive bacteria	
e		Mesial sclerosis	
Α	31-1	year-old homosexual man has had headache, sleepiness, and poor balance that have worsened over the	
pas	st w	eek. The patient is known to be HIV seropositive, but has done well in the past and has not seen a doctor	
in	over	1 year. On examination, his responses are slow and he has some difficulty sustaining attention. He has a	
rig	ht h	emiparesis with increased reflexes on the right. Routine cell counts and chemistries are normal. Which of	
the	fol	lowing is the most appropriate next step in management?	
а	*	Head computed tomography (CT) with contrast	
b		Noncontrast head CT	
c		Perform a lumbar puncture	
d		Start antiretroviral therapy	
e		Start intravenous heparin	
A	52-v	year-old woman with acquired immune deficiency syndrome (AIDS) presents to the emergency room	
wi	th m	hild left heminaresis and altered mental status. A CT scan reveals several rim-enhancing lesions with	
mi	nim	al mass effect. Which of the following is the best next step in management?	
а		Get a cerebral angiogram	
b		Order a ventricular CSF aspiration	
c	*	Perform a lumbar puncture and include CSF for Epstein-Barr virus (EBV) PCR in tests ordered	
d		Stop all antiretroviral therapy	
e		Treat with intravenous acyclovir	
A	32-v	rear-old intravenous drug abuser presents with more than 2 weeks of left body weakness. Brain CT scan	
rev	yeals	several ring-enhancing lesions and an HIV test is positive Serological CSF and MRI testing support	
the	dia	agnosis of an obligate intracellular parasite. Which of the following is the best treatment for HIV	
ass	ocia	ated with this opportunistic infection?	
a		Intravenous acyclovir	
h		Neurosurgical removal of the lesions	
C		Oral fluconazole	
d	*	Sulfadiazine and pyrimethamine	
e			
	35_1	rear-old woman has progressive numbress of the right arm and difficulty seeing objects in the right visual	
fie	ld S	The is known to be HIV positive, but has not consistently taken medications in the past. On examination	
she	an	nears healthy but has a right homonymous hemianonsia and decreased sensory perception in her right	
1101	ner i	extremity and face. Her CD4 count is 75 cells per ul and her MRI is consistent with a demyelinating	
les	ion	of the left parietooccipital area CSE PCR for IC virus is positive. Which of the following is the most	
ani	non	riate treatment in this case?	
a a a a a a a a a a a a a a a a a a a		Amphotericin B	
h		Cranial radiation	
C	*	Highly active antiretroviral therapy ($HAART$)	
4	$\left \right $	Intravenous acyclovir	
u a		Intravenous ceftriavone	
C			

A 72-year-old right-handed woman has 2 days of headache and fever, followed by worsening confusion. She is taken to the hospital after having a generalized seizure. A head CT is consistent with left temporal hemorrhage and swelling. Localization of encephalitis to the medial temporal or orbital frontal regions of the brain is most consistent with which of the following?

ล		Treponema pallidum
h		Varicella zoster virus
c	*	Hernes simplex virus
d		Cryptococcus neoformans
u A		Toxonlasma gondii
	21	rox old college student was found welling around his dormitory nelsed. He is discrimined instructive
A	21-y 1 ch	r_{cal} -old conlege student was found walking around ins domitory laked. The is disorrented, materially,
		ows poor comprehension. In the emergency room he is round to have a rever of 102 F (8 C). There are
10	app 1 th	arent motor, sensory, or coordination abnormanues. The emergency room physician orders a brain WRT
		a decides to perform a fundar puncture. Neuronnaging of the brain before attempting a fundar puncture
18 2	iavi	The discussion was be activated to the basis of MDL share.
a 1	4	The diagnosis may be evident on the basis of MRT alone
b	*	Massive edema in the temporal lobe may make herniation imminent
С		The CT picture may determine whether a brain biopsy should be obtained
d		Shunting of the ventricles is usually indicated, and the imaging studies are needed to direct the
		placement of the shunt
e		It may establish which pathology is responsible
A	67-у	rear-old man presents with headache, fever, disorientation, and seizures. CSF testing establishes that the
pat	ient	has the most common form of acute encephalitis. The CSF changes late in the course of this disease
typ	oical	ly include which of the following?
a	*	An increased number of lymphocytes
b		A glucose content of less than two-thirds the serum level
c		A protein content of less than 45 mg/dL
d		A normal opening pressure
e		A predominance of polymorphonuclear white blood cells (WBCs)
A	27-у	year-old man presents to his primary care doctor with a low-grade fever, headache, and neck stiffness,
wh	ich	have become more bothersome over the past 1-to-2 weeks. CSF and serological testing for Lyme disease
is	posi	tive, and antibiotic treatment is initiated. The cranial neuropathy most commonly found with Lyme
dis	ease	e is that associated with damage to which CN?
a		III
b		V
с	*	VII
d		IX
e		XII
Th	e pa	thologic specimen depicted here shows the only intracranial lesion found in this patient. This patient
wo	uld	be expected to exhibit which of the following symptoms?
а		Seizures
b	*	Gait ataxia
с		Hemiparesis
d		Visual loss
e		Hallucinations
A	13-v	rear-old boy is brought into the emergency room lethargic with a stiff neck and fever. Despite aggressive
the	rany	y, the child dies. Postmortem evaluation reveals that the child had primary amebic meningoencenhalitis
Th	is co	ondition is usually acquired through which of the following means?
a	*	Freshwater swimming
h		Eating contaminated meat
c		Eating calves' brains
d		Anal intercourse
e		Animal hites
Δ	40 -	running ones
А	+0-	year-ord man drea nom complications related to ADS. Flor to his death, there had been a steady

cognitive decline. Both HIV and cytomegalovirus infections in the brain characteristically produce which of the following? Senile plaques a Intraneuronal amyloid b Intranuclear inclusions с d Intracytoplasmic inclusions * Microglial nodules e Following several days of low-grade fever and mild neck and head pain, a 10-year-old boy develops bilateral face drooping and difficulty fully closing his eyes. Serum is positive for Borrelia burgdorferi IgM. CSF polymerase chain reaction (PCR) is also positive for this organism's DNA. After B burgdorferi is introduced by the tick that carries it, the skin around the bite develops which of the following? An exfoliative dermatitis a b Purpura Localized edema с * Erythema chronicum migrans d Vesicular lesions e A 59-year-old right-handed woman has been clinically diagnosed with encephalitis. While CSF and MRI studies are pending, a medical student suggests ordering an EEG. Which of the following EEG findings is most associated with herpes encephalitis? α Activity over the frontal regions a β Activity over the temporal regions b Three-per-second spike-and-wave discharges с * Bilateral, periodic epileptiform discharges d Unilateral δ activity over the frontal region e A 9-year-old boy presents with bilateral CN VII deficits. Serum and CSF analysis suggests B burgdorferi is the etiology. Which of the following medications is the most appropriate treatment? Streptomycin a Ceftriaxone * b Gentamicin с d Isoniazid e Rifampin A 41-year-old homosexual man is brought to medical attention by his partner because of headache, sluggish mentation, and impaired ambulation worsening over the previous week. The patient is known to be HIV seropositive, but has done well in the past and has not sought regular medical attention. On examination, his responses are slow and he has some difficulty sustaining attention. He has a right hemiparesis with increased reflexes on the right. Routine cell counts and chemistries are normal. A contrast head CT reveals several ringenhancing lesions. Eventually, surgical aspiration of one of the lesions reveals that they are abscesses. Abscesses in the brain most often develop from which of the following? Hematogenous spread of infection a Penetrating head wounds b Superinfection of neoplastic foci с d Dental trauma Neurosurgical intervention e A 50-year-old woman presents to the emergency room with lethargy, fever, and moderately low blood pressure. She has a fever workup, is started on IV fluids and antibiotics, and is then admitted to the hospital. A diagnosis of bacterial endocarditis is made. On day 2 of her admission, she has developed a right upper extremity drift and her speech has decreased fluency. A head CT reveals a rim-enhancing lesion in the left frontal lobe. Which of the following is the most common site for formation of this type of lesion? Putamen a b Thalamus Head of the caudate с Gray-white junction d * Subthalamus e

A 70-year-old man presents with right body (face and arm > leg) weakness, which he says has gradually developed over several months. Medical history includes hypertension, smoking, and the occasional use of prostitutes. RPR serological testing is positive. Which of the following consequences of this patient's likely diagnosis may present a picture easily confused with brain tumor?

ula	gno	sis may present a picture easily confused with brain tumor?
a		A reaction to penicillin treatment occurs
b	*	An intracranial gumma forms
с		Tabes dorsalis is the primary manifestation of the disease
d		Meningovascular disease develops
e		The patient is a newborn with congenital acquired disease
A	9-ye	ear-old girl is playing in a wooded area of her backyard. She notices a furry animal in the brush. As it
doe	es n	ot seem to fear her, she approaches to pet it. As soon as she touches the creature, it bites her and runs
aw	ay. 1	Her parents bring her to the emergency room for evaluation. The emergency room physician is extremely
cor	ncer	ned that the patient may have been exposed to a deadly virus and orders immediate injections of
im	mun	oglobulin. From the brain, this pathogen establishes itself for transmission to another host by spreading
to	whic	ch of the following?
a		Intestines
b		Nasopharynx
c		Lungs
d		Bladder
e	*	Salivary glands
A .	38-y	year-old man, who is immunocompromised because of HIV, presents with 1 month of worsening right
hea	adac	he, ear pain, and fever. He is determined to have malignant external otitis and osteomyelitis of the base
of	the s	skull. Culture of the lesion reveals a fungal etiology. What is the most likely causative organism?
a		Nocardia
b		Cryptococcus neoformans
с		Actinomyces
d	*	Aspergillus
e		
U		Candida
A	55-y	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also
A dev	55-y velo	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's
A dev syr	55-y velo npto	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's pms are being caused by which of the following?
A dev syr	55-y velo npto	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment
A dev syr a b	55-y velo npto	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction
A dev syr a b c	55-y velo npto	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis
A dev syr a b c d	55-y velo npto	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis
A dev syr a b c d e	55-y velo npto	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis A chronic rhombencephalitis
A dev syr a b c d e Wł	55-yvelo npto *	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis A chronic rhombencephalitis of the following is the most common cause of brain abscess in patients with AIDS?
A dev syr a b c d e Wh a	55-y veloy npto *	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis A chronic rhombencephalitis of the following is the most common cause of brain abscess in patients with AIDS? Cryptococcus neoformans
A dev syr a b c d e Wh a b	55-y velo npto *	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis A chronic rhombencephalitis of the following is the most common cause of brain abscess in patients with AIDS? Cryptococcus neoformans Toxoplasma gondii
A dev syr a b c d e Wh a b c	s5-yvelo mptc *	Candida /ear-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis A chronic rhombencephalitis of the following is the most common cause of brain abscess in patients with AIDS? Cryptococcus neoformans Toxoplasma gondii Tuberculosis
A dev syr a b c d e W H a b c d d	s55-yvelo mptc	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis A chronic rhombencephalitis of the following is the most common cause of brain abscess in patients with AIDS? Cryptococcus neoformans Toxoplasma gondii Tuberculosis Cytomegalovirus
A dev syr a b c d e Wh a b c c d e	xelo mptc	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis A chronic rhombencephalitis of the following is the most common cause of brain abscess in patients with AIDS? Cryptococcus neoformans Toxoplasma gondii Tuberculosis Cytomegalovirus Herpes zoster
A dev syr a b c d e WH a b c d d e A	xelo mptc * nich	Candida year-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's oms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis A chronic rhombencephalitis of the following is the most common cause of brain abscess in patients with AIDS? Cryptococcus neoformans Toxoplasma gondii Tuberculosis Cytomegalovirus Herpes zoster year-old woman is bitten by a small doglike wild animal while camping. The animal immediately runs
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A dev syr a b c d e Wh a b c d d e Mh c d d e T x yp ner a	state in the second sec	Candida //ear-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's sms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis A chronic rhombencephalitis of the following is the most common cause of brain abscess in patients with AIDS? Cryptococcus neoformans Toxoplasma gondii Tuberculosis Cytomegalovirus Herpes zoster //ear-old woman is bitten by a small doglike wild animal while camping. The animal immediately runs Her skin is barely broken, and, besides feeling a little frightened, she says that she is fine. Despite this, end convinces her to be evaluated in the nearest emergency room. Which of the following viruses that ly invade the CNS by extending centripetally (ie, inward away from the periphery) along peripheral is the woman most at risk for?
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A dev syr a b c d e w H a b c d e a w her typ ner a b c d e c d e c d e c d a b c d c d e c d a b c d d b c c d d c d c d c d c d c d c	state in the second sec	Candida vear-old woman has progressive dementia over the past year. Within the past 3 months she has also ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's ms are being caused by which of the following? A response to penicillin treatment An autoimmune reaction An acute meningoencephalitis A chronic meningoencephalitis A chronic rhombencephalitis of the following is the most common cause of brain abscess in patients with AIDS? Cryptococcus neoformans Toxoplasma gondii Tuberculosis Cytomegalovirus Herpes zoster vear-old woman is bitten by a small doglike wild animal while camping. The animal immediately runs Her skin is barely broken, and, besides feeling a little frightened, she says that she is fine. Despite this, end convinces her to be evaluated in the nearest emergency room. Which of the following viruses that ly invade the CNS by extending centripetally (ie, inward away from the periphery) along peripheral is the woman most at risk for? Mumps Measles Varicella zoster Polio Rabies

WO	word-finding difficulties. Which of the following is the most common symptom in patients with brain abscess?		
a		Nausea and vomiting	
b		Ataxia	
с	*	Headache	
d		Neck stiffness	
e		Seizures	
Α	75-1	year-old left-handed woman presented to the emergency room with what at first was thought to be a	
stre	oke.	History was significant for pneumonia 5 weeks ago. Following neuroimaging, the situation became less	
cle	ar, a	and ultimately an enhancing brain lesion was aspirated via stereotaxic needle placement. Culture of the	
asp	oirat	e grew out bacteria. The most likely organism is which of the following?	
a	*	Streptococcal	
b		Staphylococcal	
с		Bacteroides spp.	
d		Proteus spp.	
e		Pseudomonas spp.	
A	52-v	ear-old woman develops progressive dementia, tremors, gait ataxia, and myoclonic jerks over the course	
of	6 m	onths. Her speech is slow and slurred, and hand movements are clumsy. No members of her immediate	
fan	nily	have a history of degenerative neurological disease. MRI of the head reveals a subtle increase in T2	
sig	naĺ	in the basal ganglia bilaterally. EEG reveals disorganized background activity with periodic sharp-wave	
dis	chai	rges that occur repetitively at 1-second intervals and extend over both sides of the head. Arteriogram	
rev	eals	no vascular abnormalities. The clinical picture is most consistent with which of the following?	
а		Multi-infarct dementia	
b		Tabes dorsalis	
с		Friedreich disease (Friedreich ataxia)	
d		Subarachnoid hemorrhage	
e	*	Spongiform encephalopathy	
A	91-y	vear-old woman has 3 days of gradually worsening fever and headache. She then develops blurry vision	
and	1 a	stiff neck. Her granddaughter becomes concerned and brings her to the emergency room. MRI with	
cor	ntras	st has an enhancement pattern suggesting rhombencephalitis. CSF shows a mild pleocytosis with no	
org	ganis	sms. All blood and CSF cultures are negative. Which of the following medications is the best treatment	
for	the	organism likely responsible for the patient's condition?	
а		Penicillin G	
b	*	Ampicillin plus gentamicin	
с		Tetracycline	
d		Ceftriaxone	
e		Rifampin	
A	51-y	year-old woman with an 8-month history of neurological decline dies after a severe bout of aspiration	
pne	eum	onia. Autopsy of her brain reveals extensive loss of granule cells in the cerebellum and other changes	
mo	st o	bvious in the cerebellar cortex. Fine vacuoles give the brain a spongiform appearance. No senile plaques	
are	evi	dent. The patient could have acquired this progressive disease through which of the following means?	
а		Sexual intercourse	
b		A blood transfusion	
С		Consumption of raw fish	
d		An upper respiratory infection	
e	*	Growth hormone treatment	
A	27-y	year-old man develops recurrent episodes of involuntary movements. He abused intravenous drugs for	
sev	veral	years and has had several admissions for recurrent infections, including subacute bacterial endocarditis.	
His	His involuntary movements are largely restricted to the right side of his body and are associated with		
hoa	arse	ness and difficulty swallowing. The patient has lost 40 lb over the past 4 months. Examination reveals	
1.1.1	f	Is we had a south a solution of the solution o	

diffuse lymphadenopathy and right-sided hypertonia. His CSF is normal except for a slight increase in protein content. CT reveals a large area of decreased density on the left side of the cerebrum. EEG reveals diffuse slowing over the left side of the head. Biopsy of this lesion reveals oligodendrocytes with abnormally large nuclei that contain darkly staining inclusions. There is extensive demyelination, and there are giant astrocytes in

the lesion. Over the course of 1 month, the man exhibits increasing ataxia. Within 2 months, he shows evidence of mild dementia and seizures. Within 3 months of presentation, his dementia is profound, and he has bladder and bowel incontinence. Over the course of a few days, he becomes obtunded and dies. Select the condition that best fits clinical scenario.

000	best his enhied sechario.		
a		Subacute HIV encephalomyelitis (AIDS encephalopathy)	
b		SSPE	
с	*	PML	
d		Rabies encephalitis	
e		Guillain-Barré syndrome	
An	An 18-year-old man notices tingling about his ankles 2 weeks after an upper respiratory tract infection. Within		
2 c	2 days, he has weakness in dorsiflexion of both feet, and within 1 week he develops problems with walking. He		
has	has no loss of bladder or bowel control. His weakness progresses rapidly over the ensuing week and		
nee	cess	itates his being placed on a ventilator to support his breathing. He is quadriplegic, but retains control of	
his	his eye movements. CSF studies reveal a protein content of greater than 1 g/dL with a normal white cell count.		
Th	There are no red blood cells in the CSF. Select the condition that best fits clinical scenario.		
a		Subacute HIV encephalomyelitis (AIDS encephalopathy)	
b		SSPE	

cPMLdRabies encephalitis

e * Guillain-Barré syndrome

Over the course of 6 months, a 50-year-old immigrant from Eastern Europe develops problems with bladder control, an unsteady gait, and pain in his legs. On examination, it is determined that he has absent deep tendon reflexes in his legs, markedly impaired vibration sense in his feet, and a positive Romberg sign. Despite his complaint of unsteady gait, he has no problems with rapid alternating movement of the feet, and no tremors are evident. He has normal leg strength. The pain in his legs is sharp, stabbing, and paroxysmal. His serum glucose and glycohemoglobin levels are normal. Select the condition that best fits clinical scenario.

a		Subacute HIV encephalomyelitis (AIDS encephalopathy)	
b		SSPE	
с	*	Tabes dorsalis	
d		Neurocysticercosis	

e Bartonella henselae encephalitis

A 10-year-old girl is referred to a physician because of rapidly deteriorating school performance. Over the course of a few weeks, the child has lost interest in her schoolwork, appeared apathetic at home, and had frequent temper tantrums with little provocation. A psychiatric evaluation reveals that, in addition to emotional lability, the child has substantial intellectual deficits that appear to be new. Within 1 month of this evaluation, the child has a generalized tonic-clonic seizure. A neurologist examining the child discovers chorioretinitis, ataxia, hyperactive reflexes, and bilateral Babinski signs. Her EEG exhibits periodic bursts of high-voltage slow waves followed by recurrent low-voltage stretches (burst suppression pattern). The CSF is remarkable for an increase in the γ -globulin fraction. The child becomes increasingly lethargic and obtunded over the ensuing 2 months. She remains in a coma for several months before dying. Select the condition that best fits clinical scenario.

a		Subacute HIV encephalomyelitis (AIDS encephalopathy)	
b	*	SSPE	
с		PML	
d		Rabies encephalitis	
e		Guillain-Barré syndrome	
A 37-year-old female navy officer presents with 3 days of confusion and seizures. Her colleagues report that			

she has been acting strangely for 3 days. This is followed by generalized status epilepticus. The woman has previously been well. She has traveled to the Caribbean several times annually, and she has a new pet cat. General examination discloses epitrochlear lymphadenopathy. Neurological examination shows the woman to be in status epilepticus. CSF is negative; MRI shows increased signal in the pulvinar bilaterally. Select the condition that best fits clinical scenario.

a Rabies encephalitis

b		Guillain-Barré syndrome
С		Tabes dorsalis
d		Neurocysticercosis
e	*	Bartonella henselae encephalitis
А	29-y	rear-old immigrant from El Salvador is brought to the emergency room after a generalized seizure. After
aw	akei	ning, he relates that he has had two or three episodes of unexplained loss of consciousness in the past 2
yea	ars.	He has otherwise been healthy. He served in the Salvadoran military for 3 years. His examination is
no	rmal	L. CT scan with contrast reveals two small hyperintense foci in the right frontal lobe, as well as a 1-cm
cy	stic 1	lesion with a nodular focus within it in the left frontal region. The cyst wall of the latter lesion enhances
wi	th co	ontrast. The two right frontal lesions do not enhance. Select the condition that best fits clinical scenario.
a		Subacute HIV encephalomyelitis (AIDS encephalopathy)
b		Guillain-Barré syndrome
с		Tabes dorsalis
d	*	Neurocysticercosis
e		Bartonella henselae encephalitis
Α	65-	year-old right-handed woman began having neurological problems about 1 week ago. She began
ex	perie	encing nausea, vomiting, and numbness in the left hand and left foot. Today she had a generalized
co	nvul	sion, and since then she has had a throbbing headache that is worse when she bends forward. On
ex	amir	nation, the only deficits she has are loss of double simultaneous tactile stimulation and left lower facial
dro	oop	when smiling. MRI reveals a lesion suggestive of a primary brain tumor. Which of the following is the
mo	ost c	ommon source of primary brain tumors?
a	*	Glial cells
b		Neurons
с		Meningeal cells
d		Lymphocytes
e		Endothelial cells
A	prev	iously healthy 31-year-old man collapses in the kitchen of his home while sitting at the table talking. His
wi	fe w	itnessed a convulsion that lasted about 2 minutes. He seems to recover fully within an hour. The history
tak	ken i	n the emergency room reveals that he has been having new headaches in the early morning hours over
the	e pa	st few weeks. A brain magnetic resonance imaging (MRI) indicates that there is an enhancing right
fro	ontal	lesion that is most likely a primary brain neoplasm. Which of the following is the most common type of
pri	imar	y brain tumor?
a		Meningioma
b	*	Astrocytoma
с		Lymphosarcoma
d		Oligodendroglioma
e		Medulloblastoma
Α	7-ye	ear-old girl has been diagnosed with a brain tumor. The parents are both well educated with a scientific
ba	ckgr	ound and have many questions. During the course of the discussion, you might tell them that most brain
tur	nors	in children are which of the following?
a		Metastatic lesions from outside the central nervous system (CNS)
b		Oligodendrogliomas
с		Glioblastomas multiforme
d		Meningiomas
e	*	Infratentorial
As	s you	provide the parents of the patient (see question 173) with some information, it prompts many more
qu	estic	ons. The overall incidence of primary brain tumors in children is approximately 1-to-5 per 100,000 per
ye	ar. V	Vhich of the following account for the majority?
a		Meningiomas and neurofibromas
b	*	Astrocytomas and medulloblastomas
с		Melanomas and choriocarcinomas
d		Gliomas and adenomas
e		Colloid cysts of the third ventricle
L	1	~

A 72-year-old woman has a head computed tomography (CT) performed because of headaches. It is significant for a left hemisphere mass with an overlying hyperostosis of the skull. She most likely has which of the following?

101				
a	*	Meningioma		
b		Pituitary adenoma		
С		Astrocytoma		
d		Schwannoma		
e		Hemangioblastoma		
Up	on r	outine examination by her pediatrician, a 9-year-old girl is discovered to have precocious puberty. More		
car	eful	examination discovers the presence of papilledema. This patient is most likely to have which of the		
fol	lowi	ng?		
a	*	A pineal region tumor		
b		An oligodendroglioma		
с		A Kernohan class II astrocytoma		
d		A brainstem glioma		
e		An ependymoma		
A	15-y	ear-old boy has multiple angiomatoses of the retina and cysts of the kidney and pancreas. Which of the		
fol	lowi	ng brain tumors is most likely to develop in this child?		
a		Glioblastoma multiforme		
b		Meningioma		
с	*	Hemangioblastoma		
d		Ependymoma		
e		Pinealoma		
A	56-у	rear-old right-handed woman who had breast cancer 1 year ago began having neurological problems		
abo	out 1	week ago. She began experiencing nausea, vomiting, and numbness in the right hand and foot. Today		
she	e is	experiencing crescendo pain in the left retroorbital area. Her headache is throbbing and positional,		
par	ticu	larly when she tries to bend forward. The headache was intense in the morning, and at times it woke her		
up	last	night. On examination, the only deficits are loss of double simultaneous tactile stimulation and right		
lov	ver f	facial droop when smiling. Which of the following is the most appropriate next action?		
a		Administer intravenous prochlorperazine		
b		Give the patient a prescription for zolmitriptan		
c		Make a follow-up appointment for next month		
d		Order an electroencephalogram (EEG) to rule out seizures		
e	*	Get a brain MRI		
A (60-y	ear-old woman presents to her internist with 2 months of new headaches and some difficulty walking.		
Fu	rthei	evaluation reveals multiple brain masses. Which of the following is the most common source of meta-		
sta	tic ti	umors to the brain in patients without a known primary tumor?		
a		Breast		
b	*	Lung		
с		Kidney		
d		Skin		
e		Uterus		
Aź	29-y	ear-old woman with a history of malignant melanoma presents to her primary care doctor with a new		
typ	e of	headache. Examination is normal, and a head CT is ordered. Multiple small brain hemorrhages are		
rev	eale	d by the scan. Metastatic lesions to the brain most often appear in which of the following locations?		
a	*	At the gray–white junction		
b		In the thalamus		
с		In the posterior fossa		
d		In the caudate		
e		In the sella turcica		
Th	e sh	ortest life expectancy with metastatic disease to the brain will be found in the patient with which of the		
following metastatic cancers?				
201	*	Malignant melanoma		
4				

b		Breast cancer				
с		Lung cancer				
d		Renal cancer				
е		Prostate cancer				
A	A 30-year-old normally developed, and generally healthy man has had new intermittent headaches for 1 year					
Ov	ver th	he past several months they have been becoming more frequent and were twice accompanied by syncope.				
Th	e pa	tient has an MRI performed, and a colloid cyst of the third ventricle is identified. Which of the following				
is t	the r	nost common complication of this lesion?				
<u>a</u>		Bitemporal hemianopsia				
h	*	Hydrocenhalus				
C		Heminaresis				
d		Ontic stronby				
u A		Oscillonsia				
	<u>15 x</u>	User old right handed man who has been human immunodeficiency virus (HIV) positive for the past 3				
	4J-y ara h	the post of visual change over the past 1 to 2 months. It is difficult for him to describe but it				
yea io		as noticed some soft of visual change over the past 1 to 2 months. It is difficult for min to describe, but it				
15	som	e soft of distortion of part of his fight visual field. There is a 4-chi fini-emialchig festori in the left				
000	th of	al lobe that is revealed by WKI. Which of the following tumor types is common in the orall of patients				
wi	ui ac	Lymphosytic lowkeric				
a 1.		Lymphocytic leukenna Matastatia lymphoma				
D	*					
C 1	*	Primary lympnoma				
d		Kaposi sarcoma				
e		Lymphosarcoma				
A	37-у	rear-old man presents with visual impairment. Examination reveals a bitemporal hemianopsia. Which of				
the	e foll	lowing tumors is most likely responsible for this finding?				
a		Optic glioma				
b		Occipital astrocytoma				
с		Brainstem glioma				
d	*	Pituitary adenoma				
e		Sphenoid wing meningioma				
A	9-ye	ar-old developmentally delayed girl has precocious puberty and poorly controlled seizures. Her seizures				
are	e typ	bically preceded by episodes of uncontrollable laughter. Which of the following mass lesions might				
exp	plair	her symptoms?				
a		Craniopharyngioma				
b		Choroid plexus papilloma				
с		Giant aneurysm				
d		Metastatic carcinoma				
e	*	Hypothalamic hamartoma				
Α	35-y	year-old woman has worsening intermittent headaches and "dizzy spells" over the course of several				
mo	onths	s. Examination in between attacks is normal. An MRI reveals a mass in the posterior fossa suggestive of				
an	epei	ndymoma. This patient is potentially at risk of dying because of which of the following?				
a	*	Transforaminal herniation				
b		Emboli from the tumor				
с		Vascular occlusion by the tumor				
d		Hemorrhagic necrosis of the tumor				
e		Status epilepticus				
Α	30-1	vear-old man with AIDS develops headaches and left hemiparesis and is found to have a right frontal				
white matter homogeneously enhancing lesion. Match clinical scenario with the appropriate type of tumor						
a		Vestibular schwannoma				
h		Choriocarcinoma				
C		Metastatic carcinoma				
d	$\left \right $	Pineocytoma				
u e	*	Primary CNS lymphoma				
e	·	r mnary Cryb Tympholna				

A 4-year-old boy presents with ataxia, lethargy, and obstructive hydrocephalus. Match clinical scenario with the appropriate type of tumor. Medulloblastoma a Oligodendroglioma b Optic glioma с d Carcinomatous meningitis Vestibular schwannoma e A 16-year-old boy with café au lait spots and cutaneous nodules has a gradual decrease of vision in his left eye. Match clinical scenario with the appropriate type of tumor. Medulloblastoma a Oligodendroglioma b с * Optic glioma Carcinomatous meningitis d Vestibular schwannoma e A 55-year-old woman presents with mild unsteadiness, tinnitus, and hearing loss. Match clinical scenario with the appropriate type of tumor. Medulloblastoma a Oligodendroglioma b Optic glioma с Carcinomatous meningitis d e * Vestibular schwannoma A 13-year-old girl has headaches and diplopia. On examination, she has impaired upward gaze, lid retraction, and convergence-retraction nystagmus. Her pupils react on convergence but not to light. Match clinical scenario with the appropriate type of tumor. Medulloblastoma a b Vestibular schwannoma с Choriocarcinoma d Metastatic carcinoma * Pineocytoma e A 67-year-old woman has a 2-month history of progressive gait disturbance. On examination, she has dysmetria of the limbs; a wide-based, unsteady gait; and hypermetric saccades. A hard, firm breast lump is discovered. Match each clinical scenario with the most likely causative disorder. Paraneoplastic cerebellar degeneration a Limbic encephalitis b с Dorsal root ganglionopathy d Hypercalcemia Cancer-associated retinopathy e A 70-year-old man with a history of lung cancer develops nausea and vomiting and then becomes lethargic. On examination, he is lethargic but arousable, disoriented, and inattentive. He is weak proximally and has diminished reflexes. Match each clinical scenario with the most likely causative disorder. Paraneoplastic cerebellar degeneration a b Limbic encephalitis Dorsal root ganglionopathy с d * Hypercalcemia Cancer-associated retinopathy e A 57-year-old woman with a history of smoking has a 3-month history of hip and shoulder weakness. She also complains of xerostomia. There are no sensory symptoms, and she is cognitively intact. On examination, she is orthostatic. There is proximal muscle weakness, but she has increasing muscle strength with repetitive activity of her muscles. Eye movements are normal. Match each clinical scenario with the most likely causative disorder. Paraneoplastic cerebellar degeneration a Limbic encephalitis b

c Opsoclonus-myoclonus
d		Stiff man syndrome			
e	*	Lambert-Eaton myasthenic syndrome			
Α	A 65-year-old woman develops pain and paresthesias in her feet. On examination, she has loss of reflexes.				
sto	ckin	g distribution sensory loss, and mild distal weakness. Serum protein electrophoresis reveals a			
mo	monoclonal gammopathy, and hone marrow biopsy reveals plasma cell dyscrasia. Match each clinical scenario				
wit	th th	e most likely causative disorder.			
а		Paraneoplastic cerebellar degeneration			
b		Limbic encephalitis			
c		Guillain-Barré syndrome			
d	*	Paraproteinemic neuropathy			
e		Opsoclonus-myoclonus			
In '	Tav	-Sachs disease, the enzymatic abnormality responsible for the neurological deficits is deficiency of which			
of	the f	Following?			
а а	*	Hexosaminidase A			
h		Glucocerebrosidase			
C		Phosphofructokinase			
d		Glucose phosphorylase			
u e		Sphingomyelinase			
Δn	8_n	ponth-old boy develops spasticity head retraction and difficulty swallowing. His physician discovers an			
aht	10-11	hold by develops spasiely, lead refraction, and difficulty swallowing. This physician discovers and			
lik	elva	lie within 3 years. This child has which of the following?			
2	*	B-glucosidase deficiency			
h h		Niemann-Pick disease			
C		Krabbe disease			
d		Fabry disease			
u e		Tav-Sachs disease			
Δ	53_1	vear-old left-handed man presents with asterixis esophageal varices splenomegaly and abdominal			
280	ojj-: rites	He is likely to exhibit altered consciousness on the basis of which of the following?			
ase		Renal tubular acidosis			
h	*	Impaired hepatic detoxification of portal blood			
c		Splenomegaly-induced anemia			
d		Copper intoxication			
e		Vitamin B ₁₂ deficiency			
A	patio	ent has had progressive, chronic liver failure for the past 5 years. At the time of death, he would be			
ext	pecte	ed to exhibit changes in which type of brain cells?			
a		Oligodendrocytes			
b		Striatal neurons			
c		Pigmented cells of the substantia nigra			
d	*	Astrocytes			
e		Inferior olivary neurons			
A 4	42-v	ear-old man presents to the emergency room with seizures, mental status change, and vision difficulties.			
Α	mag	netic resonance imaging (MRI) reveals an abnormally high T2 signal in the posterior cerebral white			
ma	tter.	There is proteinuria, and blood pressure is 210/120 mm Hg. The cerebrospinal fluid (CSF) protein			
content of this patient is likely to be which of the following?					
а		Abnormally low			
b		Normal			
с	*	Elevated, but less than 100 mg/dL			
d	Elevated to between 500 and 1000 mg/dL				
e	e Greater than 2000 mg/dL				
A 65-year-old man has had many years of deteriorating kidney function caused by diabetes. At age 59, dialysis					
wa	s be	gun because of electrolyte abnormalities. Which of the following is the most common neurological			
con	npli	cation of chronic renal failure?			
a	*	Peripheral neuropathy			

b		Delirium				
с	Seizures					
d		Dementia				
e	e Labile affect					
А	70-y	year-old woman with end-stage renal disease tends to develop restless legs syndrome as she becomes				
ure	emic	. This may be controlled with which of the following drugs?				
а		Haloperidol				
b	*	L-Dopa				
с		Caffeine				
d		Nifedipine				
e		Rifampin				
Α	56-1	year-old woman has been on dialysis for the past 10 years owing to chronic renal failure from cystic				
kic	lnev	disease. Which of the following is the most reliable treatment for the peripheral neuropathy associated				
wi	th he	er condition?				
a		Thiamine supplements				
b		Clonazepam				
с		Phenytoin				
d		Minoxidil				
e	*	Renal transplant				
A	68-	vear-old man presents with acroparesthesia, sensory ataxia, memory loss, and impotence. On				
ex	amir	nation, there are upper motor neuron signs in all four extremities. He also has anemia and a sore tongue.				
Ev	entu	ally, a nutrient deficiency is diagnosed. This nutrient, critical for normal neurological function, must be				
ab	sorb	ed by binding to which of the following?				
a		A cyanide atom and form cyanocobalamin				
b	*	An intrinsic factor				
с		The parietal cells of the stomach				
d		The ileal mucosa				
e		The jejunal mucosa				
Α	patie	ent has a borderline low vitamin B_{12} level. Testing for what compound is a more sensitive test for B_{12}				
de	ficie	ncy?				
a		Cysteine				
b	*	Methylmalonic acid				
с		Methionine				
d		Succinic acid				
e		Propionic acid				
Th	e pa	atient with impaired vitamin B_{12} absorption is likely to develop a positive Romberg test because of				
da	mag	e to which of the following?				
a		Cerebellar vermis				
b		Cerebellar hemispheres				
с		Spinal cord lateral columns				
d		Basal ganglia				
e	*	Spinal cord posterior columns				
W	hich	of the following types of visual field cuts is most often seen with vitamin B_{12} deficiency?				
а	*	Centrocecal scotoma				
b		Homonymous hemianopsia				
с		Bitemporal hemianopsia				
d		Binasal hemianopsia				
e Hemianopsia with central sparing		Hemianopsia with central sparing				
A 42-year-old woman is being treated with methotrexate for Wegener granulomatosis. Methotrexate may be						
ass	socia	tted with the syndrome of reversible posterior leukencephalopathy. She is also at risk for megaloblastic				
an	emia	a because methotrexate disturbs the metabolism of which of the following?				
a		Cobalamin				
L	1					

b Iron					
c Copper					
d Pvridoxine					
e * Folate					
A 37-year-old woman develops cholecystitis and requires cholecystectomy. Her family advises the physician					
involved that she has a long history of alcoholism and benzodiazepine use, including diazepam, lorazepam, and					
clonazepam. Approximately 7 days after the surgery, the patient becomes increasingly agitated, delusional, and					
suspicious. Routine investigations reveal no evidence of focal or systemic infection. Hepatic, renal, and					
hematologic parameters are largely normal. Within 24 hours of these cognitive and affective changes, the					
patient has a generalized tonic-clonic seizure. MRI and computed tomography (CT) studies of the brain are					
normal, and her CSF is unremarkable. In consideration of the abuse history provided by the family, medication					
orders prior to the surgery should have included which of the following?					
a Haloperidol					
b Chlorpromazine					
c Trihexyphenidyl					
d Prochlorperazine					
e * Thiamine					
A 55-year-old right-handed man is admitted to the medical service for pneumonia. The patient normally drinks					
4-to-8 beers per day. In anticipation of the seizures, cognitive deterioration, and autonomic instability that					
might occur during withdrawal, which of the following is the most appropriate measure to take?					
a Consult a "detox center" to start planning the patient's discharge					
b Provide intravenous alcohol supplements to blunt the alcohol withdrawal					
c * Provide intramuscular or oral chlordiazepoxide several times daily at a dose dictated by the patient's					
level of agitation					
d Start phenytoin as a single dose nightly					
e Delay pneumonia treatment until the risk of neurological problems abates					
A 26-year-old man develops hemoptysis and dyspnea over the course of 3 months. His physician suspects					
tuberculosis and starts him on triple therapy with isoniazid (isonicotinic acid hydrazide), rifampin, and					
ethambutol. After 1 month of treatment, the patient's liver enzymes show slight elevations, but the treatment is					
continued. The hemoptysis stops by 2 months, but the patient complains of pins-and-needles sensations in his					
feet. Neurological examination reveals hypoactive deep tendon reflexes in the legs and slightly impaired					
position sense. Strength is good in all limbs. For clinical scenario, select the nutritional deficiency that is mos					
nkely responsible.					
a Denciency anoryopia					
0 Vitaliiii D ₁₂ deficiency a * b Duridoving (vitamin R)) deficiency					
d a Topopherol (vitamin E) deficiency					
u u-Tocopheror (vitamin E) deficiency					
A 50 year old woman is found wandering in the street and is brought to the emergency room by the police. She					
is disoriented to time place and person, but has no evidence of head trauma. She staggers when she tries to					
walk but she has no detectable alcohol in her blood. Eve movements are abnormal with paresis of conjugate					
gaze and horizontal nystagmus is apparent. Relatives are contacted and they report that this woman has a long					
history of alcohol abuse. For clinical scenario, select the nutritional deficiency that is most likely responsible.					
a Deficiency amblyopia					
b Vitamin B ₁₂ deficiency					
c * Thiamine (vitamin B ₁) deficiency					
d Nicotinic acid deficiency					
e Kwashiorkor					
A 46-year-old man complains of progressive visual problems. He notices problems with discriminating objects					
both up close and far away. His deficits have progressed over the course of 3 months. He has a 12-year history					
of pipe smoking, a 14-year history of daily aspirin use, and a 20-year history of alcohol intake. He usually					
drinks 4 oz of gin daily. Examination reveals enlargement of the physiologic blind spot to the point where i					
extends into central vision. For clinical scenario, select the nutritional deficiency that is most likely responsible.					

9	*	Deficiency amplyonia			
a b	Vitamin B ₁₀ deficiency				
C		Pyridovine (vitamin B.) deficiency			
c Pyridoxine (vitamin B ₆) deficiency					
d 0-10copherol (vitamin E) deficiency					
	22,	Vitanin D deficiency			
A	$\frac{52}{10}$	depressed but neurological assessment establishes prominent short, and long term memory problems			
She	= 18 0 hc	depressed, but neurological assessment establishes prominent short- and long-term memory problems.			
SI		is anothing and an obvious definition of her face. Her diet is sufficiency vegetation and infinited annost entitienty			
10	grai	is, such as com. For chinical scenario, select the nutritional deficiency that is most fikely responsible.			
a 1		d-Tocopherol (vitamin E) deficiency			
D					
c		Thiamine (vitamin B ₁) deficiency			
d	*	Nicotinic acid deficiency			
e		Kwashiorkor			
A	61- <u>y</u>	year-old man develops progressive cramping of his legs and a pins-and-needles sensation in his feet over			
the	co	urse of 1 year. He consults a physician when he notices paresthesias in his hands and unsteadiness of his			
gai	t. H	His family reports that he has had some urinary incontinence, but was too embarrassed to report it. On			
exa	ami	nation, he has a spastic paraparesis with severe disturbance of position and vibration sense in his legs.			
De	spit	te obvious spasticity in the legs, the deep tendon reflexes are absent at the knees and ankles. Peripheral			
blo	ood	smear reveals hypersegmented polymorphonuclear leukocytes. For clinical scenario, select the nutritional			
def	ficie	ency that is most likely responsible.			
a		Deficiency amblyopia			
b	*	Vitamin B ₁₂ deficiency			
с		Pyridoxine (vitamin B ₆) deficiency			
d		α-Tocopherol (vitamin E) deficiency			
e		Vitamin D deficiency			
A	4-ye	ear-old boy develops progressive gait ataxia and limb weakness over the course of 3 months. Neurological			
ass	sessi	ment reveals diffusely absent deep tendon reflexes, proximal muscle weakness, ophthalmoparesis, and			
po	or p	ain perception in the feet. Blood tests reveal elevated creatine phosphokinase levels and abnormally high			
ser	um	bilirubin levels. Further investigations of hepatic function reveal that the child has a cholestatic			
hep	pato	biliary disorder, but there is no evidence of hepatic dysfunction sufficient to cause an encephalopathy.			
Fo	r cli	inical scenario, select the nutritional deficiency that is most likely responsible.			
a		Deficiency amblyopia			
b		Vitamin B ₁₂ deficiency			
с		Pyridoxine (vitamin B ₆) deficiency			
d	*	α-Tocopherol (vitamin E) deficiency			
e		Vitamin D deficiency			
A	9-r	nonth-old girl from famine-stricken Ethiopia exhibits profound apathy and indifference to her			
en	viro	nment. She is afebrile and appears to have no significant infections at the time of her initial evaluation.			
He	r ha	air is sparse, and slight edema is evident about her ankles. She is well below the fifth percentile for height			
in	in her age group. With handling she becomes irritable, but throughout her examination she exhibits little				
spo	spontaneous movement. Her mother reports having seen transient tremors in the girl's hands a few weeks				
ear	earlier, but these abated after a few days. For clinical scenario, select the nutritional deficiency that is most				
lik	likely responsible.				
а	a Deficiency amblyopia				
b		Vitamin B ₁₂ deficiency			
c		Thiamine (vitamin B_1) deficiency			
d		Nicotinic acid deficiency			
ρ	*	Kwashiorkor			
<u>ر</u>	A 23-year-old woman with a history of hemophilia notices progressive memory difficulty. She has required				
A 1;++	little hematologic support but she did receive transfusion of factor VIII at least five times over the past 7 years				
No.		logical examination reveals word finding difficulty near recent and remote memory sait stavia mild			
and and a	dyearthria and alabila affact. Her right planter response is extensor, and her left brachieradialis reflex is				
uy	dysarthria, and alabile affect. Her right plantar response is extensor, and her left brachioradialis reflex is				

hyp	pera	ctive with transient clonus. An MRI of the brain is unrevealing. For clinical scenario, select the most
like	ely o	diagnosis.
a		Postictal state
b		Hypothyroidism
c		Uremic encephalopathy
d	*	AIDS encephalopathy
e		Pickwickian syndrome
A 3 wit and tim	35-y h th l du ie of	rear-old businessman has sleep attacks. He runs a chain of dry-cleaning stores, but does not usually work the cleaning fluids. He reports falling asleep several times during the workday, even at business meetings ring interviews. He has developed the sleep attacks only after gaining more than 100 lb. His weight at the f the examination is 324 lb. For clinical scenario, select the most likely diagnosis.
a		Subacute combined systems disease
b		Meningococcal meningitis
c		Subacute sclerosing panencephalitis
d		AIDS encephalopathy
e	*	Pickwickian syndrome
litt pro bec mo exa 210 wa ten	le p omp com ven umin) m ve o npon	rovocation and abuses his wife both verbally and physically. His behavior is sufficiently atypical for it to t his relatives to seek psychiatric assistance for him. While being interviewed by a psychiatrist, he es unresponsive and develops generalized convulsions with opisthotonic posturing, tonic-clonic limb nents, and urinary incontinence. He is hospitalized for investigation of his seizure disorder. On initial nation, he is noted to have a low-grade fever and a mild left hemiparesis. His CSF opening pressure is m H ₂ O. His CSF cultures yield no growth, and his electroencephalogram (EEG) reveals polyspike-and- discharges originating in the right temporal lobe. A CT of his brain reveals focal swelling of the right ral lobe. For clinical scenario, select the most likely diagnosis.
a		Postictal state
b		Hypothyroidism
с		Uremic encephalopathy
d		Wernicke encephalopathy
e	*	Herpes encephalitis
A properties of the during during dynamics of the during dynamics of the dynam	orev eye ring ysic sme ma	iously healthy 25-year-old woman develops acute loss of vision in her left eye. She awakens with pain in e and reduction of her acuity to perception of light and dark. She delays seeing a physician for 1 week, which time her acuity gradually improves sufficiently to allow her to read. On examination, the ian discovers she has slurred speech and poor rapid alternating movements with the left hand. Ocular tria is evident in both eyes. Her tandem gait is grossly impaired. The physician obtains an EEG, which is l. For clinical scenario, select the most likely diagnosis.
a 1		Posticial state
D		Meningeal carcinomatosis CNIS terrer legregation
C	*	
d	*	Multiple scierosis
e	17	Hepatic encephalopathy
A anc the dis phy	I /-y I rea ne orie ysic	year-old man has headache and photophobia on awakening. His physician discovers a low-grade fever sistance to neck flexion. The physician advises the patient to take acetaminophen and remain in bed for xt 24 hours. Within 12 hours, the patient develops nausea and more intense headache. He seems intend and inappropriately lethargic. His family brings him to an emergency room. The emergency room ian notes a petechial rash on the legs and marked neck stiffness. CSF examination reveals a glucose to of 5 mg/dL emotion content of 87 mg/dL and coll content of 112 hours with 7000
cor	iten	t of 5 ing/dL, protein content of 8/ mg/dL, and cell count of 112 leukocytes, with /0%

pol	polymorphonuclear cells. For clinical scenario, select the most likely diagnosis.		
a		Postictal state	
b		Hypothyroidism	
c		Uremic encephalopathy	
d		Wernicke encephalopathy	
e	*	Meningococcal meningitis	

A 56-year-old man is struck over the parietal area of the head during a robbery. He loses consciousness for 35 minutes but has no focal weakness or numbness on regaining consciousness. Within 2 days of the incident, his wife finds him unresponsive in bed early in the morning. She calls for an ambulance, but before it arrives her husband becomes more alert and asks for something to eat, saying he wants to have some supper before he goes to bed for the night. The ambulance attendant first on the scene notes that the patient is disoriented to place and time and has weakness of his right arm and leg. For clinical scenario, select the most likely diagnosis.

un	time and has weakness of ms right arm and leg. For clinical scenario, select the most likely diagnosis.					
a	a * Postictal state					
b		Hypothyroidism				
С	c Uremic encephalopathy					
d	d Wernicke encephalopathy					
e		Herpes encephalitis				
A 35-year-old woman is found unconscious on the floor of her apartment. A bottle of cleaning fluid is found on a table near her. One of the contents indicated in the fluid is carbon tetrachloride. The ambulance crew notes that the patient is breathing independently, but her breath has a distinctly fetid odor unlike that associated with the cleaning fluid. Her limbs are flaccid, and she groans when she is moved. She does not respond to inquiries and is poorly responsive to pain. A serum ammonia level obtained at the emergency room is 250 mg/dL, triple.						
the sce	e no enari	rmal level. EEG reveals triphasic waves, most prominently over the front of the head. For clinical in select the most likely diagnosis				
a		Postictal state				
h		Hypothyroidism				
C		Multiple sclerosis				
d	*	Henatic encenhalonathy				
e		Subacute combined systems disease				
A	75-	vear-old woman with suspected normal-pressure hydrocephalus undergoes lumbar puncture Forty				
mi	llilit	ers of fluid are removed. Three hours later, she is able to walk unassisted and turns well. Spinal fluid				
we	mld	be expected to show which of the following?				
a	*	No abnormalities				
h		Elevated protein				
c		Low protein				
d		Atypical lymphocytes				
e		Low glucose				
A	nhvs	sician believes that her patient has Alzheimer disease. Which of the following is most characteristic of the				
bra	ain i	n patients with Alzheimer disease?				
a	*	Neuronal loss in the cerebral cortex				
b		Demvelination in the cerebral cortex				
c		Posterior column degeneration				
d		Neuronal loss in the cerebellar cortex				
u e		Pigmentary degeneration in the hippocampus				
Δr	80	vegr. old man has had a gradual memory decline over the past 10 years. A reversible cause of dementia				
	not	be found and positron emission tomography scan supports the diagnosis of Alzheimer disease. In the				
de	men	tia associated with Alzheimer disease the electroencenhalography (FFG) will usually show which of the				
fol	low	ing?				
a		Spike-and-wave discharges				
h		Periodic frontal lobe discharges				
c		Focal slowing				
d	*	Generalized background slowing				
e		An isoelectric record				
A 55-year-old man has a steen decline in his cognitive abilities over a 3-month period Initial testing is						
nondiagnostic. He continues to progress and develops myoclonus and a left heminaresis. Eventually, he dies of						
an	asp	iration about 8 months after the onset of symptoms. In the diseases that cause dementia, myoclonus is				
usi	ally	most evident in which of the following?				
a Alzheimer disease						
b	*	Creutzfeldt-Jakob disease				

с		Parkinson disease			
d		Huntington disease			
e	Pick disease				
A me	A 29-year-old mentally retarded woman living in an institution has had a subacute to chronic decline in memory. Testing for reversible causes of dementia is nondiagnostic. The brain of the adult with trisomy 21				
(D	own	syndrome) exhibits many of the histopathologic features of which of the following?			
a		Tay-Sachs disease			
b		Friedreich disease			
с		Pick disease			
d		Parkinson disease			
e	*	Alzheimer disease			
A	n 80	-year-old man has a history of 2 years of progressive gait disturbance and incontinence, which had been			
att	ribu	ted to old age and prostatism. Within the past 3 months, he has been forgetful, confused, and withdrawn.			
His	s ga	it is short-stepped, and he turns very slowly, almost toppling over. He has a 30-year history of head			
tra	uma	. His computed tomography (CT) scan is shown below. Which of the following is the most likely			
dia	igno	sis?			
а		Alzheimer disease			
b		Creutzfeldt-Jakob disease			
с		Progressive multifocal leukoencephalopathy			
d	*	Normal-pressure hydrocephalus			
e		Chiari malformation			
An	82	-year-old man has 6 months of worsening memory loss. His family is concerned, and he is taken to a			
ph	ysici	ian. After an extensive evaluation and neuropsychological testing, he is diagnosed with dementia. Which			
of	the f	following is the most common cause of dementia in the general population?			
а		Epilepsy			
b		Vascular disease			
c	*	Alzheimer disease			
d		Parkinson disease			
e		Head trauma			
A	patie	ent undergoes ventriculoperitoneal shunt placement for hydrocephalus. He is discharged 2 days later, his			
gai	it an	d cognition much improved. The following morning, his wife finds him lying in bed, very confused and			
coi	mpla	aining of a headache. He is unable to walk. The surgeon who performed the procedure is concerned that			
the	ese n	ew symptoms are owing to which of the following?			
a		Chemical meningitis			
b	*	Subdural hematoma			
с		Epidural hematoma			
d		Seizures			
e		Bacterial ventriculitis			
A	67-y	vear-old man has a history of progressive memory loss for 2 years. His examination is otherwise normal.			
Α	diag	nosis of Alzheimer disease is made. Which of the following medications may result in some cognitive			
im	prov	vement?			
a	*	Donepezil			
b		L-Dopa			
с		Risperidone			
d		Prednisone			
e		Vitamin B ₁₂			
La	Language testing is most likely to uncover which of the following deficits in a patient with Alzheimer disease?				
a	a No abnormalities				
b	b Mutism				
c		Conduction aphasia			
d	*	Transcortical sensory aphasia			
e		Transcortical global aphasia			
A	73-y	rear-old man steps out of the shower on a Saturday evening and is unable to remember that he and his			

wife have tickets to a play. He asks her repeatedly, "Where are we going?" He appears bewildered, but is alert, knows his own name, speaks fluently, and has no motor deficits. He has no history of memory disturbance and after 8 hours returns to normal. For clinical scenario, choose the most likely diagnosis.

a	*	Transient global amnesia (TGA)
b		Normal-pressure hydrocephalus
c		Alzheimer disease
d		Parkinson disease
e		Creutzfeldt-Jakob disease

A 50-year-old woman began having double vision and blurry vision 3 months ago and has since had diminishing interaction with her family, a paucity of thought and expression, and unsteadiness of gait. Her whole body appears to jump in the presence of a loud noise. A magnetic resonance imaging (MRI) scan and routine cerebrospinal fluid (CSF) examination are unremarkable. For clinical scenario, choose the most likely diagnosis.

a	Transient global amnesia (TGA)
b	Normal-pressure hydrocephalus
с	Alzheimer disease
d	Parkinson disease

e * Creutzfeldt-Jakob disease

A 2-year-old girl developed normally until the past year. She has since become unable to speak or otherwise communicate with her parents, sits in a chair, and makes nearly continuous wringing movements with her hands. She also has episodes of breath holding alternating with hyperventilation. For clinical scenario, choose the most likely diagnosis.

a		Transient global amnesia (TGA)		
b		Normal-pressure hydrocephalus		
с		Alzheimer disease		
d	*	Rett syndrome		
e		Multi-infarct dementia		
A 1	l7-y	rear-old girl develops mild dementia, tremor, and rigidity. Her father died in his fourth decade of life of a		
pro	gre	ssive dementing illness associated with jerking (choreiform) limb movements. On exposure to L-dopa,		
she	be	comes acutely agitated and has jerking limb movements. For clinical scenario, choose the most likely		
dia	gno	sis.		
a		Transient global amnesia (TGA)		
b		Hypothyroidism		
c	*	Huntington disease		
d		Rett syndrome		
e		Multi-infarct dementia		
Α	A 62-year-old man has had 2 years of progressive memory loss and inappropriate behavior. He has been			
del	delusional. More recently, he has developed tremors, myoclonus, dysarthria, and unsteadiness of gait. The CSF			
shc	shows a lymphocytic pleocytosis, protein of 150, and positive VDRL. For clinical scenario, choose the most			
like	likely diagnosis.			

а	Transient global amnesia (TGA)				
b	Normal-pressure hydrocephalus				
с		Multi-infarct dementia			
d	*	* General paresis			
e		Temporal lobe epilepsy			
A 44-year-old woman from Africa presents with inattentiveness, poor concentration, and lethargy. She has					
par	paranoid delusions. There is mild proximal weakness and ataxia. On general examination, she has edema,				
coa	coarse and pale skin, and macroglossia. On reflex examination, she has delayed relaxation of the ankle reflexes.				
Fo	For clinical scenario, choose the most likely diagnosis.				
a		Transient global amnesia (TGA)			
b		Normal-pressure hydrocephalus			
	ŕ				

c * Hypothyroidism

e		Rett syndrome		
Α	54-י	year-old woman presents with 6 months of progressive memory loss. She has limited vertical eye		
mo	movements, and on examination, she has rhythmic, synchronous grimacing and eve closure movements			
(00	ulo	masticatory myorhythmia). Jejunal biopsy reveals periodic acid–Schiff (PAS)–positive cells. For patient.		
sel	ect t	the likely organism that caused the disease.		
a		HTLV-I		
h	*	Tropheryma whippeli		
C		Treponema pallidum		
d				
u		Drien protein		
e •	25 -	Filon ploteni waa ald introver and drug shugar presents with inshility to control his left hand. He reports that at times		
A	ээ-у :11	by the shirt with his right hand, only to find that his left hand is unby the reports that at times		
ne	WIII Mara 1	I button his shift with his right hand, only to find that his feft hand is unbuttoning the shift against his		
		i. He has a mistory of thrush. He is aleft and oriented. MKI shows an increased 12 signal affecting the tical white motion of the right periods lobe without enhancement. For periods the likely enconism		
suc	bcor	tical while matter of the right partetal lobe without enhancement. For patient, select the likely organism		
tha	l ca			
a 1				
b		I ropneryma wnippeli		
С		Treponema pallidum		
d	*	JC virus		
e		Prion protein		
A	prev	riously healthy 24-year-old man presents with 3 days of headaches and fever, followed by hallucinations,		
spe	ech	disturbance, and lethargy. He has a mild right hemiparesis. Spinal fluid is bloody, and MRI shows		
abı	norn	nal signal, with enhancement, in the left anterior temporal lobe. For patient, select the likely organism		
tha	t ca	used the disease.		
а		HTLV-I		
b		Tropheryma whippeli		
c		Treponema pallidum		
d		JC virus		
e	*	Herpes simplex virus		
A	78-y	year-old retired electrical engineer has had a progressive cognitive decline over the past 10-to-15 years.		
His	s wi	fe reports that every 6-to-8 months she will notice another significant decrease in his functioning. It is		
no	w at	the point where he is belligerent and has little short-term memory. There is a history of hypertension and		
car	diac	c stenting after a myocardial infarction at age Examination findings include poor attention and memory,		
mi	ld le	eft hemiparesis (face, arm, and leg), and brisk reflexes throughout with upgoing toes. Which of the		
fol	low	ing is most likely to prevent further deterioration in this patient?		
а		Deep brain stimulation of subthalamic nucleus		
b	*	Control of hypertension		
с		Ventriculoperitoneal shunt		
d		Carbidopa/levodopa		
e		Psychotherapy		
A	19-v	year-old, left-handed woman has had several weeks of nausea, vomiting, and 8 lb of weight gain. She has		
als	n	biced the recent onset of an involuntary movement disorder that involves relatively rapid and fluid but		
not	rhv	the interference of the interference of the following is the most likely diagnosis?		
2	*	Chorea gravidarum		
h h		Huntington chorea		
C	$\left \right $	Alzheimer disease		
<u>d</u>		Multiple sclerosis		
u	$\left \right $	Amyotrophic lateral sclerosis		
С TL		Annyonophic lateral selectors		
The influenza epidemic of 1918 to 1926 was associated with von Economo encephalitis and left many persons				
W1	in a	Syndrome maisunguisnable from which of the following?		
a 1		Sydemain chorea		
D		Aizneimer alsease		
C		Multiple scierosis		

d Amyotrophic lateral sclerosis

e * Parkinson disease

A 43-year-old man has a father who died from Huntington disease. The son was tested and found to have the gene for Huntington disease. Which of the following is true regarding the offspring of those with Huntington disease?

a Half the offspring are at risk only if the affected parent is male

b Half the offspring are at risk only if the affected parent is female

c Half the offspring are at risk if either parent is symptomatic for the disease before the age of 30

d * Half the offspring are at risk for the disease

e One of four children is at risk for the disease

A 42-year-old woman has a strong family history of neurological disease, dementia, and early death. Her father died at age 55 and she has been told that she has the defective gene, making her own fate inevitable should she live long enough. Within the past year, her personality has subtly changed toward increased irritability and she has begun to develop nonpurposeful slow, rhythmic movements of her hands and face. A magnetic resonance imaging (MRI) indicates atrophy in the head of the caudate nucleus. This MRI finding would be expected to affect the shape of which of the following?

		1 0	
a		Cerebellum	
b	*	Lateral ventricle	
			_

cThird ventricledLenticular nuclei

e Temporal lobe

A 40-year-old man had undergone genetic testing several years ago for an autosomal dominant condition, which had afflicted members of his maternal family for several generations. The testing revealed he has the defective gene, and he now believes he is showing signs of the disease, including nonpurposeful movement of the extremities that are socially awkward and make daily activities more difficult. If this patient were to be exposed to L-dopa, which of the following would most likely be evoked?

a	Generalized seizures
b	Partial seizures
c	Intention tremor
d	Scanning speech

e * Writhing and jerking movements of the limbs

A 26-year-old heroin addict has been using a street version of artificial heroin. The drug actually contains 1methyl-4-phenyl-1,2,3, 6-tetrahydropyridine (MPTP). The neurological syndrome for which he is at risk is clinically indistinguishable from which of the following?

a		Huntington disease
b		Friedreich disease
с		Sydenham chorea
d	*	Parkinson disease
e		Amyotrophic lateral sclerosis

A 61-year-old, right-handed man presents with involuntary twitches of his left hand. He first noticed between 6 months and 1 year ago that when he is at rest, his left hand shakes. He can stop the shaking by looking at his hand and concentrating. The shaking does not impair his activities in any way. He has no trouble holding a glass of water. There is no tremor in his right hand, and his lower extremities are not affected. He has had no trouble walking, and there have been no falls. There have been no behavioral or language changes. On examination, a tremor of the left hand is evident when the man is distracted. His handwriting is mildly tremulous. He has bilateral cogwheel rigidity with contralateral activation, which is worse on the left. His rapid alternating movements are bradykinetic on the left. Which of the following neurological structures is most likely dysfunctional?

		V
a		Cerebral cortex
b		Peripheral nerves
c		Cerebral white matter
d	*	Brainstem nuclei
e		Cerebellum

A 67-year-old woman first began having a tremor 12 years ago. Within the subsequent 2 years, she clearly had developed what appeared to be Parkinson disease. The condition has now progressed to the point where, despite aggressive medical therapy, she cannot carry out her basic daily activities. High-frequency stimulation of which of the following brain structures is most likely to improve her symptoms?

of	the t	tollowing brain structures is most likely to improve her symptoms?	
a		Globus pallidus, medulla, parietal lobe	
b	*	Globus pallidus, subthalamic nucleus, thalamus	
с		Hippocampus, medulla, thalamus	
d		Medulla, occipital lobe, subthalamic nucleus	
е		Parietal lobe, temporal lobe, thalamus	
А	78-1	vear-old woman is referred to a neurologist for evaluation of a tremor. She says that it is not very	
bot	thers	some to her, but others have noticed it. It primarily involves the right hand and apparently has been	
slo	wlv	worsening over the past 12-to-18 months. Examination reveals a resting tremor of the right upper	
ext	rem	ity accompanied by mild rigidity and slowness of rapid alternating movements. Which of the following	
me	dica	itions is the best choice to treat the symptoms of this disease?	
a		Altenlase	
h	*	Carbidona-levodona	
c		Glatiramer	
с д		Interferen ß 1A	
u		Serteoline	
e Th		Seruallie the above of Darking and discours is the ask to implement on the function of the ask startic gives including	
10	e pa	unophysiology of Parkinson disease is thought to involve dysfunction of the substantia higra, including	
IOS	S OI	neurons. Postmortem study of the substantia nigra of a patient with Parkinson disease is likely to exhibit	
wn	icn (of the following?	
a 1		Intranuclear inclusion bodies	
b		Intranuclear and intracytoplasmic inclusion bodies	
С	*	Intracytoplasmic inclusion bodies	
d		Neurofibrillary tangles	
e		Amyloid plaques	
A	48-y	vear-old female psychiatric patient has parkinsonism secondary to long-term neuroleptic use. Which of	
the	foll	lowing medications might minimize her parkinsonism?	
a	*	Trihexyphenidyl	
b		Haloperidol	
c		Methamphetamine	
d		Thioridazine	
e		L-Dopa	
Α	70-y	year-old woman has 1 year of worsening gait, right-hand tremor, and rigidity. She is diagnosed with	
Par	rkins	son disease and improves dramatically with treatment. If her disease progresses, the decrement in speech	
tha	t wo	ould be expected would result in which of the following?	
a	*	Progressively inaudible speech	
b		Fluent aphasia	
с		Nonfluent aphasia	
d		Word salad	
e		Neologisms	
Ev	en t	hough the physiologic deficiency in Parkinson disease is of dopamine. L-dopa rather than dopamine is	
giv	en t	o patients for which of the following reasons?	
a		L-Dopa induces less nausea and vomiting than dopamine	
b		Dopamine is readily metabolized in the gastrointestinal tract to ineffective compounds	
c		L-Dopa is more readily absorbed in the gastrointestinal tract than is dopamine	
d	*	Dopamine cannot cross the blood-brain barrier and therefore has no therapeutic effect in the central	
u		nervous system (CNS)	
P	╞╴┤	L-Dona is more effective at donamine recentors than is donamine itself	
Δ	25 -	Le poperts more encentre at dopannine receptors than is dopannine itself	
n in	involuntary obscene vocalizations. He may have largely normal behavior while being treated with which of the		
fol	low	ino?	
101	10 44 1	······································	

a		L-Dopa
b		Trihexyphenidyl
с		Phenytoin
d		Carbamazepine
e	*	Haloperidol
A	72-у	rear-old man presented 2 years ago with asymmetric rigidity, bradykinesia, and tremor. Since that time,
dis	ease	e progression appears to have been minimal. He is being treated with carbidopa and L-dopa. The role of
cai	bide	opa in this case is which of the following?
a		It has anticholinergic activity
b		It has dopaminergic activity
С		It is an antihistaminic
d		It is an antiemetic
e	*	It is a dopa decarboxylase inhibitor
Af	ter s	several years of successful antiparkinsonian treatment, a patient abruptly develops acute episodes of
pro	ofou	nd bradykinesia and rigidity. Remission of these signs occurs as abruptly as the onset. Which of the
fol	low	ing is the most likely etiology?
a		Acute dystonia
b		Absence attacks
с	*	On-off phenomenon
d		Complex partial seizures
e		Drug toxicity
Α	53-у	rear-old woman is unable to stop blinking forcefully and has frequent grimacing movements of the face.
At	tim	es, she protrudes her tongue against her will. She has never taken any medications. For clinical scenario,
sel	ect t	he most likely condition.
a	*	Meige syndrome
b		Dopa-responsive dystonia
c		Parkinson disease
d		Olivopontocerebellar atrophy
e		Tardive dyskinesia
A	42-у	vear-old woman has a long history of twisting movements of her head to the left. These are painful and
ha	ve re	esulted over the years in muscular hypertrophy affecting the sternocleidomastoid and trapezius muscles.
Th	ere	is no family history. The remainder of her examination is normal. For clinical scenario, select the most
lik	ely o	condition.
a		Meige syndrome
b		Dopa-responsive dystonia
с	*	Spasmodic torticollis
d		Whipple disease
e		Hemifacial spasm
A	40-y	year-old literary agent has had worsening tremor of the hands. This has been present for 2 years, but has
inc	reas	ingly impaired her work ability because she is frequently required to take her clients to lunch, and she is
em	barr	assed by her inability to eat and drink normally. A glass of wine with the meal typically helps somewhat.
On	exa	umination, there is a mild head tremor, but no rest tremor of the hands. When she holds a pen by the tip at
arr	n's	length, however, a coarse tremor is readily apparent. Examination is otherwise normal. For clinical
sce	enari	o, select the most likely condition.
a		Meige syndrome
b		Dopa-responsive dystonia
с		Whipple disease
d		Hemifacial spasm
e	*	Essential tremor
A	64-	year-old man has noticed dragging of the right leg and tremor and stiffness of the right hand. On
exa	amir	nation, he has a tremor of the right hand, which disappears when he reaches to grab a pen. Movements are

A 64-year-old man has noticed dragging of the right leg and tremor and stiffness of the right hand. On examination, he has a tremor of the right hand, which disappears when he reaches to grab a pen. Movements are slower on the right than the left. He has cogwheel rigidity of the right arm. For clinical scenario, select the most likely condition.

0		Maiga sundroma
a h		Dena responsive dustonia
D	*	Dopa-responsive dystoma
C d	-1-	Parkinson disease
a		Ulivopontocerebellar atrophy
e		l ardive dyskinesia
A .	54-y	rear-old man develops progressive depression and memory impairment over the course of 6 months. His
1n1		neurological evaluation reveals a metabolic acidosis associated with his dementia. His liver is firm, and
nis	spie	een appears to be slightly enlarged. He has tremor and rigidity in his arms and walks with relatively little
SW	ing i	in his arms. His blink is substantially reduced, which gives him the appearance of staring. An WKI of the
	atro	events some allophy of the putation and globus paindus. His celebrospinal huld (CSF) is normal. His
ele	*	Henetalanticular degeneration
a h		Huperperethyroidiam
0		Control nontine muslinglysis
C d		A binetic mutient
a		Akinetic mutism
e	10	MPTP poisoning
A	19-y	/ear-old woman develops auditory hallucinations and persecutory delusions over the course of 3 days.
Sn	e 1s .	d negture and a shuffling gait. Her had is glightly tremulaus, and her measure are an arally slowed
	ope	a posture and a shuffing gait. Her head is slightly tremulous, and her movements are generally slowed.
пе	r III(alza	she became much more enimeted and reports no recurrence of her hellucinations. For aligned scenario
we	eks,	the most likely diagnosis
501		Henotelepticular degeneration
a h		Huperperethyroidiam
0		Postoneenhelitie perkinsenism
4	*	Nouroloptia offect
a		Regional termor
e	65 -	Essential tremor
A	55-y	when he arrives at the americanaly norm, he requires ventilatory assistance. His arrest and lass are
flo		s. when he arrives at the emergency room, he requires ventuatory assistance. His arms and legs are
ing	truo	ted and appears to have completely integet comprehension of speken and written language. An MPL
rou		extensive inferction of the ventral pone. The basilar artery is not visible on magnetic resonance.
100	tion	ranky (MPA). For clinical scenario, select the most likely diagnosis
ang	108	Hepatolenticular degeneration
a b		Hyperparathyroidism
0	*	Locked in syndrome
d		Postencenhalitic parkinsonism
u A		Neurolentic effect
	72 1	rear old man requires hypess surgery to alleviate myocardial ischemia. During surgery, he has a massive
A mu	/ 2- y	rdial infarct and protracted asystole. Resuscitative measures succeed in reestablishing a normal sinus
rhy	oca. thm	but postoperatively the patient remains unconscious after 48 hours. Over the ensuing weeks, the
nat	ient	's level of consciousness improves slightly. He appears awake at times but does not interact in
me	anir	oful ways with visitors. He breathes independently and even swallows food when it is placed in his
mo	aith	but he remains mute With painful stimuli he exhibits semipurposeful withdrawal of his limbs. His
clinical status remains unchanged for several more months. For clinical scenario, select the most likely		
dia	gno	sis.
a		Hepatolenticular degeneration
b		Neuroleptic effect
c		Essential tremor
d	*	Vegetative state
e		Hypermagnesemia
A	52-v	ver-old man exhibits excessive sleepiness slowing of movements mild depression and proximal muscle

A 62-year-old man exhibits excessive sleepiness, slowing of movements, mild depression, and proximal muscle weakness. His proximal limb muscles are obviously atrophied. Although his blood count is normal, routine

screening of serum chemistries reveals an elevated calcium level. He also has an elevated serum creatinine with reduced creatinine clearance. The patient has had abdominal discomfort intermittently for several months and has been told that his episodes of joint swelling were due to pseudogout. For clinical scenario, select the most likely diagnosis.

a		Hepatolenticular degeneration	
b	*	Hyperparathyroidism	
с		Central pontine myelinolysis	
d		Akinetic mutism	
e		MPTP poisoning	
A	21-1	year-old, right-handed female student was working in the photography lab 1 week ago, which required	
sta	ndir	ng all day. After that, she experienced a cold sensation in the left foot and her entire left leg fell asleep.	
Th	e fe	beling lasted 4-to-5 days and then slowly went away. Her right lower extremity was fine. Coughing,	
sne	ezi	ng, and the Valsalva maneuver did not worsen her symptoms. She had a slight back pain, which she	
the	ugh	it was due to using a poor mattress. Past history includes an episode of optic neuritis in the left eye 2	
yea	ars a	ago. At that time, she was reportedly depressed and was sleeping constantly. One day, her left eye became	
blu	rrec	d and her vision went out. In 1 week, her vision returned to normal. Her vision now is 20/She has not had	
a r	epea	at episode since then. She had an magnetic reasonance imaging (MRI) of her brain, which was normal at	
tha	t tii	me. She drinks alcohol occasionally and does not use any illicit drugs. Her only medication is birth	
cor	tro	l pills. Examination is significant for brisk reflexes and sustained clonus at the right ankle. Babinski sign	
is	pres	sent on the right. Testing is positive for oligoclonal bands. Which of the following is the most likely	
dia	gno	sis in this case?	
a		Seizure	
b		Transient ischemic attack	
с		Anaplastic astrocytoma	
d	*	Multiple sclerosis (MS)	
e		Parkinson disease	
A	patio	ent has brought some test results from an outside doctor with her today. One of the results indicates that	
oli	gocl	onal bands were positive. What are oligoclonal bands?	
а		Wave frequency changes on the electroencephalogram (EEG) during sleep	
b		Markings about the iris	
с		Pathologic features of Alzheimer disease	
d		Chromosomal markings found with MS	
e	*	Immunoglobulin patterns in the cerebrospinal fluid (CSF) with MS	
Α	39- <u>:</u>	year-old woman with multiple sclerosis reports symptoms consistent with bladder spasticity and has	
clo	nus	of the lower extremities. On briskly flexing her neck forward, which of the following is she most likely	
to	epc	ort?	
a		Dystonic posturing of the legs	
b	*	An electrical sensation radiating down the spine or into the legs	
С		Bilateral wristdrop	
d		Spontaneous evacuation of the bladder and bilateral extensor plantar responses	
e		Rapidly evolving hemifacial pain	
A	19-y	year-old man had an episode of left optic neuritis, which resolved over several weeks. Two years later	
the	re v	was a month-long episode of bladder dysfunction. The patient underwent many tests and was told that he	
hao	l mi	ultiple sclerosis. The CSF in persons with multiple sclerosis will typically exhibit which of the following?	
a		Glucose content of less than 20% of the serum content	
b		Persistently elevated total protein content	
c	*	Persistently elevated immunoglobulin G (IgG) content	
d		Mononuclear cell counts of greater than 100 cells per μ L	
e		Erythrocyte counts of greater than 10 cells per μ L	
A S	35-y	year-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not	
rec	receive steroids at that time. I wo years ago he had loss of sensation in his hands that progressed over weeks to		
mo	tor	involvement, limiting his ability to write with the left hand. He received steroids at that time. Four years	
ago), n	e began merreron p-1A. One year ago, ne developed right leg weakness, consupation, and urinary	

urgency. He received steroids at that time as well. He now presents with symptoms that concern him about the possible start of a new flare. Two days ago, he noticed decreased sensation in the palm of his right hand that is worse when he exercises. This has gotten a little worse over the past 2 days. Yesterday, he noticed diminished sensation along the lower right trunk in the front and back. He has no pain, tingling, exacerbation of symptoms with neck movement, neck injury, incontinence, gait disturbance, diplopia, fever, chills, nausea, or vomiting. Examination findings include full visual fields with a left afferent pupillary defect. Bulk, strength, and tone are normal. Light touch is decreased over the left trunk and back over roughly the T8-to-T12 dermatomes. Finger tapping, rapid alternating movements, finger-nose-finger, and heel tapping to shin are normal. Which of the following is the most appropriate pharmacological treatment for this patient at this time?

a		Interferon β-1B	
b	*	Corticosteroids	
с		Gabapentin	
d		Glatiramer	
e		Pramipexole	
Α	A 30-year-old man was recently diagnosed with multiple sclerosis. The patient and his wife have many		
que	questions. Among them, they would like know how common multiple sclerosis is. You might tell them that		

questions. Among them, they would like know how common multiple sclerosis is. You might tell them that multiple sclerosis is the most common demyelinating disease in the United States, affecting approximately one person in how many?

a		100	
b		500	
c	*	1000	
d		5000	
e		10,000	
Aţ	A patient with suspected MS undergoes multimodality evoked potentials, EEG, MRI, and CSF testing. Which		

of the following evoked response patterns is most often abnormal in patients with early MS?

a Brainstem auditory evoked response (BAER)

b Far-field somatosensory evoked response (SSER)

c * Visual evoked response (VER)

d Jolly test

e Sensory nerve conduction test

A 37-year-old woman with progressive multiple sclerosis is being admitted for intravenous glucocorticoid therapy. She was diagnosed with multiple sclerosis 10 years ago after presenting with bilateral decreased visual acuity. She had an abnormal MRI at that time. She has been hospitalized approximately nine times since presentation, with her flares commonly consisting of increasing bilateral lower extremity weakness and decreased sensation manifested as a heavy feeling, waxing and waning generalized fatigue, bilateral hand tingling, and occasional nondescript speech changes that make her sound as though she has a slight accent. She has also had bilateral optic neuritis and one transient episode of aphasia in the past. She was last hospitalized 3 years ago. For the past 2 years she has been on cyclophosphamide and methylprednisolone, originally every 4 weeks, and now every 6 weeks, with the last treatment 1 month ago. She has tried and failed interferon β therapy. For the 2 months prior to admission, the patient has had worsening bilateral lower extremity weakness/heaviness, increased fatigue, and mild low back numbness, as well as intermittent and alternating decreased hearing in both ears at work. She has also noticed mild unsteadiness when walking. Which of the following should be included among her admission orders?

a Heart-healthy diet

b * Ranitidine 150 mg bid

c Neurological checks every hour for the first 48 hours

d Placement of central venous line

e Stat head computed tomography (CT) for change in mental status

A 29-year-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on highly active antiretroviral therapy, but stopped taking his medications 8 months ago because he thought that he would be better off. Two months ago, he was successfully treated for Pneumocystis carinii pneumonia. A papovavirus infection of the central nervous system (CNS) in this person would be most likely to produce which of the following?

a		Adrenoleukodystrophy
b		Multiple sclerosis
c		Subacute sclerosing panencephalitis (SSPE)
d		Progressive multifocal leukoencephalopathy (PML)
e	*	Metachromatic leukodystrophy
Α	3-m	onth-old child has a rapid regression of psychomotor function and loss of sight. There is increased
uri	nary	y excretion of N-acetyl-L-aspartic acid. A preliminary diagnosis of Canavan disease (Canavan-van
Bo	gae	rt-Bertrand disease; spongy degeneration of infancy) is made. This is a demyelinating disease that
pro	oduc	es retardation in infants, is inherited in an autosomal recessive pattern, and results in which of the
fol	low	ing?
а		Anencephaly
b		Microcephaly
c		Porencephaly
d	*	Macrocenhaly
e		Dolichocephaly
Δ	58-1	vear-old man with a basilar tip aneurysm is referred by a neuro-surgeon. He has a 4-year history of
nr	Jore	ssive spastic paraparesis. He has recently had urge incontinence of urine. He also has numbress in the
rig	ht to	pes more than the left and pain in the thighs and back. There have been some gradual fluctuations, but no
cle	ar a	discrete episodes of deterioration. He has had no disturbances of vision, eve movement, or motor control
of	the	upper extremities. He was referred when surgical clipping of the aneurysm 3 months ago failed to help
his	evr	upper extremities. The was referred when surgical enpping of the aneurysin 5 months ago raned to help instoms. Which of the following is the most appropriate next diagnostic test?
3	5 S y L	Cerebral angiography
a h		Spinal angiography
0	*	MPL of the spinal cord
4		Spinel cord biopsy
u		Viewal available to the second and the second and the second available to the second and the second available to the second av
e	41.	Visual evoked potential
A	41-	year-old mail has had relapsing-reinfulling multiple scierosis for hearly 20 years. Over that time his
IIII	ever	sible neurological deficits have gradually accumulated, and he now has decreased visual acuity, poor
to	ahor	which of the following chapteresis. Cystometrographic analysis of bladder function in this patient is likely
	SHOV	W which of the following abilormatures?
a h		Large residual values of uring
D	*	Darge residual volume of unne
C 1		
d		Good voluntary control of bladder emptying
e		Urinary tract infection
	patio	ent with multiple sclerosis has worsening leg weakness. He has severe spasms of his legs bilaterally and
15 1	incre	easingly unable to ambulate because of this. A reasonable symptomatic treatment option would be which
of	the :	tollowing?
a		Cyclophosphamide
b	*	Bacloten
С		Gabapentin
d		Amitriptyline hydrochloride
e		Propranolol
Yo	ou ai	re counseling a 22-year-old woman with the recent diagnosis of multiple sclerosis. She wants to know
wh	at,	if any, lifestyle changes she may have to make. Which of the following factors might be expected to
WO	orser	n multiple sclerosis symptoms?
a		Bright lights
b		Red wine
c		Tyramine-containing compounds
d	*	Hot weather
e		Amantadine
Α	23-	year-old woman awakens with bilateral leg weakness and numbness, urinary retention, and impaired
bo	wel	control. She has had several episodes of blurred vision over the previous 2 years, but these had always

bee	en at	ttributed to idiopathic papillitis. For patient, select the most likely diagnosis.
a	*	Neuromyelitis optica (Devic disease)
b		Central pontine myelinolysis
с		Marchiafava-Bignami disease
d		Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
Ти	vo v	veeks after recovering from a febrile illness associated with a productive cough, a 19-year-old man
co	mpla	ains of headache and neck stiffness. These complaints are associated with fever and are soon followed by
det	terio	rating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals
wi	desp	bread damage to the white matter of the cerebral hemispheres. For patient, select the most likely
dia	igno	sis.
a		Neuromyelitis optica (Devic disease)
b		Central pontine myelinolysis
с		Marchiafaya-Bignami disease
d	*	Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
A	24-v	rear-old man has progressive loss of vision over the course of 5 years. A visual field examination reveals
ac	entr	ocecal scotoma Two of his cousins have similar problems with visual loss. Both of the affected relatives
are	e ma	le and in their twenties. Genetic testing reveals a mutation of mitochondrial DNA For patient select the
mc	ost li	kelv diagnosis
2		Neuromyelitis optica (Devic disease)
h		Acute disseminated encenhalomyelitis
C		Pelizaeus-Merzhacher disease
d	*	Leher ontic atrophy
u A		Alexander disease
	\mathbf{h}	rothers A and 7 years of age exhibit limb ataxia nystagmus and mental retardation MPI of their brains
res	ve als	areas of abnormal signal in the white matter. Cerebellar involvement is substantial. Both hove also have
abi	norn	ally low serum cortisol levels. For natient select the most likely diagnosis
201		Neuromyelitis ontica (Devic disease)
h		Central pontine myelinolysis
C		Marchiafaya-Bignami disease
d		Acute disseminated encenhalomyelitis
e	*	A drenoleukodystrophy
Δ	3_m	onth-old how exhibits pystagmus and limb tremors unassociated with seizures. Over the next few years
he	dev	elons ontic atronhy chorecathetotic limb movements seizures and gait ataxia. He dies during status
eni	ilent	icus and at autopsy is found to have widespread myelin breakdown with myelin preservation in islands
ab	out	the blood vessels. The pathologist diagnoses a sudanophilic leukodystrophy to describe the pattern of
sta	inin	g observed on slides prenared to look for myelin breakdown products. For national select the most likely
dia	iono	sis
a		Neuromvelitis optica (Devic disease)
h		Central pontine myelinolysis
C		Marchiafaya-Bignami disease
d		Acute disseminated encenhalomyelitis
e	*	Pelizaeus-Merzhacher disease
Δ	5 <u>4</u> -1	rear-old alcoholic man is brought to the emergency room with profound agitation. He is believed to have
del	J ∓-y lirin	m tremens and is treated with thiamine and intravenous fluids. His serum sodium is noted to be markedly
de	nres	sed, and intravenous supplements are adjusted to rapidly correct this hyponatremia. He becomes acutely
	adri	plegic and unresponsive and dies within 24 hours. For patient select the most likely diagnosis
a		Neuromvelitis optica (Devic disease)
h	*	Central pontine myelinolysis
C		Marchiafaya-Bignami disease
d		Acute disseminated encenhalomyelitis
P		Pelizaeus-Merzhacher disease
C		

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A 13-year-old girl has had a gradually worsening ataxia over the past 6 years. She also reports generalized weakness. Examination findings include height and weight to be at the 50th percentile for a 10-year-old, and a peripheral neuropathy. Serum and red-cell lipid profiles are abnormal, suggesting the diagnosis of abetalipoproteinemia. Chylomicrons, very-low-density lipoprotein (VLDL), and low-density lipoprotein (LDL) would be largely absent in the serum as a consequence of a mutation in which gene?

a	*	Microsomal triglyceride transfer protein
b		Huntingtin
с		Amyloid precursor protein
d		Dystrophin
e		Transfer RNA (tRNA)
A	new	born infant has a cystic swelling at the base of the spine that is covered with hyperpigmented skin and
SOI	ne c	coarse hair. Which of the following is the most likely explanation?
а		Mongolian spot
b		Spina bifida occulta
c		Nevus flammeus
d	*	Meningocele
e		Encephalocele
A	26-у	vear-old man diagnosed with von Hippel-Lindau syndrome has a postcontrast computed tomography (CT)
sca	n th	hat reveals a cyst and two smaller masses in the left cerebellar hemisphere. Which of the following is the
bes	st re	commendation to this patient?
a	*	Surgical resection of the cerebellar lesions as soon as possible
b		Radiation therapy of the cerebellar lesions immediately
c		Follow-up magnetic resonance imaging (MRI) in 6 months to look for involution of the lesions
d		Diagnostic lumbar puncture to look for evidence of parasitic infestation of the brain
e		Needle biopsy of the cerebellum to establish the histology of the cystic lesion
In	Hirs	schsprung disease, neural crest cells fail to migrate normally early in fetal development and produce
po	tenti	ally fatal complications within months of birth because which of the following is disturbed?
а	*	Intestinal motility
b		Bladder control
c		Swallowing
d		Bile secretion
e		Cardiac rhythms
In	the 1	tomogram below showing the base of the skull, which of the following is true regarding the first cervical
vei	rtebr	ra?
а		It is unremarkable
b	*	It is fused to the base of the skull
c		It is completely absent
d		It is displaced dorsally
e		It is incorporated into the odontoid process (od)
In	the a	above x-ray, the second cervical vertebra extends above the level of the foramen magnum and places the
pat	tient	at high risk of having which of the following?
a		A meningoencephalocele
В		A myelomeningocele
с		Syringobulbia
d		Syringomyelia
e	*	Brainstem compression
A	22-у	rear-old healthy woman has a history of mental retardation in her family. Testing has revealed fragile X
syndrome as the etiology. She has brought her husband to the office visit, and they have many questions. Which		
of	the f	following is true regarding women carrying chromosomes for fragile X syndrome?
a		They are invariably normal
b	*	They have mild retardation in about one-half of cases
с		They have high-arched palates and hypotelorism
d		They have hyperextensible joints

e		They have prominent thumbs	
A	35-у	year-old woman has prenatal testing done. The testing reveals that her child will have phenylketonuria	
(Pł	(PKU). With PKU, serum may exhibit dangerously high levels of which of the following?		
a		Creatine phosphokinase (CPK)	
b		Nicotinamide	
С		Phenylketone	
d		Lactate dehydrogenase	
e	*	Phenylalanine	
Α	17-r	nonth-old boy had developed normally until approximately 13 months of age, when he began having	
pro	ogres	ssive gait problems. On examination, the patient is spastic, yet nerve conduction studies (NCS) reveal	
slo	wed	motor and sensory conduction velocities. Cerebrospinal fluid (CSF) protein is elevated. MRI reveals	
wh	ite 1	natter abnormalities. Leukocyte testing reveals deficient arylsulfatase A activity. Which of the following	
tes	ts m	ay also provide useful diagnostic information in this condition?	
a		СТ	
b	*	Nerve biopsy	
с		Red blood cell (RBC) morphology	
d		CSF cell morphology	
e		Electroencephalogram (EEG)	
Aź	25-у	ear-old woman with epilepsy is taking divalproex sodium during the first trimester of pregnancy. She is	
at i	incre	eased risk of having a child with which of the following?	
a		Holoprosencephaly	
b	*	Defects of neural tube closure	
с		Medulloblastoma	
d		Agenesis of the corpus callosum	
e		Kallmann syndrome	
Wi	ith a	genesis of the corpus callosum, MRI will reveal which of the following?	
a		Atrophy of the frontal lobes	
b	*	Abnormally shaped lateral and third ventricles	
С		Cerebellar aplasia	
d		Schizencephaly	
e		Encephaloclastic porencephaly	
A	boy	has the onset of difficulty walking at 16 months. Reflexes are decreased. Over the course of several	
mo	onths	s, the patient becomes dysarthric and mental functioning decreases. Testing reveals that the patient has a	
def	ficie	ncy of arylsulfatase A. Which of the following is the most likely diagnosis?	
a		Sandhoff disease	
b		Tay-Sachs disease	
с		Gaucher disease	
d	*	Metachromatic leukodystrophy	
e		McArdle disease	
A	4-ye	ear-old previously healthy girl develops an intermittent red, scaly rash over her face, neck, hands, and	
leg	gs. T	This is followed by developmental delay, emotional lability, and episodic cerebellar ataxia. She is	
dia	igno	sed with Hartnup disease. Her condition may respond to large supplementary doses of which of the	
fol	lowi	ing?	
a		Vitamin C	
b	*	Nicotinamide	
с		Thiamine	
d		Pyridoxine	
e		α-Tocopherol	
А	15-у	vear-old boy has moderate mental retardation, attention deficit disorder, a long face, enlarged ears, and	
ma	cro	orchidism. Development has been steady but always at a delayed pace. Which of the following is the	
mo	ost li	kely cause for this patient's low intelligence?	
a		Turner syndrome	
b		Klinefelter syndrome	
		55	

с	*	Fragile X syndrome
d		Reye syndrome
e		Tuberous sclerosis
A	5-ye	ear-old boy has mental retardation, homonymous hemianopsia, and hemiparesis. He had infantile spasm
and	d sti	ll has epilepsy. Head CT reveals calcifications in the cerebral cortex in a railroad track pattern. Which of
the	fol	lowing does this child most likely have?
a		Glioblastoma multiforme
b		Oligodendroglioma
с		Acoustic schwannoma
d		Craniopharyngioma
e	*	Sturge-Weber syndrome
А	35-y	year-old man has stumbling and slurred speech. His symptoms started several months ago and have
pro	ogre	ssed slowly but consistently. On neurological examination, he is found to have scanning speech,
nys	stag	mus, limb dysmetria, and kinetic tremor. His intellectual function is normal. Which of the following is
the	e mo	st appropriate initial investigation?
a		Lumbar puncture
b		Serum drug screen
c		Routine urinalysis
d		EEG
e	*	Brain MRI
A	29-у	rear-old woman has progressive gait disorder and dysmetria. Laboratory studies include a hematocrit of
55	% a	nd a routine urinalysis, which reveals excess protein and some RBCs in the urine. Urine culture is
neg	gativ	ve. The initial physical examination reveals an enlarged liver and spleen. Additional physical findings
wi	ll m	ost likely include which of the following?
a		A Kayser-Fleischer ring around the cornea
b		Hypopigmented (ash-leaf) spots on the trunk
С	*	Telangiectasias in the fundi on retinal examination
d		Bilateral hearing loss
e		Generalized hyporeflexia
At	age	5, a child is noted to have the loss of ankle jerks. At age 10, limb ataxia develops, followed by a
per	riphe	eral neuropathy. During adolescence, retinitis pigmentosa develops. Acanthocytosis is present. These are
all	cha	racteristic of which of the following?
a 1		Multiple sclerosis (MS)
b		Sickle cell disease
c	*	Abetalipoproteinemia
d		Progressive multifocal leukoencephalopathy (PML)
e		HIV subacute encephalomyelitis
A	2-ye	ar-old boy with severe epilepsy is diagnosed with tuberous sclerosis. His mother has some skin findings
sug	gges	ting that she is a relatively asymptomatic carrier of the disease. The child's parents would like to
une	ders	tand the risk that their future offspring may develop tuberous scierosis. This condition is inherited in
wh	iich	or the following patterns?
a 1	4	A sex-linked recessive pattern
D	Ť	An autosomal dominant pattern
C	$\left \right $	An autosomal recessive patiern
a	$\left \right $	A pattern most consistent with newly arising mutations
e		A pattern suggesting a mitochondrial gene defect
An	1 111	fant has a head C1 performed because of a large head and failure to thrive. The diagnosis of
nyo c:		rephanus is made. Congenital hydrocephanus may develop as a consequence of which of the following
III	si-tri	Complicated microine
a L	*	Viral infaction
D	Ť	virai miecuon
C		Pseudotumor cerebri
d		Chorea gravidarum

e		Intervertebral disk herniation
In	the	preceding patient, uncorrected congenital hydrocephalus will usually produce which of the following?
a		Dolichocephaly
b		Brachycephaly
с		Holoprosencephaly
d	*	Macrocephaly
e		Microcephaly
A	6-m	onth-old child has head lag, tongue fasciculations, and bilateral abducens palsies. MRI scan reveals a
tvr	ne 2	Chiari malformation. Which of the following defects would this child be likely to have?
a - 51		A renal cyst
b		Pulmonary atelectasis
c	*	Spina bifida
d		Holoprosencephaly
e		A henatic cyst
A	7-ve	ear-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are
	ncer	ned. The dermatologist tells them that their child has adenoma sebaceum. Adenoma sebaceum of the face
is	esne	cially common with which of the following diseases?
<u>а</u>		Neurofibromatosis
h		Sturge-Weber syndrome
C	*	Tuberous sclerosis
d		Δ tavia telangiectacia
u A		Fragile X syndrome
W	ithir	6 years of his initial visit a patient with yon Hippel Lindau syndrome returns with a pathologic fracture
of	hie	spine. Bionsy reveals metastatic cancer. Which of the following is the likely source of the tumor?
01	IIIS (Carabral hamisphere
a h		Cerebellar hemisphere
0		Liver
4	*	Kidney
u	-	Spleen
e W	hich	of the following ratingl problems tend to occur in people with tuberous selence is?
VV.	*	Potinel phokomes
a h		Retinitia placollas
0		Retinuts pignentosa
C d		Patinghlastomas
a		Retinoblastollas
e C	1.:0	Retinal problems are generally not part of the disease
Ca		following?
01	the .	Coloified subgrandsmal alial as dulas
a 1		
D		Calcined meningeal addesions
C J		Meningeal psammoma bodies
a		
e	50	
A .	50-y	rear-old man presenting with "dizziness" is found to have a cyst occupying 50% of his posterior fossa and
	com	plete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus.
H1	S 101	Igevity can be esumated to be which of the following?
a 1		Less than 5 months
b		Less than 1 year
C	-	Less than 5 years
d		Less than 10 years
e	*	Unattected by this finding
A	1-y	ear-old girl is evaluated for developmental delay. Examination and testing reveal that she is having
l hu	ndre	as of seizures per day. The clinical manifestations are somewhat subtle and consist of sit-up like.

movements. Interictal EEG shows multifocal, high-amplitude spikes (hypsarrhythmia) and slowing. Which of the following is the treatment of choice for this patient? Carbamazepine a Phenobarbital b Phenytoin с d Divalproex sodium * Adrenocorticotropic hormone (ACTH) e A 9-year-old boy has been generally healthy. However, there is a family history of neurological disease, and his parents are concerned that his many areas of hyperpigmented skin (some more than 5 in. in diameter) may have some significance. This dermatological manifestation is commonly found on patients with which of the following diseases? Tuberous sclerosis a Neurofibromatosis b * с MS Sturge-Weber syndrome d Ataxia telangiectasia e The newborn infant with motor neuron disease is likely to exhibit which of the following? Seizures а b * Hypotonia Hypsarrhythmia с d Moro reflexes Spina bifida e Many children with Tay-Sachs disease develop blindness before they die, with retinal accumulation of gangliosides that produces which of the following? Optic neuritis a Cherry red spots b * Chorioretinitis с d Retinal detachments Waxy exudates e The parents of a 10-year-old boy bring their child in to see you. The child has been diagnosed with cerebral palsy, and the parents do not really understand what this means. As part of your explanation, which of the following would you tell them? Cerebral palsy is a static encephalopathy because deficits do not appear after birth a * Cerebral palsy is a static encephalopathy because the injury to the brain does not progress b с Cerebral palsy is a static encephalopathy because affected persons fail to reach any developmental milestones on time Cerebral palsy is a static encephalopathy because affected persons have resting tremors d Cerebral palsy is a static encephalopathy because the EEG exhibits a disorganized background rhythm e A 6-year-old child is brought to the neurologist because of developmental delay. Her morphological features are typical, and chromosome analysis confirms a diagnosis of Down syndrome (trisomy 21). The brain of this patient is expected to have which of the following characteristics? Smaller than normal for age and body size a Larger than normal for age and body size b с Abnormally long in anteroposterior measurements Hydrocephalic d Excessively convoluted e A 7-year-old child has a head CT ordered because of recent headaches. The scan is significant for a right parietal parenchymal defect that is continuous with the ventricle and does not appear to be lined with gray matter. This type of lesion usually develops as a consequence of which of the following? Fetal alcohol syndrome a Vascular or other destructive injuries to the fetal brain b * Trisomy 13 с d Trisomy 21

e		Dandy-Walker syndrome
W	hat p	percentage of patients with tuberous sclerosis have mental retardation?
а	Î	1%
b		10%
с		25%
d	*	65%
e		99%
Δ	child	d is born to a 19-year-old woman who has had two to eight drinks per day throughout her pregnancy
W	hat i	s the major pathologic effect of alcohol on the central nervous system of the developing fetus?
2		Cerebral ischemia
a h		Periventricular hemorrhage
0		Macrocanhaly
d	*	Impoired neuronal migration
u		Helemaseneenhely.
e	27 -	Holopiosencephary
A	37-y	ear-old man has an MRI performed by his primary care doctor because of a long history of headaches. It
1S 1	nota	ble only for the finding of a type 1 Chiari malformation. He is sent to a neurologist for further evaluation.
A	type	I Chiari malformation usually becomes symptomatic as which of the following in adults?
a	$\left \right $	Epilepsy
b		Hydrocephalus
С	*	Ataxia
d		Dementia
e		Psychosis
Α	25-у	rear-old mother develops an illness during pregnancy. A diagnosis of cytomegalovirus (CMV) infection
is	mad	e by serology. Prenatal CMV infections may produce which retinal disturbance?
a	*	Chorioretinitis
b		Cherry red spot
с		Microaneurysms
d		Hypervascularity
e		Hemorrhage
Α	65-	year-old man was diagnosed with lung cancer 6 months ago. Over the past 2 months, he has had
wo	orser	ing severe proximal muscle weakness. He is most likely to have which of the following?
a	*	Dermatomyositis
b		Trichinosis
с		Multiple sclerosis (MS)
d		Progressive multifocal leukoencephalopathy (PML)
e		Myasthenia gravis
A	2-ve	ear-old male child has recently been diagnosed with the most frequent type of muscular dystrophy. The
na	rents	s are highly educated people, but not in the medical field. They have many specific and detailed
du	estic	ons. Which abnormal gene is responsible for their child's condition?
<u>ч</u> ч а		Glucose-6-phosphatase
h		Hexosaminidase B
0	$\left \right $	Myosin
4	*	Dystronhin
u o		Actin
	67 1	Actili
A	07-9	were toward the and of the day. She undergoes a neuromycoular evolution including nerve
always worse toward the end of the day. She undergoes a neuromuscular evaluation, including her		
co		restortion study (NCS)/electromyography (EMG), which shows a decrementing response of compound muscle
	lion	potential to 5 HZ repetitive summation. She is positive for anti-AChK antibodies. Which of the following its of diseases in this patient?
15	me s	Anterior home coll
a 1	4	Amerior nom cen
b	*	Neuromuscular junction
C		Sensory ganglion
d	1	Parasympathetic ganglia

e		Sympathetic chain	
A	pati	ent with amyotrophic lateral sclerosis develops progressive difficulty breathing. His cough becomes	
tot	totally ineffective for clearing his airway and he requires a tracheostomy Facial muscle weakness and		
fas	cicu	lations are obvious at the time the tracheostomy is performed. Which of the following is the most	
anr	oron	riate treatment for this nation?	
app	ЛОР	Atronine sulfate	
a h		Duridestigning	
0		Edwardsonium	
C			
a		Amantadine	
e	*	Chest physical therapy	
Αź	28-у	ear-old woman has the clinical diagnosis of myopathy and undergoes a muscle biopsy for diagnosis. The	
pat	holo	bgy demonstrates an inflammatory muscle disease characterized by noncaseating granulomas. Which of	
the	fol	lowing may have caused her symptoms?	
a		Cysticercosis	
b		Tuberculosis	
с	*	Sarcoidosis	
d		Schistosomiasis	
e		Carcinomatosis	
A (62-y	rear-old woman has limb discomfort and trouble getting off the toilet. She is unable to climb stairs and	
has	s not	ticed a rash on her face about her eyes. On examination, she is found to have weakness about the hip and	
sho	ould	er girdle. Not only does she have a purplish-red discoloration of the skin about the eyes, but she also has	
ery	ther	natous discoloration over the finger joints and purplish nodules over the elbows and knees. Which of the	
fol	lowi	ing is the most likely diagnosis?	
a		Systemic lupus erythematosus	
b		Psoriasis	
С		Myasthenia gravis	
d	*	Dermatomyositis	
e		Rheumatoid arthritis	
Th	e ras	sh typically associated with dermatomyositis is characterized by which of the following?	
2		A denoma sebaceum	
h h		Shagreen patches	
0		Target shaped erythematous lesions on the extremities	
с 4	*	A purplich discoloration around the avec	
a		Televiseteeies	
e		Telangiectasias	
A .	32-у	ear-old woman has several family members with Duchenne dystrophy. She has genetic testing and is	
kno	own	to be a carrier of the gene. A blood test may exhibit substantial elevations in her serum of which of the	
fol	low	ing?	
a		Ammonia	
b		Myoglobin	
С		Phosphotructokinase	
d	*	Creatine phosphokinase (CPK)	
e		Hexosaminidase	
Wł	nen	examining a young child with Duchenne dystrophy, you are asked by the parents if the condition is	
cor	nmo	on. You would tell them that this disease affects how many of the following?	
a		1 in 3,000 infants	
b	*	1 in 3,000 male infants	
с		1 in 30,000 infants	
d		1 in 30,000 male infants	
е		1 in 50,000 infants	
A	2-ve	ar-old male child has recently been diagnosed with muscular dystrophy. The parents are highly educated	
nec	- Jo onle	but not in the medical field. They have many specific and detailed questions. For a female child to have	
	che	nne dystrophy, she must have which of the following?	
a	*	Turner syndrome (XO)	
a			

b		Klinefelter syndrome (XXY)	
с		Two affected parents	
d		An affected father	
e		An affected brother	
Th	e sr	pontaneous mutation rate for the dystrophin gene is presumed to be high for which of the following	
rea	son	s?	
2	*	Men with Duchenne dystrophy do not reproduce	
u h		The incidence of Duchenne dystrophy is increasing	
0		Numerous birth defects occur in families with Duchenne dustronby	
с 4		Man may become symptometric after adolescence	
u		Constinue of ages in human overies reveal on average of abnormal dystrophin gapes	
U Int	alla.	the studies of eggs in numan ovaries revear an excess of abnormal dystrophin genes	
fol		tual function in children with Duchenne dystrophy can usually be characterized as which of the	
101	IOW	Ing / Madaa dha inana ina d	
a 1	4	Markedly impaired	
b	*	Slightly impaired	
С		Normal	
d		Slightly better than that of the general population	
e		Markedly superior to that of the general population	
In	patio	ents with Duchenne dystrophy, which of the following is true?	
a		Pseudohypertrophy routinely does not occur	
b		Pseudohypertrophy routinely is limited to the shoulder girdle	
с		Pseudohypertrophy routinely is limited to the hip girdle	
d	*	Pseudohypertrophy routinely is limited to the calf muscles	
e		Pseudohypertrophy routinely is limited to the thigh muscles	
А	37-	year-old man has difficulty relaxing his grip on his golf club after putting. He also is excessively	
sor	nno	lent. Examination reveals early cataract development, testicular atrophy, and baldness. His family says	
tha	t he	e has become increasingly stubborn and hostile over the past 3 years. His electrocardiogram (ECG)	
rev	reals	a minor conduction defect. An electro-myogram (EMG) will probably reveal which of the following?	
a	*	Repetitive discharges with minor stimulation	
b		Polyphasic giant action potentials	
С		Fasciculations	
d		Fibrillations	
е		Positive waves	
A	75-v	rear-old man has malaise and slowly progressive weight loss for the better part of 3 months. Laboratory	
tes	ts re	eveal a hematocrit of 32%, an erythrocyte sedimentation rate (ESR) of 97 mm/h, and a white blood cell	
(W	BC) count of 10,700 cells per uL. Serum CPK and thyroxine (T4) levels are normal. Which of the following	
is t	he r	nost likely explanation for the patient's complaints?	
а		Polymyositis	
b		Dermatomyositis	
c	*	Polymyalgia rheumatica	
d		Rheumatoid arthritis	
e		Hyperthyroid myopathy	
Δ	32-1	responsible in solution weakness in his hands over the course of 3 months. Further questioning reveals	
tha	52 y t he	is also having trouble with swallowing. He occasionally slurs his words and has noticed progressive	
we	akna	ess in his cough over the preceding 4 weeks. The weakness is not substantially worse later in the day. He	
has		sensory symptoms associated with his weakness. Sexual function bladder and howel control hearing	
vie	ion	and balance are all alleged to be unchanged. The examining physician discovers marked atrophy of the	
int	eros	seous muscles of both hands. Deen tendon reflexes are hyperactive in the arms and the legs. Extensor	
nla	nlantar responses are present hilaterally. Rectal sphincter tone is normal. This patient's illness characteristically		
nre	due	es electromyographic changes that include which of the following?	
pre a	*	Fibrillations	
u h		Markedly slowed nerve conduction velocities	
C		Impaired sensory nerve action potentials	

d	H reflexes
e	No abnormalities
A bio	psy is obtained from a clinically affected muscle in a person with several months of progressive weakness.
The	pathologist reports that there are numerous abnormally small muscle fibers intermingled with
hyper	trophied muscle fibers. The normal mosaic of muscle fiber types is disrupted. There is no significant
inflar	nmatory infiltrate. This pathologic description is most consistent with which of the following?
a	Disuse atrophy
b *	Denervation atrophy
с	Muscular dystrophy
d	Polymyositis
e	Hypoxic damage
A 52-	year-old left-handed woman says that she has a history of myasthenia gravis. When asked about details of
the h	story, she says that she was weak. With further prompting, the patient becomes belligerent and says that
she d	oes not remember any further details. Which of the following is the most common manifestation of muscle
weak	ness with myasthenia gravis?
a	Diaphragmatic weakness
b	Wristdrop
с	Footdrop
d *	Ocular muscle weakness
e	Dysphagia
A pa	tient with amyotrophic lateral sclerosis dies within 9 months of his initial evaluation. An autopsy is
perfo	rmed, but only the central nervous system (CNS) can be examined. Examination of the spinal cord would
be ex	pected to reveal degeneration of which of the following?
а	Dorsal root ganglia
b	Posterior columns
c	Spinothalamic tracts
d *	Corticospinal tracts
e	Spinocerebellar tracts
The	shortest life expectancy is associated with which clinical sign in amyotrophic lateral sclerosis?
a	Atrophy of the interossei
b	Atrophy of the gastrocnemius
c	Fasciculations in the lumbrical muscles
d	Atrophy of the pectoralis muscles
e *	Fasciculations in the tongue
A 42-	year-old man has had 6-to-15 drinks per day for the past 15 years. He is healthy overall, but has difficulty
with	tandem gait. Which of the following is the most common site of central nervous system (CNS) atrophy
assoc	iated with chronic alcoholism?
a *	The superior vermis
b	Wernicke area
c	The supraorbital gyrus
d	The angular gyrus
e	The flocculus
An 83	3-year-old man gives a history of being poisoned by "jake" when drinking illicit alcohol as a young man.
After	doing some research you learn that "jake" is actually triorthocresyl phosphate. Triorthocresyl phosphate is
an or	ganophosphate that may cause lethal neurological complications by which of the following means?
a	Eliciting massive intracerebral edema
b *	Causing a severe motor polyneuropathy
с	Producing widespread CNS demyelination
d	Allowing CNS infections secondary to generalized immunosuppression
e	Inducing status epilepticus
A 1-y	year-old child is brought to the emergency room with an acute encephalopathy. It is determined that the
etiolo	gy is lead intoxication. With severe lead poisoning, very young children may die of brain herniation
secon	dary to which of the following?

a		Subdural hematomas
b		Epidural hematomas
c		Intracerebral hemorrhage
d		Obstructive hydrocephalus
e	*	Massive brain edema
Α .	30-y	year-old man takes a can of beer out of his refrigerator at the end of the day and rapidly swallows a
mo	uth	ful of its contents before he realizes it is not beer. Within a few minutes he develops severe abdominal
cra	mps	s, blurred vision, twitching, and loss of consciousness. His wife notifies emergency medical personnel
tha	t sh	e had placed some roach spray in the beer can for storage and had left it in the refrigerator to deal with
roa	che	s that were nesting there and that she forgot to advise her husband of this. Emergency personnel check
the	ins	ecticide brand and determine that it is an organophosphate. To counteract the cholinesterase-inhibiting
acti	ivit	y of the organophosphate poison, the man should receive which of the following?
a		Methacholine
b		Pyridostigmine
с		Physostigmine
d		Edrophonium
e	*	Atropine
Ar	nan	working in a poorly regulated felt-processing plant develops tremors and memory disturbances over the
cou	irse	of months. He seeks medical help when tremors of his tongue and lips became embarrassing and he is
inju	irec	during a fall. His family notes progressive irritability and depression. On neurological examination, he
has	pro	prime gait ataxia, limb and facial tremors, and decreased pain and temperature sense in his feet. Choose
the	tox	in that is most likely to produce each clinical scenario. Each lettered option may be used once, more than
onc	e, c	or not at all.
a		Lead
b		Arsenic
c		Manganese
d	*	Mercury
e		Carbon monoxide
Wh	nile	vacationing in Latin America, a student buys a brightly painted glazed ceramic pitcher. He drinks orange
inia	re f	from the nitcher every night while studying Within 4 months of starting this practice he develops
we	akn	ess in both wrists. He consults a physician, who finds weakness on dorsiflexion of both hands.
una	ISSO	ciated with any sensory deficits. An electromyography (EMG) reveals evidence of a peripheral motor
neu	iron	bathy. Choose the toxin that is most likely to produce each clinical scenario. Each lettered option may be
use	d o	nce. more than once. or not at all.
a	*	Lead
h		Arsenic
C C		Manganese
d		Mercury
e e		Carbon monoxide
Δ	15_1	ver-old woman reports to the police her discovery that her husband has added a suspicious material to
her	for	ad She has experienced matrimonial problems for several years and has developed progressive fatigue
wit	h fr	equent headache over the prior 3 months. She consulted a physician when she developed recurrent houts
of	n n seve	ere stomach pain and was told by neighbors that she had been talking to herself and attacking invisible
355	aila	nts. The physician noted that she had an unexplained anemia and white lines running transversely across
her	fir	overnails. She also has had problems with her memory excessive drowsiness and a sensorimotor
ner	iron	bathy with absent tendon reflexes. The physician sent a sample of her hair for analysis and found a
neu	irot	oxin present. Choose the toxin that is most likely to produce each clinical scenario. Each lettered option
ma	v he	e used once, more than once, or not at all
a	,	Lead
h	*	Arsenic
c c		Manganese
d		Mercury

An Eastern European immigrant who recently arrived in the United States is brought to the emergency room after a seizure. He first developed seizures at the age of 30 and never received treatment. Neurological examination reveals fasciculations and occasional myoclonus. He is ataxic and has absent deep tendon reflexes. A sensory neuropathy is evident in his legs. Ulcers are evident on his fingers and toes. He acknowledges that his diet was very limited before he immigrated to the United States and states that most of his calories were derived from rye grains. Choose the toxin that is most likely to produce each clinical scenario. Each lettered option may be used once, more than once, or not at all.

a		Manganese
b		Mercury
с		Carbon monoxide
d	*	Ergot
e		Nitrous oxide
A 3	38-y	vear-old miner develops a shuffling gait, tremor, and drooling. His speech is difficult to understand and
trai	ls o	ff in volume until it is inaudible. He consults a physician because of easy fatigability and frequent falls.
Co	gwh	heel rigidity is evident in his arms and legs. His tremor is most evident when his limbs are at rest. Choose
the	tox	in that is most likely to produce each clinical scenario. Each lettered option may be used once, more than
onc	e, c	or not at all.
a		Lead
b		Arsenic
с	*	Manganese
d		Mercury
e		Carbon monoxide
A	35-1	vear-old woman is rescued from a burning building. She is comatose on arrival in the ER. Her skin is
cva	not	ic. Computed tomography (CT) scan of her head shows mild cerebral edema. After intensive care in a
bur	n u	nit, she recovers markedly, but 2 weeks later, she begins to develop dystonic posturing and bradykinesia.
AC	CT s	scan now shows hypodensities in the globus pallidum bilaterally. Choose the toxin that is most likely to
pro	duc	e each clinical scenario. Each lettered option may be used once, more than once, or not at all.
a		Lead
b		Arsenic
c		Manganese
d		Mercury
e	*	Carbon monoxide
A	45-1	vear-old Portuguese immigrant develops abdominal pain in the early evening after eating grouper for
lun	ch.	He later develops fatigue, headache, and paresthesias. He reports on examination that a cold tuning fork
feel	ls ez	xcessively hot to the touch. Choose the toxic substance most likely to produce clinical scenario.
a	*	Ciguatoxin
b		Botulinum toxin
c		Saxitoxin
d		Tick paralysis
e		Ionizing radiation
A 3	30-v	ear-old refugee from sub-Saharan Africa is malnourished. She has a subacute spastic paraparesis and gait
inst	tabi	lity. Cognition, sensory, and cerebellar functions are intact. Choose the toxic substance most likely to
pro	duc	e clinical scenario.
р- э		Ciguatoxin
h h		Phencyclidine hydrochloride (PCP)
c		Cocaine
d	*	Lathyrus sativus
e		Ammonia
	5-ve	ear-old girl with long hair is hospitalized during August with a rapidly accending flaceid quadrinaresis
over 2 days. She had been camping in the woods with her family during the preceding week. She develops		
nec	n 2 b c	augo, one had been camping in the woods with her family during the preceding week. She develops

clinical scenario.

b Botulinum toxin d * Tick paralysis d * Tick paralysis d * Tick paralysis d Notation A 34-year-old schizophrenic man with a history of Hodgkin disease in remission since treatment 10 years ago presents with a right middle cerebral artery territory stroke. He is found to have bilateral caroid bruits. There is no history of hypertension, diabetes, or hypercholesterolemia. He smokes cigarettes, Choose the toxic substance most likely to produce clinical scenario. a Ciguatoxin b Botulinum toxin c Saxitoxia d Tick paralysis e * Ionizing radiation V2-year-old man with idiopathic cardiomyopathy and right heart failure is admitted to the intensive care unit. V4-year-old man with idiopathic cardiomyopathy and right heart failure is admitted to the intensive care unit. V5-year-old man with idiopathic cardiomyopathy and right heart failure is admitted to the intensive care unit. V4-year-old man with idiopathic scenario. a Ciguatoxin b Botulinum toxin c * Ammonia d Ionizing radiation c * Ammonia d Ionizing radiation c Phencyclidine hydrochlo	a		Ciguatoxin
c Saxitoxin d *	b		Botulinum toxin
d * Tick paralysis e Ionizing radiation A 34-year-old schizophrene man with a history of Hodgkin disease in remission since treatment 10 years ago presents with a right middle cerebral artery territory stroke. He is found to have bilateral carotid bruits. There is in history of hypertension, diabetes, or hypercholesterolemia. He smokes cigarettes. Choose the toxic substance most likely to produce clinical scenario. a Ciguatoxin b Botulinum toxin c Saxitoxin d Tick paralysis e National data in the intensive care unit. Over several data with idiopathic cardiomyopathy and right heart failure is admitted to the intensive care unit. Over several data with idiopathic cardiomyopathy and right heart failure is admitted to the intensive care unit. Over several data with idiopathic cardiomyopathy and right heart failure is admitted to the intensive care unit. Over several data with idiopathic cardiomyopathy and right heart failure is admitted to the intensive care unit. Over several data with idiopathic cardiomyopathy and right heart failure is admitted to the intensive care unit. Over several data with idiopathic cardiomyopathy and right heart failure is admitted to the intensive care unit. Over several data with idiopathic cardiomyopathy and right heart failure is admitted to the intensive care unit. Over several data with idiopathic cardiomyopathy and regulata is placed	с		Saxitoxin
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a * Congenital cataracts B Chorioretinitis c Retinitis pigmentosa d Optic atrophy	abs	sent.	Which of the following could this indicate?
B Chorioretinitis c Retinitis pigmentosa d Optic atrophy	a	*	Congenital cataracts
c Retinitis pigmentosa d Optic atrophy	В		Chorioretinitis
d Ontic atronhy	с		Retinitis pigmentosa
	d		Optic atrophy

e		Holoprosencephaly
Gla	auco	oma develops in nearly one-third of children with which of the following?
a		Type 1 neurofibromatosis
b		Type 2 neurofibromatosis
с	*	Sturge-Weber syndrome (encephalotrigeminal angiomatosis)
d		Tuberous sclerosis
e		Arnold-Chiari malformation
A	23-у	vear-old human immunodeficiency virus (HIV)-infected woman presents with visual loss. After testing,
the	dia	agnosis of retinitis caused by cytomegalovirus (CMV) is made. Which of the following is the most
app	prop	riate treatment for this patient?
a		Cytarabine
b		Vidarabine
с		Ribavirin
d		Interferon
e	*	Ganciclovir
Α	52-у	year-old woman is being evaluated for the acute appearance of a large central scotoma. Which of the
fol	lowi	ing most likely preceded her presentation?
a		Pseudotumor cerebri
b		Chronic ethanolism
с		Chlorpromazine ingestion
d	*	Methyl alcohol intoxication
e		Isoniazid use
A	28-у	year-old man presents with right eye pain and blurry vision developing over 3 days. After examination
and	l fui	rther history, a diagnosis of papillitis is made. How can papillitis be distinguished from the papilledema
of	incr	eased intracranial pressure (ICP)?
a		Degree of swelling of the optic disc
b		Associated homonymous hemianopsia
с	*	Characteristic visual loss
d		Associated limitation of eye movement
e		Loss of red reflex
Α	19-y	ear-old woman with headaches and visual blurring has prominent bulging of both optic nerve heads with
ob	scur	ation of all margins of both optic discs. Her physician is reluctant to pursue neurological studies because
the	pat	tient is 8 months pregnant and had similar symptoms during the last month of another pregnancy. Her
ph	ysica	al and neurological examinations are otherwise unrevealing. If neuroimaging studies were to be
per	forr	ned on this woman, they probably would reveal which of the following?
а		A subfrontal meningioma
b		Intraventricular blood
с	*	Slitlike ventricles
d		Transtentorial herniation
e		Metastatic breast carcinoma
A .	36-y	rear-old woman has tunnel vision in which she reports the same size area of perception regardless of how
far	from	m the testing screen the examination is performed. This history often indicates which of the following?
a		Retinitis pigmentosa
b		Neurosyphilis
c		Sarcoidosis
d		Chorioretinitis
e	*	Conversion disorder
A	your	ng man with multiple sclerosis (MS) exhibits paradoxical dilation of the right pupil when a flashlight is
redirected from the left eye into the right eye. Swinging the flashlight back to the left eye produces constriction		
of	the 1	right pupil. Which of the following is the most likely diagnosis?
a		Early cataract formation in the right eye
b		Occipital lobe damage on the left
с		Oscillopsia

d		Hippus
e	*	Optic atrophy
А	23-	year-old woman has 2 days of visual loss associated with discomfort in the right eye. She appears
oth	erw	ise healthy, but her family reports recurrent problems with bladder control over the prior 2 years, which
the	pat	ient is reluctant to discuss. On neurological examination, this young woman exhibits dysmetria in her
rig	ht a	rm, a plantar extensor response of the left foot, and slurred speech. Which of the following would be the
mo	ost ir	nformative ancillary test?
a		Visual evoked response (VER) testing
b		Sural nerve biopsy
с		Electroencephalography (EEG)
d	*	Magnetic resonance imaging (MRI)
e		Computed tomography (CT)
Inj	urie	s to the macula or fovea centralis typically affect vision by producing which of the following?
a		Bitemporal hemianopsia
b		Nyctalopia (night blindness)
c		Scintillating scotomas
d		Mild loss of visual acuity
e	*	Severe loss of visual acuity
A	64-3	year-old man who has had hypertension for more than 30 years is being examined. The most obvious
cha	inge	es seen during retinal examination would include which of the following?
a		Retinal tears
b		Optic atrophy
c	*	Segmental narrowing of arterioles
d		Drusen
u e		Telangiectasias
Ro	utin	e funduscopic examination of a 52-year-old man reveals small discrete red dots located in largest
niii	mhe	rs in the paracentral region. Such retinal microaneurysms most often occur with which of the following?
a		Sarcoidosis
u h		Chronic hypertension
C	*	Diabetes mellitus
d		Anterior communicating aneurysms
u e		Chorioretinitis
Δ	72_v	ear-old woman presents with the acute onset of double vision. The second image disappears if she covers
л eitl	/∠-y here	which of the following nerves is most likely to be impaired in this patient?
2		Oculometer
a h		Trochlear
C	*	Abducens
d		Ciliary
u A		Miller
	7 10	ar old girl acutaly dayalons horizontal diplonia that worsens over the course of a few days. Examination
rev	/-yc wale	that the double vision is exacerbated by leftward gaze. Red glass testing reveals that the "false" image is
fro	m th	be left eve. She is most likely to have which of the following?
0	m u *	Pontine glioma
a h	-	Modullary glioma
0		Mesonconholic information
с д		Dontine inferction
u		Madullary informion
e ^	6	ivieuunary initateuon
A b-year-old girl has left facial pain and blurry vision. Careful examination reveals a deficit of the abducens		
ner	ve.	Vention of the following is the most likely ethology?
a L	*	Ischenna
0	*	Infection Naonloom
С		neopiasiii

d	Trauma
e	Hemorrhage
A 19-	vear-old man is hit in the face with a lead nine. The ocular motor muscle most likely to be injured in this
case is	that innervated by which of the following?
a	Superior division of the third cranial nerve
h	Inferior division of the third cranial nerve
C *	Fourth (trochlear) cranial nerve
d	Sixth (abducens) cranial nerve
u	Long ciliory norvo
	Long child y lice ve
occurs	only when both eyes are open. She is diagnosed with varicella zoster ophthalmicus. Which ocular motor
nerve	is most likely to be affected?
a	Superior division of the third
b	Inferior division of the third
c *	Fourth (trochlear)
d	Sixth (abducens)
e	Long ciliary
A 32-	vear-old woman has an MRI done because of a first seizure. No etiology for the seizure is found, but there
is the	incidental finding of an aneurysm. The aneurysm is 5 mm and affects the posterior communicating artery.
It is v	ery close to the third cranial nerve. The initial sign of pressure on the third nerve is usually which of the
follow	ing?
a	Impaired adduction
h	Impaired adduction
C C	Impaired depression
d	Impaired depression
u e *	Impaired pupillary constriction
A 58	user old man with type 2 disbetes presents with the scute onset of double vision. Examination reveals a
A Jo-	of the third cranial nerve. A third-nerve palsy associated with diabetes mellitus is usually characterized
by wh	ich of the following?
0 V WI	Poor numilediletion
a b	Poor pupilloconstriction
	Poor pupiloconstruction
	Sparing of pupiliary function
a	Inversion of the affected eye
e A CT	Upward deviation of the affected eye
A 65-	year-old man is having a neurological examination because of tingling in his feet. During the course of the
	nation, it is noticed that pupiliary constriction occurs with attempted adduction of the globe. This suggests
which	of the following?
a 1	Mesencephanc infarction
b	Pontine glioma
C	Acute glaucoma
d	
e *	Aberrant third-nerve regeneration
A 35-	year-old man with MS presents with blurry vision. Examination reveals that the medial rectus muscle fails
to mo	ve synchronously with the contralateral lateral rectus muscle on attempted gaze to either side. When each
eye is	tested individually, medial rectus function is relatively preserved. In addition, prominent nystagmus is
preser	t in the abducting eye. These findings indicate evidence of which of the following?
a *	A mesencephalic or pontine injury
b	Thalamic hemorrhage
С	Cerebellar dysfunction
d	Cortical injury in the frontal eye fields
e	Medullary infarction
A 34-	year-old woman recently emigrated from Poland. She has a history of some type of progressive, episodic
neuro	ogical disease that began 5 years ago. Examination shows evidence of bilateral injury to the medial

lor	ngitu	idinal fasciculus (MLF). Which of the following is the most likely diagnosis?
a		Progressive supranuclear palsy
b	*	MS
с		Subacute sclerosing panencephalitis (SSPE)
d		Progressive multifocal leukoencephalopathy (PML)
e		Botulism
Α	42-1	year-old man has horizontal nystagmus in primary gaze and while looking to both the left and the right.
Th	le on	ly other examination finding is a slight gait ataxia. Which of the following is the most likely cause of this
pa	tient	's induced nystagmus?
<u>r.</u> a		Hysteria
h	*	Drug intoxication
C		Fyestrain
d		Myonia
u A		Hypermetronia
4	ohil	d with rapid downward doviation of both avec followed by slow unward conjugate ave movements
A	chab	u whin taplu downward deviation of bour eyes followed by slow upward conjugate eye movements
pro		
a 1		SSPE
b		MS Desite the
c	*	Pontine glioma
d		Cervicomedullary junction ischemia
e		Cerebral palsy
Α	25-у	year-old man is being evaluated. Rhythmic jerk nystagmus is elicited by having the patient look at a
rot	atin	g drum with stripes on it. This finding suggests which of the following?
a		Drug toxicity
b		Brainstem ischemia
с		Parinaud syndrome
d		Unilateral parietal lobe damage
e	*	No pathologic lesion in the brain
Α	36-	year-old man abruptly loses vision in one eye. His retina appears cloudy and grayish yellow with
na	rrow	red arterioles. The fovea appears cherry red, and the vessels that are obvious appear to have segmented
co	lumı	ns of blood. Which of the following is the most likely diagnosis?
a		Chorioretinitis
b		Occlusion of the central retinal vein
с	*	Occlusion of the central retinal artery
d		Optic neuritis
e		Tay-Sachs disease
A	62-3	year-old man with hypertension has an episode in which he suddenly loses vision in his left eve. He is
	tside	walking up the street as he does every day when suddenly the vision in his left eve goes black. When
he	clos	see his right even he can harely see at all Within 2 hours his vision is back to normal. What is the best
ne	xt st	en to assess the nation's risk of having another attack of this kind?
2		Transthoracic echocardiogram
h		Brain MRI
0		Brain CT
d	*	Carotid ultracound
u	· ·	Lumbar puncture
4	5	Lumbar puncture
A	J-ye	ar-old gift sustains a cut on her face from broken glass. Initially, the injury appears superficial except for
as	sinal	area of deeper penetration just above the right eyebrow. within 4 days, the child develops periorbital
pa	in ar	in double vision. The tissues about the eye are crythematous, and the eye appears to bulge slightly. The
op		use is snarp, and no afferent pupiliary defect is apparent. Visual acuity in the affected eye is preserved.
W.	nich	of the following is the most likely diagnosis?
a	*	Orbital cellulitis
b	$\left \right $	Cavernous sinus thrombosis
С		Transverse sinus thrombosis

L	1	Ontion powritig
d		Optic neuritis
e		Diphtheritic polyneuropathy
An	oth	herwise healthy young woman has poorly responsive pupils that are dilated. Visual acuity is normal. A
car	eful	l neurological examination reveals bilaterally absent Achilles tendon jerks. Which of the following is the
mo	ost li	ikely diagnosis?
a		A cervical spinal cord tumor
b		A brainstem glioma
c		MS
d		A posterior communicating artery aneurysm
e	*	Benign tonic pupillary dilatation
A 3	32-1	year-old man from a rural area of southern Africa was recently brought to the United States by some of
his	fan	nily members who had emigrated previously. His family says that he was diagnosed with syphilis at age
16	and	has taken penicillin off and on over the years, but he never completed the prescribed course. Assuming
tha	t he	has neurosyphilis, which of the following is true with regard to the classic pupillary defect most likely to
be	obs	erved?
a		Completely normal (no defect)
h	*	Reacts poorly to light but accommodates well
C		Accommodates poorly but reacts well to light
d		Is ninnoint and regular in shape
u		Is fixed and dilated
6	60	is like and an and the set is the set the set of the se
A	-00	-year-old, fight-handed final under went heart transplantation 2 weeks ago for severe ischemic
cal fro		inyopatily. He had an unevention postoperative course and went nome after 1 week. He is now readmitted
		an outside hospital where he was admitted with headaches, increasing confusion, and a generalized
190	$2ure}{2/10}$	2. He relates that he has had difficulty seeing for several days. On examination, he has a blood pressure of
100	J/ 10 1. :	Motor and sensory functions are normal. An MDL shows second areas of T2 signal shows all in the
10		the and parietal labe white matter bilaterally. A diffusion weighted MDL assumes consisting to the
occ	21p11	and particular lobe while matter bilaterally. A diffusion-weighted wiki sequence, sensitive to the
Cha	inge	es of acute infarction, is negative. This patient's history, examination, and faboratory findings are most
cor	1515	tent with which of the following diagnoses?
a	Ŷ	Cyclosporine toxicity
b		Steroid psychosis
С		Occipital lobe infarction
d		Ischemic optic neuropathies
e		Retinal detachment
A 6	60-y	year-old, right-handed man presents with visual loss. About 2 weeks before, he began to notice difficulty
see	eing	the television. Within 1 week, he noticed that the inferior field of vision in the right eye was much worse
tha	n th	he top of his vision. Within a few more days, he noticed the bottom of the vision in his left eye worsen as
we	11. '	This has been painless. He has otherwise felt well, without headaches or cognitive changes. An
opł	htha	Imologist saw bilateral papillitis with white exudates of the nasal part of the discs. There is no history of
alc	oho	I use, and the patient has stopped smoking since his heart transplant. On examination, he appears well.
Blo	bod	pressure is 160/80 mm Hg; pulse is 100 beats per minute and regular. There are no carotid bruits. Pupils
are	eq	ual and reactive. Visual acuity is 20/400 OU, with central-inferior scotomas (left larger than right).
Ne	urol	logical examination is otherwise normal. An MRI scan with and without gadolinium contrast agent,
inc	ludi	ing orbital cuts, is negative, as is cerebrospinal fluid (CSF) examination. This patient's history,
exa	amiı	nation, and laboratory findings are now most consistent with which of the following diagnoses?
а		Cyclosporine toxicity
b		Occipital lobe lymphoma
с		Tobacco-alcohol amblyopia
d	*	Ischemic optic neuropathies
e		Retinal detachment
Th	ree	months after an episode of anterior ischemic ontic neuronathy a natient's vision is essentially unchanged
He	ie e	able to see in his superior fields but cannot drive Fundusconic examination at this time is likely to show
1 110	10 0	c. 1 c. 11 · 0

a		Papilledema
b	*	Optic disc pallor
c		Retinal exudates
d		Retinal vein enlargement
e		Drusen

A 30-year-old woman with diabetes mellitus and menstrual irregularities complains of chronic headaches with blurring of vision. On examination, she has a lantern jaw, prominent nose, spade-shaped hands, and prominent supraorbital ridges. She is slightly taller than other members of her family. For clinical scenario, select the most probable visual field discovered on tangent screen testing as depicted in the figure.

A	$\left(\right)$	
в	$\left(\right)$	
С	$\left(\right)$	
D	$\left(\right)$	
E	$\left(\right)$	
F	(
a		
b		
c	*	
d		
e		
A	17-v	ear-old woman with recurrent enuresis notes pain and visual problems in her left eve. Six months before

A 17-year-old woman with recurrent enuresis notes pain and visual problems in her left eye. Six months before the development of the visual difficulty, she had transient weakness in both legs for 2 days. Her parents noted slurring and slowing of her speech that appeared to persist long after the transient gait ataxia and leg weakness resolved. For clinical scenario, select the most probable visual field discovered on tangent screen testing as depicted in the figure.

в
c C C
b
A 40-year-old man sustains a gunshot wound to the back of the head. An MRI reveals extensive damage to the
left occipital lobe with sparing of the right occipital lobe. For clinical scenario, select the most probable visual
neid discovered on tangent screen testing as depicted in the figure.
в

c C C
E
a
b
A 51-year-old woman has progressive loss of visual acuity in her left eye. Over the course of 5 years, her acuity

has deteriorated from 20/20 to 20/An MRI of her brain reveals a large meningioma impinging on the left side of the optic chiasm. There is no associated hydrocephalus. For clinical scenario, select the most probable visual field discovered on tangent screen testing as depicted in the figure.

A	$\left(\right)$	
В	(
С	(
D	\langle	
E	\langle	
F	$\left(\right)$	
a		
b	*	
с		
d		
e		
A 6	5-v	ear-old man develops language problems with no loss of consciousness. He is found to have a recentive
anh	o y	and an MRI scan confirms an area of infarction in the left temporal lobe confined to structures above

aphasia, and an MRI scan confirms an area of infarction in the left temporal lobe confined to structures above and lateral to the temporal horn of the lateral ventricle. For clinical scenario, select the most probable visual field discovered on tangent screen testing as depicted in the figure.

B O
c C C
e *
An 89-year-old man has noticed that his hearing has gradually worsened with aging. The examining physician
applies a vibrating tuning fork to his right mastoid process. The moment the sound can no longer be heard, the
fork is held near the auditory meatus and the patient can again hear it. His deafness has probably developed
because of which of the following?
a Calcification of figaments stabilizing the ossicles
c * Neuronal degeneration
d Weakness of the stapedius muscle
e Granulation tissue in the middle ear
A 65-year-old diabetic woman has aphasia secondary to a stroke involving the inferior division of the left
middle cerebral artery. Her hearing is intact. Which of the following correctly reflects why dominant temporal
Iobe infarction will not produce complete deatness? a There is no temporal lobe representation for bearing
a There is no temporal lobe representation for hearing b * Each cochlear nucleus projects to both temporal lobes
c Deafness results with nondominant hemisphere damage
d Both thalamic and temporal lobe damage must occur
e Both brainstem and temporal lobe damage must occur
A 72-year-old man is having difficulty hearing. He is being tested with a tuning fork. If he has disease of the
middle ear, sound transmitted strictly by air conduction will be perceived as which of the following?
a Louder than that transmitted by bone conduction
b * Quieter than that transmitted by bone conduction

d Higher piched lan hat transmitted by bone conduction 4 Higher piched lan hat transmitted by bone conduction 2 Oscillating between high and low pitch 2 A 13-year-old girl has a severe case of mastoiditis. Despite treatment, she develops a fluent aphasia. Her aphasia. Is most likely the result of extension of the infection into which portion of the brain? a I Frontal lobe c * Cerebellam d Cocipital lobe c Cerebellam a I Frontal solution stationed in Iraq was exposed to an exceptionally loud nearby explosion. There was an initial severe loss of hearing followed by partial recovery. Which of the following best describes her hearing loss- a * High-tone sensorineural loss b Low-tone conductive loss Low-tone conductive loss d Centrel deafness Cerebellar attery d Superior cerebellar attery (PICA) Superior cerebellar attery (PICA) c Anterior inferior cerebellar attery (PICA) Anterior inferior cerebellar attery (PICA) c Anterior inferior cerebellar attery (PICA) Anterior inferior cerebellar attery (PICA) c Anterior inferior cerebellar attery (PICA) Anterior inferior cerebellar attery (PICA) d Anterior	с		Lower pitched than that transmitted by bone conduction
■ Oscillaring between high and low pitch A 13-year-old girl has a severe case of mastoidiiis. Despite treatment, she develops a fluent aphasia. Her aphasia is most likely the result of extension of the infection into which portion of the brain? a Frontal lobe c * d Parietal lobe c * d Occipital lobe c Cerebellum A 19-year-old soldier stationed in Iraq was exposed to an exceptionally loud nearby explosion. There was an initial severe loss of hearing followed by partial recovery. Which of the following best describes her hearing loss v High-tone conductive loss d Low-tone sensorineural loss e Central deafness A 70-year-old wonan is brushing her teeth when she has an intense sensation that the room is moving as if she e Non-corechellar attray b * a * A 10-year-old wonan is brushing her teeth when she has an intense sensation that the room is moving as if she e Central deafness A 70-year-old wonan is brushing her teeth when she has an intense sensation that the room is moving as if she e Posterior inferior cerebellar attrey (PICA) c <td>d</td> <td></td> <td>Higher pitched than that transmitted by bone conduction</td>	d		Higher pitched than that transmitted by bone conduction
A 13-year-old girl has a severe case of mastoiditis. Despite treatment, she develops a fluent aphasia. Her aphasia is most likely the result of extension of the infection into which portion of the brain? a Prontal lobe b Parietal lobe c * Temporal lobe d Cocipital lobe e * Temporal lobe d Occipital lobe e * Temporal lobe d Occipital lobe e * Temporal lobe d Occipital lobe e * Temporal lobe d Iow-tone sonorineural loss e High-tone conductive loss d Low-tone conductive loss d Central deafness e Central deafness a Superior cerebellar artery b Posterior inferior cerebellar artery (PICA) c Anterior spinal artery b Posterior cerebellar artery (PICA) c Posterior cerebellar artery (PICA) c Anterior inferior cerebellar artery (PICA) c Posterior cerebellar artery (PICA) c Anterior spinal artery d	e		Oscillating between high and low pitch
aphasia is most likely the result of extension of the infection into which portion of the brain? a Frontal lobe c * a Frontal lobe c * a Corepital lobe c Corepotention a) Pyear-old soldier stationed in Iraq was exposed to an exceptionally loud nearby explosion. There was an initial severe loss of hearing followed by partial recovery. Which of the following best describes her hearing loss: a) I. Low-tone conductive loss c High-tone conductive loss c Contral definess A) Superior cerebellar artery c None conductive loss c Anterior inferior cerebellar artery (PICA) c Anterior inferior cerebellar artery (PICA) c Anterior inferior cerebellar artery (PICA) d Actervetor loan has statr	Α	13-1	year-old girl has a severe case of mastoiditis. Despite treatment, she develops a fluent aphasia. Her
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□ □	u e		Cerebellum
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A /5-year-old woman is broking her teelu when she has an interes sensation that the room showing as it she were on a ship. Examination and testing reveal a cerebellar stroke. Cerebellar damage may be associated with severe vertigo if the tissue damaged is in the distribution of which of the following arteries? a Superior cerebellar artery b * b * cerebellar attery Interior cerebellar attery (AICA) d Anterior inferior cerebellar attery (AICA) d Anterior spinal attery A 62-year-old man has started getting a haircut every week. Whenever he lays his head back to have his hair washed, he has the sensation of spinning. With vertigo that develops on extreme extension or rotation of the head, the patient probably has insufficiency in which of the following? a Left subclavian artery c * d Internal carotid atteries bilaterally c * e Internal carotid atteries bilaterally c * d Internal carotid atteries bilaterally and usually last for approximately 45 minutes. The dizziness occurs about once per month, but may happen more frequently. There is often accompanying ringing and decreased hearing in one ear. Which of the following most accurately describes the early hearing loss in this disease? a Overall frequencies b Primarily over middle f	e	70 -	Central dealness
were vertige of a sing. Examination and esting reveal a cerebenar stoke. Cerebenar damage may be associated with severe vertige of the tissue damaged is in the distribution of which of the following arteries? a Superior cerebellar artery b * Posterior inferior cerebellar artery (PICA) c Anterior spinal artery e Posterior cerebellar artery (AICA) d Anterior spinal artery e Posterior cerebral artery A 62-year-old man has started getting a haircut every week. Whenever he lays his head back to have his hair washed, he has the sensation of spinning. With vertigo that develops on extreme extension or rotation of the head, the patient probably has insufficiency in which of the following? a Left subclavian artery b Internal carotid arteries bilaterally c * d Internal maxillary artery e Innominate artery A 45-year-old left-handed man has had recurrent attacks of "dizziness." He describes the sensation of feeling the room spinning. The episodes occur abruptly and usually last for approximately 45 minutes. The dizziness occurs about once per month, but may happen more frequently. There is often accompanying ringing and decreased hearing in one ear. Which of the following most accurately describes the early hearing loss in this disease? a Overall frequencies Primarily over high frequencies </td <td>A</td> <td>/9-y</td> <td>rear-old woman is brushing her teeth when she has an intense sensation that the room is moving as it she</td>	A	/9-y	rear-old woman is brushing her teeth when she has an intense sensation that the room is moving as it she
Severe verigo if the distribution of which of the following arefres? Superior cerebellar artery b * c Anterior inferior cerebellar artery (PICA) c Anterior spinal artery e Posterior cerebral artery (AICA) d Anterior spinal artery e Posterior cerebral artery A 62-year-old man has started getting a haircut every week. Whenever he lays his head back to have his hair washed, he has the sensation of spinning. With vertigo that develops on extreme extension or rotation of the head, the patient probably has insufficiency in which of the following? a Left subclavian artery b Internal carvidi arteries bilaterally c * c * d Internal carvidi arteries d Internal carvidi artery A 45-year-old left-handed man has had recurrent attacks of "dizziness." He describes the sensation of feeling the room spinning. The episodes occur abruptly and usually last for approximately 45 minutes. The dizziness occurs about once per month, but may happen more frequently. There is often accompanying ringing and decreased hearing in one ear. Which of the following most accurately describes the early hearing loss in this disease? a Overall frequencies b Primarily over middle frequencies c Primar	we	re o	in a snip. Examination and testing reveal a cerebellar stroke. Cerebellar damage may be associated with
a Superior cerebellar artery b * Posterior inferior cerebellar artery (PICA) c Anterior spinal artery e Posterior cerebral artery A 2-year-old man has started getting a haircut every week. Whenever he lays his head back to have his hair washed, he has the sensation of spinning. With vertigo that develops on extreme extension or rotation of the head, the patient probably has insufficiency in which of the following? a Left subclavian artery b Internal carotid arteries bilaterally c * Vertebrobasilar system d Internal maxillary artery e Innominate artery A 45-year-old left-handed man has had recurrent attacks of "dizziness." He describes the sensation of feeling the room spinning. The episodes occur abruptly and usually last for approximately 45 minutes. The dizziness occur about once per month, but may happen more frequently. There is often accompanying ringing and decreased hearing in one ear. Which of the following most accurately describes the early hearing loss in this disease? a Overall frequencies b Primarily over high frequencies c Primarily over high frequencies c Primarily over high frequencies d Primarily over high frequencies c Primarily over high frequen	sev	/ere	Semarian search allow arternes
b * Posterior inferior cerebellar artery (PICA) c Anterior inferior cerebellar artery (AICA) d Anterior spinal artery e Posterior cerebral artery A 62-year-old man has started getting a haircut every week. Whenever he lays his head back to have his hair washed, he has the sensation of spinning. With vertigo that develops on extreme extension or rotation of the head, the patient probably has insufficiency in which of the following? a Left subclavian artery b Internal carotid arteries bilaterally c * c Vertebrobasilar system d Internal maxillary artery e Innominate artery A 45-year-old left-handed man has had recurrent attacks of "dizziness." He describes the sensation of feeling the room spinning. The episodes occur abruptly and usually last for approximately 45 minutes. The dizziness occurs about once per month, but may happen more frequently. There is often accompanying ringing and decreased hearing in one ear. Which of the following most accurately describes the early hearing loss in this disease? a Overall frequencies b Primarily over high frequencies c Primarily over high frequencies d * Primarily over high frequencies d * Primarily over high frequencies	a 1	*	Superior cerebellar aftery
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d Anterior spinal artery e Posterior cerebral artery A 62-year-old man has started getting a haircut every week. Whenever he lays his head back to have his hair washed, he has the sensation of spinning. With vertigo that develops on extreme extension or rotation of the head, the patient probably has insufficiency in which of the following? a Left subclavian artery b Internal carotid arteries bilaterally c * Vertebrobasilar system d Internal maxillary artery e Innominate artery A 45-year-old left-handed man has had recurrent attacks of "dizziness." He describes the sensation of feeling the room spinning. The episodes occur abruptly and usually last for approximately 45 minutes. The dizziness occurs about once per month, but may happen more frequently. There is often accompanying ringing and decreased hearing in one ear. Which of the following most accurately describes the early hearing loss in this disease? a Overall frequencies b Primarily over high frequencies c Primarily over high frequencies d In virtually no patients A 52-year-old diabetic man on multiple medications develops vertigo. Which of the following may cause a toxic labyrinthitis? a Promethazine b Penicillin c Dimenhydrinate d Non	c		Anterior inferior cerebellar artery (AICA)
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washed, he has the sensation of spinning. With vertigo that develops on extreme extension or rotation of the head, the patient probably has insufficiency in which of the following?aLeft subclavian arterybInternal carotid arteries bilaterallyc* Vertebrobasilar systemdInternal maxillary arteryeInnominate arteryA 45 -year-old left-handed man has had recurrent attacks of "dizziness." He describes the sensation of feeling the room spinning. The episodes occur abruptly and usually last for approximately 45 minutes. The dizziness occurs about once per month, but may happen more frequently. There is often accompanying ringing and decreased hearing in one ear. Which of the following most accurately describes the early hearing loss in this disease?aOverall frequenciesbPrimarily over high frequenciescPrimarily over middle frequenciesdIn virtually no patientsA 52 -year-old diabetic man on multiple medications develops vertigo. Which of the following may cause a toxic labyrinthitis?aPromethazinebPenicillincDimenhydrinated* Acetylsalicylic acideNore of the above	Α	62-у	rear-old man has started getting a haircut every week. Whenever he lays his head back to have his hair
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b * Aspirin c Clucose Clucose d Diazepam E e Steroids A A 25-year-old man has multiple hyperpigmented lesions, each over 5 cm. Which of the following tumors is most likely to occur in this patient? a Meduloblastoma E b Acoustic schwannoma C c * Neurofibroma d Ependymoma Meduloblastoma A 30-year-old woman has progressive hearing loss. A magnetic resonance imaging (MRI) reveals bilateral acoustic schwannomas (neuromas). Which of the following is the most likely diagnosis? a Type I neurofibromatosis d Meningeal carcinomatosis d Multifocal meningiomas e Diseminated ependymomas People with traumatic head injury are highly susceptible to subsequent impaired sense of smell. The olfactory correx: in humans is located in which of the following locations? a Anterior perforated substance b Tataeal offactory gyrus (preprinform area) c Posterior third of the first temporal gyrus d Calcarine cortex d Angular gyrus e Calchilbood	a		Alcohol
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near to the reft, to the point that she tends to keep her near suff, looking forward. She becomes particularly	A)0-ÿ a +	the left to the point that she tends to keep her head stiff looking forward. She becomes particularly
dizzy when she lies down in had at night or turns onto her left side. She accessionally walkes up in the middle of		iu l(y has she lies down in had at night or turns onto har left side. She accessionally walkes we in the middle of
the night feeling dizzy. She had a similar avpariance 2 years are which lasted for 2 weaks and then	uiz the	د zy ۱	when she has down in ocu at high of turns onto her ten side. She occasionally wakes up in the initial of the state of the
The fight reening under, one had a similar experience 2 years ago, which lasted for 2 weeks and then	ule	mş	gn reening enzzy. She nae a sininai experience 2 years ago, willen fasteu foi 2 weeks alle titeli j

spontaneously resolved. She has otherwise felt well, and her hearing is normal. On examination, putting her head back and the left ear down elicits a feeling of dizziness and nausea associated with rotatory nystagmus, which lasts for 15 seconds and then resolves. Choose the condition that best matches the clinical scenario.

		Ménière disease
a h		Chalastastama
D		Violesteatoma
C	*	Vestibular schwannoma
a	*	Benign positional vertigo (BPV)
e		Aminoglycoside toxicity
A .	34-y	ear-old investment banker has intermittent episodes of vertigo associated with a feeling of fullness in his
rıg	ht e	ar. These last for several hours. He has had progressive hearing loss in the right ear. There are no other
syı	mpto	oms. He takes no medications and has no history of head trauma. Choose the condition that best matches
the		nical scenario.
a	*	Ménière disease
b		Cholesteatoma
С		Vestibular schwannoma
d		Benign positional vertigo (BPV)
e		Aminoglycoside toxicity
Α	47-у	year-old woman with a history of orthotopic heart transplantation 6 months ago has had a complicated
po	stop	erative course and was readmitted 3 months ago with pneumonia. She was treated with gentamicin,
va	ncon	nycin, and clindamycin, as well as her usual regimen of immunosuppressant medications, lipid-lowering
dru	ıgs,	and aspirin. Since then, she has had severe but stable disequilibrium, with inability to walk without a
car	ne. T	There has been no hearing loss or weakness. Choose the condition that best matches the clinical scenario.
a		Ménière disease
b		Cholesteatoma
с		Vestibular schwannoma
d		Benign positional vertigo (BPV)
e	*	Aminoglycoside toxicity
Α	72-1	vear-old man awakens with severe vertigo associated with nausea and vomiting. He is ataxic. Over the
nez	xt se	everal days, he develops numbness of the left side of his body, dysphagia, and hiccups. On examination,
he	has	s a left homonymous hemianopsia, left-sided sensory loss, dysmetria with the right hand, and no
we	akne	ess. He has had intermittent episodes of dizziness for the past month. Choose the condition that best
ma	itche	es the clinical scenario.
а		Ménière disease
b		Cholesteatoma
с		Vestibular schwannoma
d		Posttraumatic vertigo
e	*	Vertebral artery occlusion
A	57-x	vear-old woman began having weakness and trouble walking 1 year ago. Current examination findings
inc	sinde Sinde	e weak wasted muscles with spasticity fasciculations extensor plantar responses and hyperreflexia
W	hich	of the following is the most likely diagnosis?
3		Dorsal spinal root disease
h		Ventral spinal root disease
C C		Δr_{custe} fasciculus damage
d	*	Arcuate fasciculus damage
u	-	Motor neuron disease
		Motor neuron disease Purkinie cell damage
UVI VVI	hick	Motor neuron disease Purkinje cell damage of the following is the most likely spinel cord pathology ovident on this T1 weighted magnetic
W W	hich	Motor neuron disease Purkinje cell damage of the following is the most likely spinal cord pathology evident on this T1-weighted magnetic nea image (MPD2
e Wl res	hich	Motor neuron disease Purkinje cell damage of the following is the most likely spinal cord pathology evident on this T1-weighted magnetic nce image (MRI)?
WI res a	hich	Motor neuron disease Purkinje cell damage of the following is the most likely spinal cord pathology evident on this T1-weighted magnetic nce image (MRI)? Neoplasia
e Wl res a b	hich onai	Motor neuron disease Purkinje cell damage of the following is the most likely spinal cord pathology evident on this T1-weighted magnetic nce image (MRI)? Neoplasia Syrinx Information
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WI res a b c d	hich sonai	Motor neuron disease Purkinje cell damage of the following is the most likely spinal cord pathology evident on this T1-weighted magnetic nce image (MRI)? Neoplasia Syrinx Infarction Hemorrhage
e Wl res a b c d e	hich sonar *	Motor neuron disease Purkinje cell damage of the following is the most likely spinal cord pathology evident on this T1-weighted magnetic nce image (MRI)? Neoplasia Syrinx Infarction Hemorrhage Abscess

is initially a flaccid quadriplegic with areflexia. This areflexia and flaccidity usually evolve into hyper-reflexia and spasticity within which of the following time periods? 2-to-4 months a 1-to-2 months b * 3 days-to-3 weeks с d 1-to-3 hours 5-to-25 minutes e After biopsy resection of a lymph node in her neck, a 23-year-old woman notices instability of her shoulder. Neurological examination reveals winging of the scapula on the side of the surgery. During surgery, she probably suffered damage to which of the following? Deltoid muscle a * Long thoracic nerve b Serratus anterior muscle с d Suprascapular nerve Axillary nerve e A 25-year-old woman is involved in a motor vehicle accident. Among her injuries is a lumbar vertebral body fracture. Which of the following most likely contributed to this injury? Flexion а b Extension с Torsion d Spondylolisthesis Subluxation e A 35-year-old man injured his thoracic spine in a motor vehicle accident 2 years ago. Initially he had a bilateral spastic paraparesis and urinary urgency, but this has improved. He still has pain and thermal sensation loss on part of his left body and proprioception loss in his right foot. There is still a paralysis of the right lower extremity as well. This patient most likely has which of the following spinal cord conditions? * Brown-Séquard (hemisection) syndrome a Complete transection b Posterior column syndrome с d Syringomyelic syndrome Tabetic syndrome e A 19-year-old man injured his cervical spine in a swimming pool diving accident. After an initial severe quadriparesis, there was a rapid recovery of much motor function over several weeks. Which of the following would you expect to find in this patient 12 months from now? Fasciculations a Fibrillations b Flaccid paralysis с Hyporeflexia d * Spastic paralysis e A 92-year-old woman with known cervical stenosis has poor balance. The examination finding of impaired joint proprioception is due to dysfunction of neurons which decussate at what level? At the medulla а At the midbrain b At the pons с d At the thalamus Within one or two levels after entering the spinal cord e An 82-year-old woman with bilateral leg weakness has a greatly dilated abdominal aorta with a normal thoracic aorta. Which of the following is the most likely cause of this damage? Syphilis a Trauma b Chronic hypertension с Diabetes mellitus d * Atherosclerosis e

A 61-year-old man, who smokes five packs of cigarettes per day and has hypertension, had an abdominal aortic aneurysm repair 8 hours ago. The surgery went very well, and there were no reported perioperative complications. Now the patient is unable to move his legs and states that they are "numb." On examination, he has a flaccid paresis of both lower extremities and has impaired pinprick sensation to a T9 level bilaterally. Joint proprioception is normal. Which of the following is the most likely diagnosis in this case?

а		Cerebral stroke	
b		Conversion disorder	
с		Multiple sclerosis (MS)	
d		Spinal cord compression	
e	*	Spinal cord infarct	
A	52-y	ear-old man has been diagnosed with an abdominal aortic aneurysm. He is told that he is at high risk for	
ane	eury	sm rupture, which would almost certainly kill him. Although a surgical procedure could dramatically	
red	luce	this risk, the operation itself has risks, including postoperative paraplegia. The arteria radicularis magna	
(ar	tery	of Adamkiewicz) enters at approximately what level?	
a		C2 to C5	
b		C5 to C8	
с		T2 to T8	
d	*	T10 to L1	
e		L4 to S4	
In	a 5	6-year-old patient with a thoracic spinal cord hemisection, where would you expect the pain and	
ten	nper	ature abnormalities to begin?	
а		Exactly at the level of the lesion	
b		Four or five segments above the lesion	
с		Four or five segments below the lesion	
d		One or two segments above the lesion	
е	*	One or two segments below the lesion	
Tł	ne pe	eriumbilical area is innervated by which sensory dermatome?	
а		C6	
b		T2	
c		Τ5	
d	*	T10	
e		S 3	
Α	65-1	year-old man has had disrupted cerebrospinal fluid flow for several years, secondary to a thoracic disk	
her	niat	ion. This abnormal physiologic state has resulted in the formation of a cervical cystic lesion readily	
apr	oare	nt on MRI. Examination of this patient might reveal which of the following abnormalities?	
a		Third-nerve palsy	
b		Calf atrophy	
с		Charcot joints	
d	*	Atrophy of the intrinsic hand muscles	
e		Grasp reflexes	
A 3	36-v	ear-old man is being evaluated for left-hand weakness. On examination, it is readily apparent that he has	
atr	oph	y of the first dorsal interosseous muscle. This may indicate damage to which of the following spinal	
roc	ots?		
a		C5 and C6	
b		C6 and C7	
с		C7 and C8	
d	*	C8 and T1	
e		T1 and T2	
A 3	39-v	ear-old woman was involved in a head-on collision at approximately 40 miles per hour. She was wearing	
her	her seat belt, but still sustained a cervical cord injury from hyperflexion and extension. A cervical syrinx is		
mo	most likely to evolve in this patient if there has been which of the following?		
a		Intraspinal hyperthermia	
b		Intraspinal hypothermia	
·	· 1	80	

с		Intraspinal transient ischemia
d	*	Intraspinal contusion
e		Intraspinal demyelination
Α	19-y	vear-old man goes swimming in an inland pond in Puerto Rico. Within a few days, he notices itching of
his	s ski	n over several surfaces of his body. He is unconcerned until several weeks later when he develops
lar	ncina	ating pains extending down his legs and all of his toes. Over the course of just a few days, he develops
pa	rapa	resis and problems with bladder and bowel control. Within 1 week, he is unable to stand and has severe
uri	nary	retention. Which of the following is the most appropriate plan of action on an emergency basis?
a		Initiate anticoagulation
b		Perform sensory-evoked potential testing
с	*	Order an MRI scan
d		Place a cervical collar
e		Perform spinal angiography
A	mye	logram is performed on a patient with a subacute, worsening paraparesis. The cerebrospinal fluid (CSF)
an	d m	velogram are both unremarkable except for a slight increase in the CSF protein content. A computed
tor	nogi	raphy (CT) scan of the spine is unrevealing. Plain films of the spine are completely normal. An MRI of
the	e lun	nbar cord with gadolinium reveals patchy enhancement at about the L4-5 spinal cord level. Based on this
inf	orm	ation, which of the following is the most likely diagnosis?
а		An intraspinal hemorrhage
b		An extraparenchymal meningioma
с		An intraparenchymal ependymoma
d	*	A transverse myelitis
e		A svringomvelia
A	26-1	vear-old recent immigrant from Brazil presents to the hospital with a subacute, worsening paraparesis.
Th	e pa	tient had worked in the lumbar industry deep in the Amazon jungle. MRI of the spinal cord is abnormal.
and	d a	biopsy reveals widespread granulomas. In the midst of one granuloma is an ovoid mass with a spine
ext	tend	ing from one side. The pathologist interprets this as a parasitic ovum. If the pathologist is correct, which
of	the t	following is the most likely cause of the lesion?
а		Taenia solium
b		Entamoeba histolytica
с	*	Schistosoma mansoni
d		Schistosoma japonicum
e		Treponema pallidum
Α	72-1	vear-old man describes pain about the waist at the level of the umbilicus. The pain is often burning and
oc	casio	onally shooting. It does not extend down his legs, but he has noticed some weakness in his legs at the
tin	ne of	f the pain. With exertion, such as walking, he develops pain in his legs and a tingling sensation in his feet.
He	has	been taking aspirin for the discomfort, but has noticed no substantial change in the sensation. X-rays of
his	s spi	ne reveal no abnormalities. Pain and weakness have become increasingly frequent over the course of
sev	veral	months. Because the man has had urinary hesitancy and frequency in association with an enlarged
pro	ostat	e, he is advised to have a transurethral prostatectomy. A general anesthetic is given for the surgery. On
rec	cove	ring consciousness postoperatively, the man cannot move his legs and has persistent pain at the level of
the	e um	bilicus. His plantar responses are bilaterally extensor. Which of the following is the most appropriate
em	nerge	ency evaluation for this patient?
a		Voiding cystometrogram
b		Electroencephalogram (EEG)
с		Somatosensory evoked potentials (SSEPs)
d	*	Aortogram
e		Penile-brachial index (PBI)
Α	55-v	year-old man with hypertension and diabetes has a pure motor hemiparesis caused by a right thalamic
str	oke	The fiber tract affected by this syndrome decussates at what level?
a	*	At the junction of the medulla and the spinal cord
B		At the junction of the midbrain and the medulla
c		At the junction of the pons and the medulla
Ľ	1	The second of the poils and the medulia

d	At the thalamus	
e	Within one or two levels after entering the spinal cord	
Physic	al examination of a patient who has had a spinal cord infarct reveals preservation of some sensation in	
the fee	t. Which of the following would be the most intact modality?	
a *	Joint proprioception	
b	Pain	
с	Temperature	
d	Two-point discrimination	
e	Graphesthesia	
A 67-	year-old man who has smoked heavily for 45 years describes that with exertion, such as walking, he	
develo	ps pain in his legs and a tingling sensation in his feet. X-rays of his spine reveal no abnormalities. Pain	
and w	eakness have become increasingly frequent over the course of several months. The pain and weakness	
describ	bed by the patient with exertion is probably a manifestation of which of the following?	
a	Myotonia	
b	Myokymia	
c *	Spinal claudication	
d	Spondylolisthesis	
e	Spondylolysis	
A 67-	year-old diabetic man underwent repair of an abdominal aortic dissection. The procedure seemed to go	
well;	however, the patient awoke with an upper motor neuron pattern of weakness in both of his lower	
extrem	nities. Sensation for light touch and joint proprioception were relatively preserved. The CSF analysis	
associa	ated with this patient's condition is which of the following?	
a	An increase in the CSF gamma globulin content	
b	A depressed CSF glucose content	
c *	A protein content of greater than 45 mg/dL	
d	More than 100 white blood cells (WBCs) per µL	
e	More than 100 red blood cells (RBCs) per µL	
A pati	ent with a spastic paraparesis has an obvious aortic aneurysm discovered on aortography. The vascular	
surgeo	in consulting on the case recommends a bypass procedure. Preoperatively, the patient showed substantial	
recove	ry of leg strength and sensation, despite the persistence of bilateral Babinski (plantar extensor) signs. The	
patient	undergoes the surgery and is paraplegic postoperatively with dense loss of sensation of pain and	
temper	rature below the level of 1 A follow-up aortogram would be expected to reveal which of the following?	
a 1	Complete occlusion of the bypass graft	
b	Complete occlusion of the hypogastric artery	
C	Complete occlusion of the aorta below the tenth thoracic vertebra	
d *	No flow through the artery of Adamkiewicz	
e	No flow through the external iliac artery	
A 32-	year-old man living along the coast of Massachusetts presents with an acutely evolving left facial	
weakn	ess. Although he has no factal pain or numbress, he does nave a diffuse headache. He has no history of	
diabete on his	right leg that cleared sponteneously more than 1 month prior to the appearing joint pains and a transient rash	
On over	amination, he has mild neck stiffness and pain on his flavion of the extended log. This man is at highest	
risk fo	r which of the following causes of a unilateral facial weakness?	
115K 10	Human immunodeficiency virus (HIV) associated neuropathy	
a b *	I yme neuropathy	
C ·	Diphtheritic polyneuropathy	
d	Tuberculous meningitis	
u e	Schwannoma	
Δ 62.3	vear-old man is being treated for tuberculous meningitis with isoniazid and rifamnin. To avoid additional	
signs of neuronathy which of the following agents should be administered along with these antibiotics?		
a	Ceftriaxone	
h	Thiamine	
C	Frythromycin	
	Li yunomyoni	

d	Vitamin B ₁₂
e *	Pyridoxine
A pat	ient with a meningitis and facial weakness of unknown etiology had been given isoniazid and rifampin.
There	was no improvement, and she is treated with high-dose steroids. Within 1 week of the introduction of
predn	isone, she develops pain radiating down the back of her right leg and has difficulty dorsiflexing the right
foot.	This new symptom most likely represents which of the following disorders?
a *	Borrelia radiculopathy
b	Diabetic mononeuritis multiplex
с	Isoniazid neuropathy
d	Rifampin toxicity
e	Tuberculous radiculopathy
A 12	year-old boy with Lyme disease and bilateral facial weakness is being treated with a cephalosporin. The
child	's facial strength improves, but he notices twitching of the left corner of his mouth whenever he blinks his
eye.	This involuntary movement disorder is probably an indication of which of the following?
a	Sarcoidosis
b	Recurrent meningitis
c *	Aberrant nerve regeneration
d	Mononeuritis multiplex
e	Cranial nerve amyotrophic lateral sclerosis (ALS)
A 25	year-old woman is being examined by her physician. The knee jerk is being tested. The patellar tendon
reflex	involves sensory fibers of the femoral nerve that originate in which of the following spinal segments?
a	S3 to S4
b	S2 to S3
С	S1 to S2
d	L4 to L5
e *	L2 to L3
A 51	-year-old factory worker has noticed progressive weakness over the past year. Examination and testing
revea	l a painless largely motor peripheral neuropathy. Which of the following agents is most likely to be
etiolo	gic in this case?
a *	Lead
b	Manganese
С	Thallium
d	Cyanide
e e	Mercury
A 29	year-old woman presents with weakness in several muscles in different limbs. The pattern is lower motor
neuro	n and does not fit with any particular peripheral, plexus, or root localization. Which of the following is the
most	Disketes mellitus
a [*]	Diabetes mellitus
0	Serecidesia
с 	Sustemia lunus anuthematosus
u	Deriverteritis nodese
e A vo	Periarteritis nodosa
A ver	y thin enderry woman is having reft-sided neck pain. Her faining physician attempted to give her a deep
wright	from Which of the following is the probable site of injection?
wilsu a *	Posterior cord of the brachial pleyus
h	Medial cord of the brachial plexus
	Lateral cord of the brachial plexus
d	T1 spipal root
e	C5 spinal root
A 17	vear-old woman has weakness of left shoulder abduction and elbow flexion with good strength in hand
and f	orearm muscles. Which of the following is most likely to cause an injury limited to the upper brachial
plexu	s?
	- ·

a Node dissections in the axilla	
b Pancoast tumor	
c * Birth trauma	
d Dislocation of the head of the humerus	
e Aneurysm of the subclavian artery	
The most prominent areas of degeneration with Friedreich disease are in which of the following areas?	
a Cerebellar cortex	
b Inferior olivary nuclei	
c Anterior horns of the spinal cord	
d * Spinocerebellar tracts	
e Spinothalamic tracts	
A 20-year-old ataxic woman with a family history of Friedreich disease develops polyuria and excessive t	nirst
over the course of a few weeks. She notices that she becomes fatigued easily and has intermittently blu	rred
vision. Which of the following is the most likely explanation for her symptoms?	
a Inappropriate antidiuretic hormone	
b * Diabetes mellitus	
c Panhypopituitarism	
d Progressive adrenal insufficiency	
e Hypothyroidism	
A 27-year-old, right-handed man has 1 week of progressive ascending weakness. Examination confirms a lo	wer
motor neuron pattern, and cerebrospinal fluid (CSF) protein is elevated. In retrospect, the weakness	was
preceded by a severe episode of diarrhea. Which of the following is the most frequent preceding infec	tion
before the onset of Guillain-Barré syndrome?	
a HIV	
b Cytomegalovirus (CMV)	
c Chlamydia psittaci	
d Mycoplasma pneumoniae	
e * Campylobacter jejuni	
Friedreich disease has been consistently linked to a defect on which of the following chromosomes?	
a Chromosome 21	
b * Chromosome 9	
c Chromosome 6	
d The Y chromosome	
e The X chromosome	
A young couple comes to your office because of a family history of Friedreich ataxia. They are in the process	s of
family planning and have several questions regarding the disease. If a patient with Friedreich ataxia	has
children, at what stage of life would a child be expected to become symptomatic if the disease was inherited	?
a Neonatal period	
b * Juvenile period	
c Early adulthood	
d Middle age	
e Senescence	
A 17-year-old man presents with 10 days of progressive tingling paresthesias of the hands and feet followed	1 bv
evolution of weakness of the legs two evenings before admission. He now has back pain. He has a history	ofa
diarrheal illness 2 weeks prior. On examination, he has moderate leg and mild arm weakness, but respira	torv
function is normal. There is mild sensory loss in the feet. He is areflexic. Mental status is normal. Spinal f	luid
analysis in this case is most likely to show which of the following?	
a No abnormalities	
b * Elevated protein level	
c Elevated white blood cell (WBC) count	
d Elevated pressure	
e Oligoclonal bands	
The peripheral neuropathy that would be expected to be seen in a patient with Friedreich disease develor	s in

par	t be	cause of degeneration in which of the following?
a	*	Dorsal root ganglia
b		Spinocerebellar tracts
с		Anterior horn cells
d		Clarke column
e		Posterior columns
A	23-y	year-old woman develops progressive weakness of the extremities over the course of 1 week. She has
fur	ther	evolution of weakness involving muscles of the arms, face, and respiration. Eventually, she is intubated
and	l pla	aced in the intensive care unit. Nerve conduction and electromyogram (EMG) studies show widespread
per	iphe	eral demyelination. Therapy with which of the following may help to speed recovery?
a		Corticosteroids
b		Cyclophosphamide
с	*	Plasma exchange
d		Albumin infusions
e		3.4-Diaminopyridine
A	26-1	vear-old woman develops acute onset of left shoulder pain. Over the following week, she develops
wea	akno	ess in the proximal left arm and mild sensory loss. On examination, she has scapular winging and marked
wea	akno	ess of the left deltoid, biceps, and triceps muscles. The right side is normal, as are her legs. Mild sensory
los	s in	the upper arm is found. She has lost her biceps and triceps reflexes. Her brother recently had a similar
pro	blei	m. Match clinical scenario with the most likely diagnosis.
a		Charcot-Marie-Tooth disease
b		Fabry disease
c		Riley-Day disease (familial dysautonomia)
d	*	Parsonage-Turner syndrome (brachial plexonathy)
e		Meralgia paresthetica
A 4	-ve	ar-old Jewish child has a history of poor sucking at birth, as well as multiple respiratory infections during
chi	ldho	bod. He is of short stature and has not been able to eat due to progressive vomiting. On examination,
stre	ngt	h is normal, but he is hyporeflexic. There is sensory disassociation, with loss of pain and temperature
sen	sati	on and preservation of tactile and vibratory sense. The corneas are ulcerated, pupils do not react, and he
has	ort	hostatic hypotension. Match clinical scenario with the most likely diagnosis.
a		Charcot-Marie-Tooth disease
b		Fabry disease
с	*	Riley-Day disease (familial dysautonomia)
d		Parsonage-Turner syndrome (brachial plexopathy)
e		Meralgia paresthetica
A	56-1	vear-old woman has slowly worsening numbress and paresthesias of the hands and feet, as well as
pro	xim	al muscle weakness. Bulbar muscles are normal. An EMG shows multifocal conduction block, slowing
of	nerv	ve conduction, and minimal loss of amplitude of muscle action potentials. CSF examination shows an
elev	vati	on in protein to 260, but no increase in the number of cells. Match clinical scenario with the most likely
dia	gno	sis.
a		Charcot-Marie-Tooth disease
b		Fabry disease
с	*	Chronic inflammatory demyelinating polyneuropathy (CIDP)
d		Acute intermittent porphyria
e		Reflex sympathetic dystrophy
A 4	-0-v	rear-old police officer is given pain medications after a femoral fracture. One week later, he presents with
con	fus	ion, psychosis, abdominal pain, and vomiting. On examination, he is tachycardic, hypertensive, and
feb	rile	He appears delirious. His arms are weak, sensation is relatively preserved, and he is areflexic. His wife
rela	ites	that he had similar episodes before, when he was in the military. Match clinical scenario with the most
like	elv a	diagnosis.
a		Charcot-Marie-Tooth disease
b		Fabry disease
c		Chronic inflammatory demyelinating polyneuropathy (CIDP)

d	*	Acute intermittent porphyria
e		Reflex sympathetic dystrophy
A	49-y	ear-old dentist has a pins-and-needles sensation in her feet developing over the course of 3 months.
Re	sult	s of her serum chemistries, blood count, and urinalysis are all normal, but her hematocrit is at the lower
lim	nit o	f normal. She has a positive Lhermitte sign (electrical pain down the back on flexion of the neck). EMG
and	1 ne	rve conduction studies reveal slowed conduction in her sensory nerves. There is no family history of
sin	nilar	problems. For clinical scenario, select the most likely condition.
а		Diabetes mellitus
b		Sarcoidosis
с	*	Nitrous oxide poisoning
d		Gout
e		Amyloid
A	25-v	ear-old woman with a prior history of visual loss in the left eve and a spastic gait develops impaired pain
and	l ter	nperature perception in her feet. She was diagnosed with multiple sclerosis (MS) shortly after her visual
los	s H	er left fundus reveals ontic atronhy, and her facial movements are asymmetric. Chest x-ray reveals large
hile	s. 11 ar ly	mph nodes. Mammogram reveals no apparent carcinoma. For clinical scenario, select the most likely
	ur 13 nditi	on
201		Diabetes mellitus
a b	*	Sarcoidosis
0		Thiamine deficiency
с д		Puridovino deficionev
u o		Existence disease
e ^	41	Fileureich disease
A	41-	year-old nomeless man has a severe burning sensation in his feet. vibration, position, pain, and
ten	iper	ature senses are all impaired in both of his lower extremities up to the level of the midcall. He admits to
ari	nkir	Ig 1 pt of vodka daily. He was operated on in the past for bleeding from esophageal varices. For clinical
sce	nari	o, select the most likely condition.
a		Diabetes mellitus
b		Sarcoldosis
c	*	Thiamine deficiency
d		Pyridoxine deficiency
e		Friedreich disease
A	55-	year-old alcoholic man is brought in to the emergency room in a confused but nonagitated state.
Sig	gnifi	cant examination findings include ophthalmoparesis, nystagmus, and ataxia. Emergency administration
of	whie	ch of the following medications is appropriate in the treatment?
a		Glucose
b		Magnesium sulfate
с		Pyridoxine
d		Cyanocobalamin
e	*	Thiamine
Α	66-y	rear-old woman presents with weakness worsening over the past 3 hours. The weakness began in her
fac	e, b	ut now involves most of her body. She had made her own jam several months before and tasted a sample
of	it ea	arly this morning prior to discarding it because it smelled rancid. On further electrophysiologic testing,
wh	ich	of the following abnormalities would be most characteristic of this patient's illness?
a		Abnormal visual evoked responses (VERs)
b		Abnormal brainstem auditory evoked potentials
С	*	Posttetanic potentiation of the compound muscle action potential
d		Conduction block
e		Fibrillation potentials
A	5-m	onth-old child is brought to the emergency room after having a generalized seizure at home. She is found
to	hav	e a temperature of 5°F (16°C). Which of the following correctly reflects why this patient should be
inv	vesti	gated with a spinal tap?
a		All febrile seizures justify spinal taps
h		Most febrile seizures are due to bacterial infections
0		

c		Febrile seizures cause increased intracranial pressure that must be relieved by withdrawing cerebrospinal fluid (CSF)
d		Intrathecal antiepileptics must be given
e	*	Children this age may have meningitis with no manifestations other than fever and seizures
A	17-v	ear-old girl presents with subacute mental status change and left arm weakness. She had a viral illness 1
we	ek a	and now a diagnosis of acute disseminated encephalomyelitis (ADEM) is made ADEM is a white
ma	tter	disease that is distinguishable from multiple sclerosis (MS) by its being which of the following?
a	*	Monophasic
b		Rapidly lethal
c		Associated with brainstem and spinal cord disease
d		Associated with magnetic resonance imaging (MRI) lesions, which may resolve
e		Associated with inflammatory changes in the brain
A	26-v	rear-old woman with low back pain is seen in the clinic. She states that her pain began acutely 2 weeks
200	20 y Nwl	nile lifting a couch An MRI was performed in the emergency room and she was told that she has a
"sl	inne	d disk" and sent home. The nations wants to know why surgery was not done immediately to correct the
nrc	hlei	m Acute herniation of an intervertebral disk will require emergency surgery in which of the following
cir	cum	stances?
a		The disk is laterally herniated at C
b		The disk is causing radicular pain
c	*	The cauda equina is being crushed
d		A thoracic disk is involved
e		The filum terminale is displaced
Δ	57-x	rear-old man has been having nightly unilateral throbbing headaches. They have been occurring daily
for	the	past week. The patient recalls having had a similar headache 5 years ago that lasted for several weeks
Th	e na	past week. The patient recars having had a similar headache 5 years ago that lasted for several weeks.
nrc	o pe mhv	laxis has been partially successful. Which of the following is the most effective means of aborting this
tvn	e of	havis has been partially successful. Which of the following is the most effective means of aborting this been partially successful.
a a	*	Inhaled 100% oxygen
h		Sublingual nitroglycerin
c		Oral methysergide
d		Oral propranolol
e		Dihydroergotamine suppository
A	32-x	year-old woman with alcoholism and cocaine use dating back at least 10 years comes to the emergency
roc	om a	ofter 48 hours of recurrent vomiting and hematemesis. She reports abdominal discomfort that preceded
the		miting by a few days. For at least 36 hours, she has been unable to keep ethanol in her stomach
Int	rave	mous fluid replacement is started while she is being transported to the emergency room and while in the
em	erge	ency room she describes progressive blurring of vision. Over the course of 1 hour she becomes
inc	reas	ingly disoriented ataxic and dysarthric. Which of the following is the most likely explanation for her
ran	id d	eterioration?
a		Dehydration
b		Hypomagnesemia
c	*	Wernicke encephalopathy
d		Hypoglycemia
e		Cocaine overdose
A	27-v	ear-old man undergoes general anesthesia for a hernia repair. As the anesthesia begins, his jaw muscles
ten	se	and he becomes generally rigid. He becomes febrile tachycardic and tachypneic. Intravenous
adı	nini	stration of which of the following agents may be lifesaving?
a		Suxamethonium
h		Nitrous oxide
C		Succinylcholine
d	*	Dantrolene
e	┝─┤	Phenobarbital
	57 1	i nervou onai
А.	<i>у</i> - у	car-ord woman with a motory of diabetes mentus and hyper-diviolation presents to the emergency room

with a history of 2 days of vertical and horizontal diplopia. There is moderate orbital pain. On examination, her left eye is deviated downward and outward. It can be passively moved medially and upward. The pupils both react normally. Which of the following is the most likely etiology of her diplopia?

a Hyperthyroidism b Pibabees mellius c Cerebral aneurysm d Orbital pseudotumor e Orbital pseudotumor a Orbital pseudotumor e Orbital pseudotumor a Orbital pseudotumor a Orbital pseudotumor a Conjunctivitis b presenter cycle streident who examines her immediately afterward notices that she has 2-mm anisocoria and sends her to the emergency room. She feels well, is alert and talkative, and has no motor dysfunction. On examination, the emergency room. Which of the following is the most likely etiology of the woman's anisocoria? a Conjunctivitis b b Traumatic third-nerve palsy c c Carotid arery dissection d d Poglilary sphineter injury e c Carotid aneury dissection d d Poglilary sphineter injury e c Carotid aneury dissection d d * Consort bo pinch of the extremities. Which of the following is the most appropriate classification of this patient's heads injury? a Mininal <th>100</th> <th>ict II</th> <th>ormany: which of the following is the most fixery euclogy of her diplopha:</th>	100	ict II	ormany: which of the following is the most fixery euclogy of her diplopha:
b Notetes mellitus c Cerebral aneurysm d Orbital pseudotumor c Cerebral aneurysm d Orbital infection A 33-year-old operating room nurse accidentally has blood splashed in her eyes during a procedure. The surgical resident who examines her immediately afterward notices that she has 2-mm anisocoria and sends her to the emergency room physician recognizes that the iris of the eye with the smaller pupil is pale blue, whereas that of the other eye is brown. Which of the following is the most likely etiology of the woman's anisocoria? d Conjunctivitis D Traumatic third-nerve palsy c Carorid arrey dissection d Valuer of an is brought into the emergency room after a motorcycle accident in which he was not wearing a helmet. The computed tomography (CT) scan shows bifrontal hemorthagic contusions. The Clasgow coma Scale (CCS) score is He has no verbal response, opens his eyes to painful simulation only, and shows a flexion response to pinch of the extremities. Which of the following is the most appropriate classification of this patient's head injury? a Minimal b Minimal c Vegetative Two days after a motor vehicle accident, you are examining a 19-year-old right-handed man. He has a severe headache and 'raccoon eyes.'' The presence of periorbital cechymosis in a patient with traumatic head injury sholub b	a		Hyperthyroidism
c Cerebral aneurysm d Orbital pseudotumor e Orbital infection A 33-year-old operating room nurse accidentally has blood splashed in her eyes during a procedure. The surgical resident who examines her immediately afterward notices that she has 2-mm anisocoria and sends her to the emergency room. She feels well, is alert and talkative, and has no motor dysfunction. On examination, the emergency room physical necognizes that the inis of the eye with the smaller pupil is pale blue, whereas that of the other eye is brown. Which of the following is the most likely etiology of the woman's anisocoria? a Conjunctivitis b Traumatic third-nerve palsy c Caroid antery dissection d Pupillary sphincter injury c Congenital A 26-year-old man is brought into the emergency room after a motorcycle accident in which he was not wearing a hefmet. The computed tomography (CT) scan shows bifrontal hemorrhagic contusions. The Glasgow Coma Scale (GCS) score is He has no verbal response, opens his eyes to painful stimulation only, and shows a flexion response to pinch of the extremities. Which of the following is the most appropriate classification of this patient's head injury? a Moderate d * Severe e Vegetative Two days after a motor vehicle accident, you are examining a 19-year-old right-handed man. He has a severe headache and 'raccoone	b	*	Diabetes mellitus
d Orbital pseudotumor e Orbital infection A 33-year-old operating room nurse accidentally has blood splashed in her eyes during a procedure. The surgical resident who examines her immediately afterward notices that she has 2-mm anisocoria and sends her to the emergency room physician recognizes that the iris of the eye with the smaller pupil is pale blue, whereas that of the other eye is brown. Which of the following is the most likely etiology of the woman's anisocoria? a Conjunctivitis b Traumatic third-nerve palsy c Carojunctivitis b Traumatic third-nerve palsy c Carojunctivitis b Papillary sphincter injury e * Congenital A 26-year-old man is brought into the emergency room after a motorcycle accident in which he was not wearing a helmet. The computed tomography (CT) scan shows bifrontal hemorrhagic contusions. The Glasgow Coma Scale (GCS) score is He has no verbal response, opens his eyes to painful stimulation only, and shows a flexion response to pinch of the extremities. Which of the following is the most appropriate classification of this patient's head injury? a Minimal b Midd c Vegetative Two days after a motor vehicle accident, you are examining a 19-year-old right-handed man. He has a severe headache and "raccoon eyes." The presence of periorbital ecchymosis in a patient with trauma	С		Cerebral aneurysm
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hormone replacement. There is no history of exposure to ticks or recent travel. On examination, she nods her	de	velo	ps diplopia, dysarthria, and ultimately anarthria. She has a history of hypothyroidism and is on thyroid
	ho	rmo	ne replacement. There is no history of exposure to ticks or recent travel. On examination, she nods her

head appropriately to questions, and she can write. Forced vital capacity is 500 mL, and she is intubated. She is afebrile, tachycardic, and normotensive. Bilateral ptosis and ophthalmoparesis are present; pupils are 6 mm in diameter and minimally reactive. Facial sensation is intact. Bifacial paresis is present, and the tongue is weak. Extremity muscle bulk and tone are normal, and proximal strength is 4/5 in her arms and legs. Finger and toe movements are rapid and symmetric. Plantar responses are flexor. Blood tests are normal. Motor nerve conduction studies (NCS) show low-amplitude compound muscle action potentials with normal velocities. Sensory nerve action potentials are normal. Which of the following organisms is most likely responsible for this woman's syndrome?

a	Cytomegalovirus (CMV)

- b Treponema pallidum
- c Chlamydia pneumoniae
- d * Clostridium botulinum
- e Campylobacter jejuni

A 66-year-old woman presents with fever and a generalized convulsion. MRI shows high T2 signal in the medial temporal lobes (R > L). Lumbar puncture is performed and routine CSF analysis indicates 100 lymphocytes/µL, 15 red blood cells (RBCs), xanthochromia, and a mildly elevated pressure. Which of the following is the most appropriate treatment for this patient?

- a Dexamethasone
- b Amphotericin B
- c Gamma globulin
- d Methotrexate
- e * Acyclovir

A 41-year-old right-handed woman has had 1 day of progressive weakness. The symptoms began in her extraocular muscles and then spread quickly to involve other muscles in her face before her entire body felt weak. The history is significant for the recent ingestion of home-canned fruit. The underlying mechanism of this disease is which of the following?

- a Antibodies to the acetylcholine receptor
- b Antibodies to the calcium receptor
- c Depolarizing blockade of the potassium channel
- d * Impaired formation of acetylcholine-laden vesicles
- e Toxic muscle necrosis

A 22-year-old woman presents to the emergency room with an episode of acute painful loss of vision in the right eye. On examination, there is a right afferent pupillary defect and papillitis on funduscopic examination. She has no history of neurological symptoms. An MRI shows a few foci of T2 signal increase in a periventricular distribution. Which of the following is the most appropriate treatment for presumed optic neurities in this patient?

a		Oral prednisone	
b	*	Intravenous methylprednisolone	
c		Cyclophosphamide	
d		Plasma exchange	
e		Intravenous gamma globulin	
A	A previously healthy 23-year-old woman has had 2 weeks of blurry vision in her left eye. Multiple tests,		
inc	including visual evoked potentials, are performed. The diagnosis of optic neuritis is made. What is the		
app	approximate likelihood that this patient will eventually develop MS?		

upp	104	innate incomode that this patient will eventually develop who.	
a		0%	
b		5%	
с		25%	
d		40%	
e	*	75%	

A 27-year-old man, who 6 months ago had optic neuritis, presents to the emergency room describing a brief, sharp pain radiating into the left side of his face. The vision in his eye has largely recovered, and there is no evidence of sensory loss on the right side of his face. He describes the pain as ice pick–like and grimaces with each attack. He is most likely to have symptomatic relief from his facial pain if he is managed with which of the

fol	low	ing drugs?
a		Aspirin
b		Acetaminophen
c		Ibuprofen
d	*	Carbamazepine
e		Codeine
A	pati	ent who has been diagnosed with MS has had recurrent episodes of bed wetting (enuresis) over the
pre	ced	ing month. This should decrease with the administration of which of the following drugs?
<u>r</u>	*	Oxybutynin
b		Phenytoin
c		Carbamazepine
d		Baclofen
e		Methacholine
$\frac{0}{0}$	er f	he course of a few months, a natient with MS develops nainful spasticity in her left leg that interferes
wit	сг t. h e	stension of her leg. The spasticity progresses to the point of interfering with her sleep. Which of the
fol		ing is the most appropriate treatment for this nation?
3		Imigramine
h		Phenytoin
0		Carbamazanina
с 	*	Realofan
u		Daciolell
e ^	17.	Methacholine
A	4/- <u>-</u>	year-old main arrives at the emergency room in a coma. His whe reports that he developed shaking
hut	oven	here is and abhormal breathing sounds in the initiate of the hight. His shaking and the sounds woke her,
oth	oru	is a Examination in the amergency room reveals an unresponsive man who exhibits generalized
		sions every 10 minutes. He is afabrile and incontinent of urine. The physician on call believes the patient
	n of	stons every 10 minutes. The is alconne and incontinent of urme. The physician of can believes the patient atus apilapticus and should consequently immediately order which of the following?
15 1	n st	An introventricular drain to monitor introgranial pressure
a h		An intraventificular drain to monitor intractanial pressure
0	*	Cochemonarine by page sectors tube
C d		Caroamazepine by hasogastric tube
a		Calegrantin has needed as the last of the
e D		Gabapentin by nasogastric tube
	ring	g the initial treatment of a patient with status epilepticus, a nurse reports that the patient has just lost
	aae	r control and that the urine appears darker than normal. The responsible physician examines the bed
sne	ets	and agrees with the nurse's assessment. The physician should immediately institute which measure?
a 1		Order placement of an indwelling urinary catheter
b		Order methacholine to regulate bladder emptying
c		Request a surgical consultation in anticipation of an exploratory laparotomy
d	*	Order placement of a condom catheter
e		Request a urologic consultation to assess the incontinence
A	64-y	year-old man presents to the emergency room with convulsive seizures. A precontrast CT of the brain
rev	eals	s a hemorrhagic mass in the left frontal lobe, but there is little apparent shift of brain structures and no
ver	itric	cular enlargement. Two hours after the patient's seizures have stopped, his blood pressure is still elevated
at	180/	100 mm Hg, and his pulse is slow at 50 beats per minute. Although the patient is still unconscious, he
app	bear	s to have decreased tone on the right side of his body. The physician should request which of the
fol	low	ing interventions?
a		Intravenous clonidine to lower the blood pressure
b		Placement of a cardiac pacemaker to manage the bradyarrhythmia
c	*	Neurosurgical consult
d		Placement of a ventriculoperitoneal shunt
e		Intravenous tissue plasminogen activator (TPA)
A :	52-у	year-old woman presented to the emergency room with a new-onset aphasia. A hemorrhagic left frontal
ma	ss i	s apparent on head CT. The neurosurgical consultant decides to explore the site of the hemorrhage and

evacuate the mass that has collected there. He sends tissue from the margin of the blood clot for a frozen section analysis by the pathologist. The tissue is felt to be Kernohan grade IV astrocytoma. Which of the following postoperative therapies is most reasonable?

2	*	Cranial radiotherany
h h		Intravenous methotrevate
C C		Intravenous fludarabine
d		Intravenous cyclophosphamide
u e		Intravenous daunorubicin
	56_v	nitavenous daunorablem
n_0	mer	dical history and takes no medications. He is alert and speaking but has no awareness of any deficit. He
has	a r	ight gaze deviation dense left face and arm plegia and mild left leg weakness. When asked to raise his
leo	s h	e lifts only the right leg. He has reduced blink to threat from the left side. Which of the following is the
mc	s, n st a	ppropriate initial diagnostic step?
a	*	Head CT
h		Cerebral angiogram
C		C-spine MRI
d		Positron emission tomography scan
e		Skull x-rays
Δ	63-v	skull x-rays
201	utelv	$\sqrt{45}$ minutes ago. Blood pressure is 160/80 mm Hg. coagulation studies are normal, and there is no recent
his	torv	of bleeding. A head CT scan shows no evidence of intracranial hemorrhage. Which of the following is
the	mo	st appropriate therapy at this point?
a	*	Intravenous rTPA
h		Intravenous streptokinase
C		Oral aspirin
d		Intravenous henarin
u A		Intravenous mennitol
Vo	coor	initiation $(S \land U)$
v a Nii	.susp mod	basin and ischemic stroke are inequent complications of aneurysmar subaraction inemotion age (SATI).
dia	anou	sis of SAH. What is the most likely mechanism?
010		Drevention of segmental arterial vasospasm by relaying arterial smooth muscle
a h		Paducad savarity of SAH associated myceordial shock by diminishing cardiac afterland
0	*	Reduction of pathologic calcium influx in ischemic calls, inhibiting apoptosis
с 		Vasodilation of the corobral vasculature facilitating passive perfusion
u		All analysis are correct
e 	$\frac{1}{2}$	All allowers are correct
A	20-y	to the begnital, the national is obtained. She received several desses of nelevone, but her mental status
fai	ivai le to	improve On examination, she is unresponsive except for decorticate posturing in response to povious
1 al	nule	ation Brainstem reflexes are intact. Diffusion weighted magnetic resonance imaging (MPI) is performed
5tn 1 v	nuic	(inter (Figure). What is the most likely mechanism of this patient's neurologic impairment?
1 V 9	VUUK	Acute spongiform encephalopathy from heroin inhalation ("chasing the dragon")
a h		Bacterial meningitis
0		Bilataral middle corebral artery inforctions
d		Bilateral watershed inferences
u	*	Hupovia
с л	<u> </u>	Hyponia war old man collapses in a public place. Emergency medical service (EMS) nerconnel errive effer
A	04-) 2007	imately 7 minutes begin cardionulmonary resuscitation, and apply a defibrillator successfully to treat
ventricular fibrillation. Due to the quick EMS response and excellent inpotient care for his cardiac discass, the		
nat	ient	achieves a good recovery. If the patient were to be examined 6 months after the event, what neurologic
pai dat	ficit	attributable to the cardiac arrest is most likely to be encountered?
a		Atavia
a h	$\left \right $	Lower extremity spasticity (spastic diplegia)
0	\vdash	Designed extremity spastery (spaste upregra)
U		rempilerar range moet sensory neuropaury

d	*	Short-term memory impairment
e		All answers are correct
A	38-y	vear-old man presentsto the emergency department complaining of an episode of left arm heaviness and
clu	msi	ness that lasted for approximately 5 minutes. The patient is no longer concerned about the event.
Ho	wev	ver, he explains that he has not felt well for the past 2 days and stayed awake with chills the night before.
He	is s	ure the event was caused by being tired. The neurologic examination is normal. The general examination
is 1	iota	ble for a mild heart murmur, which the patient states has been present since childhood, and some scarring
on	the	forearms and antecubital areas. The patient reports no family history of neurologic disease. Based on the
inf	orm	ation presented, which mechanism of cerebral ischemia appears to be most plausible?
а	*	Cardioembolism
b		Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy
		(CADASIL)
с		Cerebral vasculitis
d		Lipohyalinosis
e		Mitochondrial encephalomyopathy lactic acidosis and stroke-like episodes (MELAS)
Th	e pa	tient is diagnosed with infectious endocarditis, and an appropriate antibiotic regimen is started. The next
day	y, he	e reports that he is experiencing some abnormal difficulty reading the newspaper, which had not been a
pro	ble	m for him 5 minutes prior when he set the paper down to use the bathroom. A second evaluation reveals
tha	t he	has no problem speaking or understanding speech or writing, but he is unable to read. He also has a right
ho	mon	ymous hemianopia. What is the likely location of his lesion?
a		Left anterior choroidal territory
b		Left inferolateral frontal lobe
c	*	Left occipital lobe extending to the splenium of the corpus callosum
d		Left superior temporal lobe
e		All answers are incorrect
Sev	vera	l cerebrovascular disease syndromes include cognitive and psychiatric findings. Which of the following
cor	nditi	ons does not have cognitive dysfunction as a prominent characteristic?
a		Behçet's disease
b		CADASIL
С	*	Fibromuscular dysplasia
d		Lupus cerebritis
e		Primary angiitis of the central nervous system (CNS)
Ev	alua	tion by an ophthalmologist reveals a branch retinal artery occlusion. On mental status examination, she
sho	OWS	mild memory impairment and is unable to perform serial 7s. Neurologic examination is significant for
dec	crea	sed hearing bilaterally. She has no family history of similar neurologic problems and no abnormal skin
fin	ding	s. Which of the following diagnoses is most consistent with this patient's clinical presentation?
a		CADASIL
b		Giant cell arteritis
С		MELAS
d		Sneddon's syndrome
e	*	Susac's syndrome
An	M	RI of the brain is obtained to provide confirmatory evidence for this patient's condition. Which of the
fol	low	ing findings is most consistent with Susac's syndrome?
а		Diffuse white matter hyperintensity on fluid attenuation inversion recovery (FLAIR) images sparing the
•		subcortical U fibers
b	*	Hyperintensity on FLAIR images in the central portion of the corpus callosum
c		Punctate areas of hypointensity on gradient echocardiography images
d		Sulcal hyperintensity on T2 images
e		White matter hyperintensity on FLAIR images predominantly in the occipital lobes
Research on Susac's syndrome indicates a pathologic role of antiendothelial cell antibodies. Several		
aut	oim	mune conditions can lead to cerebral infarction. A pathologic self-recognizing antibody has been
ide	ntif	ted for which of the following presumably autoimmune stroke-causing conditions?
a		Behçet's disease

b		Giant cell arteritis
с		Primary angiitis of the CNS
d		Sneddon's syndrome
e	*	Wegener's granulomatosis
A	50-y	vear-old man presents with recent onset of right facial weakness. He cannot lift his right eyebrow or close
his	rig	ht eye. He has a depressed right nasolabial fold. He also reports decreased taste. What is the best
trea	atmo	ent?
а		Aspirin
b		Heparin drip
c	*	Prednisone
d		Intravenous recombinant tissue plasminogen activator (rtPA) if he presents within 4.5 hours of
		symptom onset
e		All answers are incorrect
W	hat	is the most common cause of amaurosis fugax (transient monocular blindness)?
a	liat	Hypotension
h	*	Insilateral internal carotid artery atherosclerosis
C		Migraine
d		Onbthalmic artery vasosnasm
e		Temporal arteritis
WI	nich	of the following is least likely to be due to a lacunar stroke in a left hemisphere dominant person?
2	nen	Left sided weekness involving the face, arm, and leg
a b		Left sided numbross involving the face, arm, and log
0		Dysorthria and a clumsy left arm
с 	*	Left face and arm weakness and left hominoglast
u		All enginers are correct
e	42 -	All allowers are correct
A 4	42-y	ear-old man presents with prosis on the left, numbress of his left face and right arm and leg, vomiting,
ver	ugo	y, and failing to the right. Occlusion of which aftery is most likely responsible?
a 1-	~	Vertebral artery
D		Anterior inferior cerebellar artery
с 1		Superior cerebellar artery
a		Posterior cerebral artery
e	. 1	All answers are incorrect
As	strol	ke in which of these territories causes the lateral pontine syndrome (ipsilateral facial paralysis, unilateral
dea	afne	ss, vertigo, facial hemianesthesia, contralateral loss of pain and temperature, ataxia, and ipsilateral
Ho	rnei	syndrome).
a	*	Anterior inferior cerebellar artery (AICA)
b		Anterior spinal artery
c		Paramedian branches of the basilar artery
d		Posterior inferior cerebellar artery (PICA)
e		All answers are correct
A	60-y	year-old man presents with left face and arm weakness. Sensation is normal. What artery is most likely
inv	olv	ed?
a	*	The right recurrent artery of Huebner
b		The right anterior cerebral artery
c		The right lateral lenticulostriate arteries
d		The right anterior choroidal artery
e		All answers are incorrect
A	70-y	rear-old woman presents with a stroke of the medial thalami bilaterally. Where is the lesion?
a	*	The artery of Percheron
b		Posterior choroidal artery
с		Polar/thalamotuberal artery
d		Thalamogeniculate artery

e		All answers are incorrect
A :	55-y	vear-old man taking no medications presents with acute stroke. His oxygen saturation is 96% on room air.
WI	hich	of the following is false?
a	*	Supplemental oxygen should be given
b		Cardiac monitoring should be performed for the first 24 hours after the stroke to rule out atrial
		fibrillation
с		Since there is no history of anticoagulant use, the only blood test required before administration of
		recombinant tissue plasminogen activator (rtPA), if there is no reason to suspect a bleeding abnormality,
		is a blood glucose measurement
d		Baseline troponins should not delay administration of rtPA
e		All answers are correct
WI	hich	of the following statements is false?
а	*	If a patient clinically has a transient ischemic attack, the findings on diffusion-weighted imaging (DWI)
		will be negative
b		Some patients with stroke have negative diffusion-weighted imaging findings
с		Recombinant tissue plasminogen activator (rtPA) can be given to a stroke patient who is improving
		clinically if the remaining deficit is not minor
d		The guidelines now state that rtPA can be given to patients up to 4.5 hours after the onset of stroke, but
		there are additional exclusion criteria after 3 hours
e		All answers are correct
Α	60-	year-old patient presents with stroke. Symptoms began 30 minutes ago. No contraindications to
rec	oml	binant tissue plasminogen activator are found in the history or laboratory studies. Computed tomography
(C'	T) s	hows blurring of the gray-white junction involving more than one third of the middle cerebral artery
ter	ritor	y. Which of the following is the most appropriate treatment?
a		Aspirin
b		Clopidogrel
с		Heparin drip
d	*	Recombinant tissue plasminogen activator
e		All answers are correct
Wl	hich	of the following statements is false?
a		In addition to being invasive, conventional angiography does not provide good visualization of
		intramural hematomas
b	*	Intravenous tissue plasminogen activator is contraindicated in cases of stroke from carotid dissection
с		Infection, hypoglycemia, and other metabolic disturbances can reactivate old stroke symptoms
d		Hemiparesis is the most common presentation of acute stroke in children
e		All answers are correct
Wl	hat i	s the mechanism of action of recombinant tissue plasminogen activator?
a	*	It converts plasminogen to plasmin, which initiates fibrinolysis
b		It inhibits platelet cyclooxygenase
с		It inhibits platelet aggregation
d		It is a thrombin inhibitor
e		All answers are correct
Α	55-	year-old man has a right middle cerebral artery infarct. Thirty six hours after the stroke, he is difficult to
arc	ouse	. CT shows mass effect and slight midline herniation. Which treatment should be considered?
a		Corticosteroids
b	*	Hemicraniectomy
с		Hypothermia
d		Suboccipital decompression
e		All answers are incorrect
Α	pati	ent with hypertension is found to have asymptomatic carotid stenosis. Which of the following is
rec	om	mended to prevent stroke?
a		Initiation of aspirin and a statin
b		Self-measured blood pressure at home to try to improve blood pressure measurements

с		A diet that is low in sodium and high in potassium
d	*	All of the above
e		None of the above
A '	70-y	ear-old man presents with right middle cerebral artery stroke. Investigations reveal 90% stenosis of his
rig	ht n	hiddle cerebral artery. Which of the following treatments is recommended?
a	*	Aspirin 325 mg daily
b		Warfarin
с		Angioplasty of the right middle cerebral artery
d		Stenting of the right middle cerebral artery
e		All of the above
Α	60-y	year-old man presents the day after a stroke. A patent foramen ovale (PFO) is found. The rest of his
wo	rkuj	p is unremarkable. He has never had a deep vein thrombosis. What treatment is recommended?
a	*	Aspirin
b		PFO closure in 1 month
с		PFO closure as soon as possible
d		Warfarin
e		All of the above
Α	40-y	year-old woman presents with a stroke. She has a history of three spontaneous abortions. Her partial
thr	omb	ooplastin time (PTT) is prolonged. Which of the following tests is most likely to confirm her diagnosis?
a		Quantitative von Willebrand factor testing
b		Antithrombin III level
с	*	Testing for antiphospholipid antibodies
d		Testing for protein S deficiency
e		None of the above
In	whi	ch stroke patients may carotid endarterectomy (CEA) be associated with an improved outcome compared
wi	th ca	arotid artery stenting (CAS)?
а	*	Age greater than 70 years
b		Patients with hyperlipidemia
c		Patients with mild diabetes
d		Patients taking aspirin
e		None of the above
W	hich	of the following is least likely to increase the risk for stroke due to atrial fibrillation?
a		Congestive heart failure
b		Hypertension
с		Diabetes
d	*	Age 60 years
e		All answers are correct
W	hat i	s an advantage of warfarin compared with other oral anticoagulants such as apixaban and dabigatran?
a	*	It is reversible with vitamin K and fresh frozen plasma
b		It is shorter acting
С		Less risk for intracranial hemorrhage
d		Less risk for gastrointestinal hemorrhage
e		All answers are incorrect
A.	30-y	ear-old woman with a history of migraines presents with stroke. Her father had a history of recurrent
str	okes	beginning at age Her paternal grandmother had early dementia. Magnetic resonance imaging (MRI)
sho	ows	extensive white matter disease. Which of the following is expected?
a		Mutation in the GLA gene
b		Mutation in the HTRA1 gene
C		Mutation in the KRITI gene
d	*	Mutation in the NOTCH3 gene
e		All answers are correct
A	20-y	ear-old man with a history of intellectual disability and myopia presents with stroke. On examination, he

is	tall	and thin. Serum and urine amino acids confirm his diagnosis. A trial of which medication is	
rec	recommended to treat the underlying condition?		
a		Carnitine	
b		Coenzyme Q10	
с	*	Pyridoxine	
d		Warfarin	
e		All answers are incorrect	
In	a p	atient with sickle cell disease and high-velocity flow in the middle cerebral artery demonstrated on	
tra	nscr	anial Doppler ultrasonography, what is the best method to prevent stroke?	
a		Avoid iron deficiency anemia	
b	*	Transfuse the patient to maintain a hemoglobin S concentration at less than 30% of the total hemoglobin	
		concentration	
С		Transfuse the patient when symptoms occur	
d		Transfuse the patient if symptoms persist after hydration	
e		All answers are incorrect	
Α :	58-у	ear-old woman presents with a small subcortical intracerebral hemorrhage. Her blood pressure is 185/	
11:	5 mi	m Hg. Which of the following is recommended at this time?	
a		Mannitol	
b		3% hypertonic saline	
с	*	Nicardipine	
d		Intravenous fosphenytoin	
e		None of the above	
Α	50-	year-old man presents with a lobar intracerebral hemorrhage. Which of the following is not	
rec	omr	nended?	
a		Screen for a myocardial infarction	
b		Screen for dysphagia	
с	*	Administer corticosteroids to decrease intracranial pressure	
d		Consider continuous electroencephalographic (EEG) monitoring if his mental status is worse than	
		expected	
e		All of the above	
A	15-y	ear-old boy was struck in the head by a baseball. He briefly lost consciousness when it occurred but then	
rec	ove	red. In the emergency department, he begins to become confused and drowsy and then vomits repeatedly.	
Wł	nich	of the following has most likely occurred?	
a		Aneurysmal rupture	
b	*	Laceration of the middle meningeal artery	
с		Post-traumatic seizure	
d		Post-traumatic migraine	
e		All answers are incorrect	
Wł	nich	of the following statements is false?	
а		Headgear does not prevent concussion in those playing sports but may help to prevent more serious	
		brain injury	
b	*	Loss of consciousness is required to diagnose concussion	
с		An athlete with a suspected concussion should be removed from play to prevent additional injury	
d	ĮĮ	An apparently mild second head injury can be fatal if the patient has not recovered from the first head	
		injury	
e		All answers are correct	
Α	box	er who has been knocked out repeatedly develops progressive cognitive decline. He has memory	
im	pair	ment and executive dysfunction. The symptoms began after retirement from the sport. Magnetic	
resonance imaging (MRI) shows diffuse cerebral atrophy, a cavum septum pellucidum, and thinning of the			
con	pus	callosum. What is the most likely diagnosis?	
a		Chronic neurocognitive impairment	
b		Chronic postconcussion syndrome	
C	*	Chronic traumatic encenhalonathy	

d		Parkinson disease
e		None of the above
A	24-y	vear-old patient was involved in a motor vehicle accident 5 days ago and is not awakening. Pupils are
rea	ictiv	e, and corneal and gag reflexes are present. Withdrawal responses are symmetric. Computed tomography
(C'	T) se	cans have been negative, and intracranial pressure (ICP) is normal. What is the most likely MRI finding?
à		A brainstem ischemic stroke
b	*	Microbleeds in the corpus callosum and at the gray-white junction
c		A subdural empyema
d		A subdural hygroma
e		All answers are incorrect
Δ	25-1	rear-old woman presents with a severe traumatic brain injury due to a motor vehicle accident. Her
	23-y 2800	w Come Scale (GCS) score is 7 and her CT scan is abnormal. Which of the following is recommended?
3	usge	High-dose corticosteroids
a h		Frythropoietin
0		Progesterone
2	*	Intrograpial pressure monitoring
ů	· ·	Nora of the shows
e L	41	None of the above
In :	the	context of increased ICP and the Monro-Kellie hypothesis, which of the following is usually the most
1m	port	ant blood volume regulator?
a		Arteriolar oxygen
b	*	Arteriolar carbon dioxide
С		Arteriolar lactic acid
d		Venous oxygen
e		All answers are incorrect
W	hich	of the following treatments for elevated ICP is reserved primarily for acute treatment?
a	*	Hyperventilation
b		Mannitol
с		Hypertonic saline
d		Hypothermia
e		None of the above
W	hich	of the following statements is false?
a		Post-traumatic epilepsy is a common cause of acquired epilepsy
b	*	Administration of anti-epileptic medications immediately after a traumatic brain injury prevents patients
		from developing epilepsy later
с		The majority of patients who develop epilepsy from a traumatic brain injury do so within the first
		2 years after the injury
d		Prophylactic anti-epileptic medication decreases the risk of early post-traumatic seizures
e		None of the above
Mı	ıtisr	n, lack of emotion, and minimal movement may indicate an injury to which region?
а		Dorsolateral frontal lobe
b		Orbital-frontal region
с	*	Superior mesial frontal lobe
d		Inferior temporal lobe
e		None of the above
A	67-v	ear-old man with a history of prostate cancer presents to the emergency department with lower back pain
and	d les	weakness. MRI shows spinal metastases. What is the first step?
a	*	Administer high-dose dexamethasone
ĥ		Arrange for spinal radiation therapy
c		Make arrangements for surgery
d		Order a CT myelogram to better define cord impingement
e	$\left \right $	None of the above
W/	hick	n of the following statements is false?
**	mel	1 of the rono wing statements is raise.

а		Patients with a traumatic spinal cord injury above the C5 level that is complete should be intubated
b	*	A traumatic spinal cord injury in the upper thoracic spine that is complete typically causes early
		hypertension and tachycardia
с		A common cause of spinal cord infarction is surgery, such as aortic surgery
d		Cerebrospinal fluid (CSF) drainage is used to treat acute spinal cord infarction
e		None of the above
W	hich	n of the following features is not typical of metabolic encephalopathy?
а	*	Nonreactive pupils
b		Nonfocal neurologic examination
с		Distractibility
d		Waxing and waning alertness
e		None of the above
Th	e el	ectroencephalogram (EEG) finding of 14- and 6- Hz positive spikes is classically associated with which
coi	nditi	ion?
а		Benzodiazepine intoxication
b		Cardiac arrest
с		Renal failure
d	*	Reve syndrome
e		None of the above
A	60-v	vear-old man in the intensive care unit (ICU) develops altered mental status and has a brief seizure. He is
afe	bril	e. His complete blood count and CSF studies are unremarkable. His complete metabolic profile shows a
soc	liun	1 level of 115 mEq/L. Which of the following is the best treatment?
a		Intravenous fosphenytoin
b		Intravenous levetiracetam
c		Scheduled intravenous lorazenam
d	*	Sodium correction
e	-	None of the above
A	nati	ent who was admitted to the ICU with a frontal contusion becomes intermittently unresponsive
La	hora	atory studies are normal and head CT findings are unchanged. Which of the following is most likely to
vie	eld tl	he diagnosis?
) a	*	Continuous EEG monitoring
b		Repeat MRI
c		Magnetic resonance venography (MRV)
d		Computed tomography angiography (CTA)
e		None of the above
	neur	round of the above
(SI		H) is suspected. Which of the following is least likely to be present?
(D1 8	*	Sodium level >145 mFa/I
h h		Decreased urine output
C		Concentrated urine
d		Hypervolemia
u o		None of the above
	potic	note of the above
A	Jane	Lives alwaymia
a h		
0		
С 	*	Nonkatatia hymerglyaamia
a	-1-	Nonketotic hypergrycenna
e		None of the above
A,	pati	ient presents with leg weakness and areflexia. Electromyography (EMG) shows a demyelinating
po	iyne	uropathy. The weakness progresses to the upper extremities after admission. In addition to treating the
pat	lent.	s underlying condition, which of the following is recommended?
a		Perform a swallow study

c Repeat EMG on the following day to assess for worsening d Place a nasogastric tube e None of the above A patient with a history of respiratory failure and sepsis cannot move when the paralytic agent is discord creatine kinase is elevated. Muscle biopsy shows selective loss of myosin filaments. What is the modiagnosis? a * a * Critical illness myopathy b Critical illness polyneuropathy	ntinued. st likely G shows
d Place a nasogastric tube e None of the above A patient with a history of respiratory failure and sepsis cannot move when the paralytic agent is disco Creatine kinase is elevated. Muscle biopsy shows selective loss of myosin filaments. What is the modiagnosis? a * Critical illness myopathy b Critical illness polyneuropathy	ontinued. st likely G shows
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a * Critical illness myopathy b Critical illness polyneuropathy	G shows
h Critical illness polyneuropathy	G shows
o critical inness por yneuropaury	G shows
c Hypothyroidism	G shows
d Periodic paralysis	G shows
e None of the above	G shows
A 30-year-old man presents with respiratory failure. He is found to have limb-girdle weakness. EM	
myotonic discharges in the paraspinal muscles. What is the most likely cause?	
a * Acid maltase deficiency	
b Myophosphorylase deficiency	
c Mutation in PHOX2B	
d Spinal muscular atrophy type 1 (Werdnig-Hoffman disease)	
e None of the above	
Which of the following is a medication that is sometimes used in the treatment of neuroleptic n	alignant
syndrome but should not be given if calcium channel antagonists are being used?	-
a Amantadine	
b Bromocriptine	
c * Dantrolene	
d l-Dopa	
e None of the above	
Which of the following is a medication that should be avoided in patients with neuromuscular disease	because
of the risk of hyperkalemia?	
a Atracurium	
b * Succinylcholine	
c Rocuronium	
d Vecuronium	
e None of the above	
Typically, a poor pupillary response and absence of corneal reflexes on day 3 after a cardiac arrest in	dicates a
poor prognosis. In which of the following situations should one wait past day 3 to decide the prognosis	
a The patient is less than 50 years old	
b * The patient was treated with hypothermia	
c The patient's ejection fraction is less than 10%	
d The patient has pericarditis	
e None of the above	
What is Cushing's triad?	
a Hypotension, bradycardia, apnea	
b Hypertension, tachycardia, apnea	
c Hypotension, tachycardia, tachypnea	
d * Hypertension (widened pulse pressure), bradycardia, and irregular respirations	
e None of the above	
If a patient has been treated with neuromuscular blocking agents, how can one best determine whether	they are
affecting the brain death examination?	,
a Check a serum level	
b * Perform the train-of-four technique with maximal ulnar stimulation	
c Do an EMG	
d Use a painful stimulus	

0		None of the above
	nich	of the following is least helpful as an ancillary test during brain death testing in adults?
•••1		Fleetroonconholography
a h		Transcranial Doppler ultrasonography
0		Single photon emission computed temography (SDECT) pueleer seen
C d	*	Single-photon emission computed tomography (SPECT) nuclear scan
a	*	Somatosensory evoked potentials (SSEPS)
e		All answers are correct
A	50-y	rear-old man is brought to clinic by his daughter. He has been forgetful and loses objects. She suspects
dei	nen	tia. which of the following best differentiates mild cognitive impairment from dementia?
a 1		Preservation of executive function
b		Preservation of language skills
C	*	Preservation of visuospatial skills
d	Ŷ	Preservation of activities of daily living
e		None of the above
WI	nich	of the following is not an early finding in Alzheimer disease (AD)?
a		Episodic memory loss
b		Rapid forgetting
С		Difficulty managing finances
d	*	Impaired procedural memory
e		None of the above
A	colle	ege professor is concerned that he may have early AD. What is the most helpful evaluation?
а		Clinical Dementia Rating scale
b		Mini-Mental State Examination (MMSE)
с		Montreal Cognitive Assessment
d	*	Neuropsychological testing
e		None of the above
A	50-y	year-old patient with a diagnosis of mild cognitive impairment (MCI) is concerned about progression to
AI). W	/hich of the following is not an indicator of more rapid progression from MCI to AD?
а		Low Abeta42 and high tau in cerebrospinal fluid
b		Carrier of ɛ4 allele of apolipoprotein E
с	*	Positron emission tomography (PET) shows hypometabolism in the frontal lobes
d		A positive amyloid scan
e		None of the above
Wl	nat i	s the greatest risk factor for AD?
а		Family history of AD
b		Head trauma
с		Socioeconomic status
d	*	Increasing age
e		All answers are incorrect
A	50-y	vear-old man presents with concerns about AD. His mother, maternal aunt, and maternal grandmother
we	re d	iagnosed with AD. What is the most likely cause?
а		Mutation in APP
b		Mutation in ApoE4
с	*	Mutation in PSEN1
d		Mutation in PSEN2
e		None of the above
In	pati	ents with AD, choline acetyltransferase is decreased in which structure?
a	*	Basalis nucleus of Mevnert
b		Raphe nuclei
c		Nucleus accumbens
d		Locus ceruleus
e		None of the above
<u> </u>		

Which of the following is not a characteristic pathologic finding in AD?		
a Synaptic loss		
b * Alzheimer type II astrocytes		
c Granulovacuolar degeneration		
d Hirano bodies		
e All of the above		
Which of the following statements is false?		
a * The diagnoses of Alzheimer disease (AD) and vascular cognitive impairment (VCI) are mutually		
exclusive		
b Depression may contribute to cognitive symptoms in patients who have had a stroke		
c VCI is typically subcortical in nature		
d VCI can occur without memory deficits		
e None of the above		
Which of the following is not recommended to prevent vascular cognitive impairment in at-risk individuals?		
a * Antioxidants		
h Mediterranean diet		
0 International diff 0 Develop1 activity		
d Treatment of hypertension		
a All of the above		
A 60 year old usually suist college professor begins rolling her eves when ested substitutes in class and valling		
A 60-year-oid, usually quiet conege professor begins formig her eyes when asked questions in class and yening		
Which of the following is most likely ber diagnosis?		
which of the following is most likely her diagnosis?		
a Alzheimer disease		
b Creutzfeldt-Jakob disease		
c * Frontotemporal degeneration		
d Progressive supranuclear palsy		
e None of the above		
Which of the following is least consistent with behavioral variant frontotemporal degeneration?		
a Apathy		
b Loss of sympathy		
c Ritualistic behavior		
d * Visuospatial difficulties		
e None of the above		
Mutation in which of the following genes is the most common cause of familial frontotemporal dementia with		
amyotrophic lateral sclerosis (ALS)?		
a * C9ORF72		
b GRN		
c MAPT		
d SOD1		
e None of the above		
Which of the following statements is false?		
a * Attention difficulties and personality changes occur late in human immunodeficiency virus (HIV)-		
associated dementia		
b HIV-associated dementia may respond to antiretroviral therapy		
c Patients can develop HIV-associated neurocognitive disorders (HAND) even while receiving		
antiretroviral therapy		
d Neuropsychological testing is required to diagnose milder forms of HIV-associated neurocognitive		
disorders		
e None of the above		
A patient is brought in by his family because of dementia. The family members report that he has noor		
attention forgetfulness visual hallucinations depression falls and strange behavior in his sleep On		
internet in the steep. On		

lik	ely o	cause?
a		Alzheimer disease
b		Parkinson disease
С	*	Dementia with Lewy bodies
d		Normal pressure hydrocephalus
e		None of the above
A :	50-y	ear-old patient presents with rapidly progressive cognitive problems and myoclonic jerks.
Cre	eutz	feldtJakob disease is suspected. Which of the following findings is least consistent with this diagnosis?
а		Elevated cerebrospinal fluid (CSF) tau
b		Elevated CSF neuron-specific enolase
С		Increased signal in the basal ganglia on magnetic resonance imaging (MRI)
d	*	CSF pleocytosis
e		None of the above
Wł	nich	of the following structures are most likely to be found in chronic traumatic encephalopathy?
a		Bunina bodies
b		Lewy bodies
с	*	Neurofibrillary tangles
d		Aggregates of ubiquitin
e		None of the above
W	nich	sleep disorder is characteristic of older adults with dementia?
a		Delayed sleep phase syndrome
h	*	Irregular sleep-wake rhythm disorder
c		Restless leg syndrome
d		Short sleeper
e		None of the above
W	nich	of the following is not recommended for natients with dementia?
3	*	Brief afternoon nans
h		Music therapy
C		Physical evercise
d		Social engagement
u A		All of the above
W/I	hich	of the following is not recommended to reduce behavioral symptoms in patients with dementia?
2	*	Gently correct the patient each time the patient is mistaken
a b		Avoid changes in routine
0		Avoid disturbing television programs and movies
с 		Provent fatigue
u		All anomore are correct
C Dri	ort	All diswers die confect
r II wh	othe	o objective testing with an on-the-foad driving test, which of the following is most helpful in deciding
wh	*	The Clinical Domentia Pating Scale
a b		The patient thinks it is safe
	$\left \right $	Neuropsychological testing
4		Analysis of processing speed
u		Analysis of processing speed
e ^	noti	None of the above
A	paul	being invastigning is naving significant volinting. The family feels that the medication has been
ber		Doponoszil
d h	$\left - \right $	
0	$\left \right $	
С 	*	Transdormal rivestigning
a	-4-	None of the shove
e		
WI	nat 1	s the mechanism of action for memantine?

а		AMPA (α-amino-3-hydroxyl-5-methyl-4-isoxazolepropionate) receptor antagonist
b		Cholinesterase inhibitor
с	*	NMDA (N-methyl-d-aspartate) antagonist
d		Reduces glutamate release at the synapse
e		None of the above
A	25-v	ear-old woman presents with eye pain and blurry vision. On examination, she has decreased visual
acı	ity	and an afferent pupillary defect. Brain magnetic resonance imaging (MRI) is normal apart from the eye.
W	hat i	s the treatment of choice?
а	*	Intravenous methylprednisolone followed by an oral prednisone taper
b		Oral prednisone alone
c		Therapeutic lumbar puncture
d		Interferon-beta
e		None of the above
A	natie	ent presents with painless vision loss in one eve. He is found to have a centrocecal scotoma in that eve
Hi	s m	other and brother experienced similar symptoms and eventually lost vision in both eves. The nation's
bra	in N	ARI is normal. Methylprednisolone does not improve his symptoms. What is his diagnosis?
2		Ontic neuritis
h	*	Leber hereditary optic neuropathy
c		Myotonic dystrophy type 1
d		Oculopharyngeal muscular dystrophy
u e		None of the above
Δ	natia	ant involved in a motor vehicle accident has a brain MRL Lesions consistent with multiple sclerosis are
See	n T	The nation is asymptomatic from the lesions. What is the nation's diagnosis?
3		Clinically isolated syndrome
a h		Possible multiple sclerosis
C		Probable multiple sclerosis
d	*	Padiographically isolated syndrome
u o		None of the above
	hich	of the following statements is false?
991		Multiple sclerosis can be diagnosed at the time of presentation of a clinically isolated syndrome (CIS) if
а		the appropriate MPL findings are seen
h		A single MPL scen can demonstrate dissemination in time
0	*	Oligoclonal bands are pathognomonic of multiple sclerosis
с 1		In a patient with MS, brainstem symptoms at initial presentation suggest a worse prognosis
u o		All anguars are correct
e W/	hich	All allowers are correct
VV I	Inch	MS is more common in identical twing then in fraternal twing
a h		MS has been linked to a networmhism in the major histocompatibility class. It leave on abromosome fin
0		This has been miked to a polymorphism in the major histocompatibility class in locus on chromosome op Geography affects the risk for MS
C J	*	All of the shows
a		All of the above
e	1.	None of the above
W	nich	of the following is most characteristic of MS?
a 1		Complete external ophthalmoplegia
b	*	Complete third nerve palsy
C	*	Sixtn nerve palsy
a		vertical gaze palsy
e		None of the above
W	hich	of the following is most likely to be seen in a patient with MS?
a		Diabetes insipidus
b	*	Facial myokymia
С		Livedo reticularis
d		Retinopathy

e		All answers are incorrect		
A	A patient presents with vision impairment, hearing loss, and headache. MRI demonstrates lesions in the middle			
of	of the corpus callosum. She also has lacunar infarcts. Branch retinal artery occlusions are seen with retinal			
flu	ores	cein angiography. What is the most likely diagnosis?		
а		Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy		
		(CADASIL)		
b		Multiple sclerosis		
c		Neurosarcoidosis		
d	*	Susac syndrome		
e		None of the above		
Α	patio	ent presents with headache, an abducens palsy, and pyramidal signs. She has a long history of mucosal		
ulc	ers	and uveitis. What is the most likely diagnosis?		
a	*	Behçet disease		
b		Multiple sclerosis		
c		Neurosarcoidosis		
d		Whipple disease		
e		None of the above		
W	hich	of the following is most likely to be seen in a patient with MS?		
a		Extrapyramidal signs		
b		Myorhythmia		
c		All the brain lesions enhance simultaneously		
d	*	Open ring sign		
e		None of the above		
W	hich	of the following is least likely to occur in MS?		
a		Depression		
b		Vitamin D deficiency		
c		Sexual dysfunction		
d	*	Seizures		
e		None of the above		
W	hich	of the following is most abundant in an active MS plaque?		
a		B cells		
b		Neutrophils		
c		Eosinophils		
d	*	T cells		
e		None of the above		
W	hich	of the following is the most specific characteristic of an active MS plaque?		
a	*	Macrophages containing myelin debris		
b		Astrocytic fibrillary gliosis		
c		Almost no oligodendrocytes		
d		Sharp margins on gross specimens		
e		All answers are incorrect		
W	hat a	are shadow plaques?		
a		MS plaques with significant axon loss		
b		Smaller MS plaques adjacent to a larger plaque		
с		MS plaques with significant vasogenic edema		
d	*	Remyelinating MS plaques		
e		All answers are correct		
W	hich	of the following is least likely to cause reappearance of prior deficits in a patient with MS?		
a		Exercise		
b		Fever		
с	*	Pregnancy		
d		Urinary tract infection		

e		All of the above	
Α	you	ng woman with relapsing remitting multiple sclerosis (RRMS) asks about having a child. Which of the	
fol	following statements is false?		
а		There is a decrease in the relapse rate during pregnancy	
b	*	There is an increased risk for miscarriage in RRMS	
с		In most patients with RRMS, there is no increase in delivery complications	
d		RRMS does not cause an increase in birth defects	
e		All answers are correct	
W	hich	treatment for MS is safest during pregnancy?	
a		Fingolimod	
b	*	Glatiramer acetate	
с		Dalfampridine	
d		Natalizumab	
e		All of the above	
W	hich	medication for MS is pregnancy category X?	
a		Dimethyl fumarate	
b		Mitoxantrone	
с		Rituximab	
d	*	Teriflunomide	
e		None of the above	
W	hat i	is the reason for treating an MS exacerbation with methylprednisolone?	
а		Prevention of future MS attacks	
b		Delay in the next MS attack	
с	*	More rapid improvement of symptoms	
d		Reduction in the likelihood of permanent injury from an MS lesion	
e		None of the above	
W	hich	of the following statements is false?	
a	*	Randomized controlled trials support the use of methylprednisolone to treat acute MS exacerbations in	
		children	
b		Intravenous immunoglobulin (IVIG) can be used for acute MS exacerbations in adults if steroids are	
		contraindicated	
с		Plasma exchange is a second-line treatment for adults with MS relapses	
d		Methylprednisolone can cause gastrointestinal bleeding	
e		All answers are correct	
W	hich	of the following is the most likely to occur in a patient taking interferon?	
a		Anemia	
b	*	Flu-like symptoms	
с		Leukopenia	
d		Thrombocytopenia	
e		None of the above	
W	hich	of the following medications is contraindicated in patients with poor kidney function (i.e., a low	
glo	omei	rular filtration rate)?	
a	*	Dalfampridine	
b		Fingolimod	
c		Natalizumab	
d		Teriflunomide	
e		All answers are correct	
W	Which of the following medications is a sphingosine- 1-phosphate receptor modulator?		
	hich	of the following medications is a sphingosine- 1-phosphate receptor modulator?	
a	h1ch	of the following medications is a sphingosine- 1-phosphate receptor modulator? Dalfampridine	
a b	hich *	of the following medications is a sphingosine- 1-phosphate receptor modulator? Dalfampridine Fingolimod	
a b c	hich *	of the following medications is a sphingosine- 1-phosphate receptor modulator? Dalfampridine Fingolimod Ocrelizumab	

All answers are correct			
Which of the following medications is associated with cardiac arrhythmias, elevated liver enzymes, macul	ar		
edema, skin cancer, and herpesvirus infections?			
a Cyclophosphamide			
b * Fingolimod			
Rituximab			
1 Mitoxantrone			
All answers are incorrect			
What is the mechanism of action of natalizumab?			
It is a sphingosine-1-phosphate receptor agonist			
* It interferes with the interaction between very late antigen- 4 and vascular endothelial adhesi	on		
molecule-1			
It is an antibody to CD			
I It inhibits dihydro-orotate dehydrogenase			
e None of the above			
Which of the following statements is false?			
Mitoxantrone is a chemotherapeutic agent that decreases lymphocyte proliferation			
There is a limit for mitoxantrone dosing that should not be exceeded in a patient's lifetime			
There is a black box warning for mitoxantrone because of cardiotoxicity and treatment-associat	ed		
leukemia			
1 * If cardiotoxicity occurs with mitoxantrone, it occurs during the first months of treatment			
All answers are correct			
A patient who has been doing well on natalizumab presents with changes in behavior, gradually worsening le	ft-		
sided weakness, and seizures. Which condition needs to be ruled out?			
* Progressive multifocal leukoencephalopathy (PML)			
Immune reconstitution inflammatory syndrome			
Hepatic encephalopathy			
Reversible posterior leukoencephalopathy			
e None of the above			
Which of the following features is least consistent with the diagnosis of PML?			
Areas of demyelination			
* Extensive perivascular cuffing and necrosis			
Large astrocytes with bizarre nuclei			
1 Oligodendrocytes with intranuclear inclusions			
All answers are correct			
Which of the following medications is a monoclonal antibody to CD52 and may carry a high risk f	or		
autoimmune complications?			
a * Alemtuzumab			
Daclizumab			
c Ocrelizumab			
1 Tocilizumab			
All of the above			
A 30-year-old woman is diagnosed with an asymmetric partial transverse myelitis. An inflammatory etiology	is		
suspected. What is the best treatment?			
a Interferon-beta			
D Intravenous immunoglobulin (IVIG)			
* Methylprednisolone			
1 Plasma exchange			
All answers are incorrect			
A 20-year-old woman is diagnosed with transverse myelitis. Which of the following findings suggests the	at		
neuromyelitis optica spectrum disorder (NMOSD), not MS, is the etiology?			
The presence of oligoclonal bands			

b	*	Longitudinally extensive transverse myelitis (i.e., the lesion involves at least three vertebral segments)
c		Involvement of only the dorsolateral cord
d		Involvement of less than one third of the cross-sectional area of the cord
e		All of the above
Th	e pr	esence of which of the following suggests that NMOSD, not MS, is the etiology of transverse myelitis?
а	*	Aquaporin-4 antibodies
b		Myelin basic protein antibodies
c		Proteolipid protein antibodies
d		Elevated immunoglobulin G (IgG) index
e		All of the above
W/ł	nich	of the following statements is false?
9	nen	In children most cases of acute transverse myelitis are idionathic whereas in adults a minority of cases
a		are idionathic
h		In children acute transverse mulitis is more commonly associated with MS if fewer than three
U		vertebral segments are involved
C		Mathylpradnisolone is the treatment of choice for idionathic acute transverse myelitis
2	*	Infonte have a better prognosis then other children with coute transverse muslific
a		All answers are correct
e w		All answers are correct
WI	1at 1	s the target for neuromyenitis optica immunoglobulin G (NMO-IgG)?
a 1	Ť	A water channel protein
b		A sodium channel
С		A potassium channel
d		A calcium channel
e		None of the above
Wł	nere	is the target for NMO-IgG?
a	*	On astrocytes
b		On oligodendrocytes
с		On ependymal cells
d		On the myelin sheath
e		None of the above
Wł	nich	of the following potential treatments used for NMOSD is an anti-CD20 monoclonal antibody?
a		Aquaporumab
b		Eculizumab
с	*	Rituximab
d		Tocilizumab
e		None of the above
Th	iopu	rine methyltransferase levels are checked before NMOSD is treated with which agent?
а		Aquaporumab
b	*	Azathioprine
с		Mycophenolate mofetil
d		Tocilizumab
e		None of the above
Δ	10-v	rear-old girl presents with headache sleepiness and difficulty walking She was normal until 2 weeks
200	n w	hen she had a virus with fever MRI shows multiple lesions in the cerebral white matter thalamus and
has	s, w	ranglia Most of the lesions enhance. Analysis of the cerebrospinal fluid (CSF) shows 30 white blood
Cel	ع سر ام (0	28% lymphocytes) Oligoclonal hands are negative. What is the most likely diagnosis?
2		Acute cerebellar ataxia
h h	*	Acute disseminated encenhalomyelitis (ADFM)
C		Multiple sclerosis
2		Davie disease
u		All anomars are incorrect
e 1171		All allowing is loss turies of south discontinuated encents lower living (ADENO)
VV I	ncn	or the following is least typical of acute disseminated encephalomyentis (ADEM)?

a	*	Severe axonal loss
b		Perivenular demyelination
c		The presence of lymphocytes around the veins
d		The presence of macrophages around the veins
e		None of the above
Which of the following statements regarding demyelinating disorders in children is false?		
a		For diagnosis of clinically isolated syndrome (CIS), the child should not have encephalopathy (that
		cannot be explained by fever)
b	*	For diagnosis of CIS, the symptoms must be present for at least 1 week
c		For diagnosis of CIS, the patient should not have had a prior central nervous system (CNS) demyelinating event
d		Absence of encephalopathy with a first CNS demyelinating event indicates an elevated risk for MS
e		All answers are correct
Wł	nich	of the following statements regarding demyelinating disorders in children is false?
a		It is recommended that the term recurrent ADEM not be used
b	*	To fulfill criteria for multiphasic ADEM, the two events must occur at least 9 months apart
с		Younger children who are later diagnosed with MS are more likely to have a first event resembling
		ADEM than are adolescents with MS
d		If a child who has been diagnosed with ADEM is later diagnosed as MS, the onset of MS is said to have occurred when the ADEM event occurred
e		All answers are correct
Which of the following statements regarding demyelinating disorders in children is false?		
a	*	The presence of hypointense lesions on T1-weighted MRI is more suggestive of ADEM than of MS
b		Periventricular lesions are more consistent with MS than with ADEM
с		For diagnosis of MS, the two CNS demyelinating events have to occur at least 30 days apart
d		During childhood, MS usually follows a relapsing remitting course
e		All answers are correct
A 14-year-old girl presents with right arm weakness after an upper respiratory tract infection. MRI shows		
asy	/mm	hetric lesions that have increased signal on T2- weighted and fluid-attenuated inversion recovery (FLAIR)
and basal ganglia. There is relative sparing of the periventricular white matter. Cognition is normal. What is her		
dia	.gno	
a 1-	Ť	Unnicariy isolated syndrome (UIS)
b		
c		ADEM (monophasic)
d		ADEM (multiphasic)
e	25	None of the above
A 25-year-old woman with a recent upper respiratory tract infection presents with fever, confusion, and		
seizures. The C-reactive protein level is elevated. MRI shows diffuse, bilateral asymmetric lesions in the		
cerebrar white matter. There is edema surrounding the resions, and some of the resions emhance. Some of the		
emancing resions are C-snaped. Susceptionityweighted images show multiple punctate hemorrhages in the gray		
likely diagnosis?		
IIKe		A sute homorrhogia laukoonoonholitia
d h		Embolio stroko
		Antional MS (Marburg disease)
d d		Marchiafaya Bignami digagga
u		None of the above
e wi		of the following causes on ADEM like illness but is also accessized with henoteenlaneweesly
which of the following causes an ADEN-like liness out is also associated with hepatospielionegaly,		
	прпа	Corobrotondinous vanthomatoris
a h		Eabry disease
0	*	Macrophage activation syndrome
C	· ·	זיזמרוסטרומציד מכוויימווטוו גאווערטווד 100
e None of the above Which of the following cells are cytotxic and kill cells infected with viruses? a CD4+ T cells c Gemistocytes d Natural killer cells e All of the above Patients with myasthenia gravis who test negative for acetylcholine receptor antibodies may have which of these antibodies? a Anti-GQI bantbodies b Anti-MG antibodies c Anti-MAG antibodies c Anti-MAG antibodies d * Anti-MG antibodies e All of the above Patients with myasthenia gravis with which of these antibodies often have a thymoma? a * Anti-GOI bantbodies c All of the above Patients with myasthenia gravis with which of insea antibodies often have a thymoma? a * Anti-GOI bantbodies - c All of the above Which of the following statements is false? a Anti-Hu antibodies c All of the above Which of the following statements is false? a Plasmapheresis is a considered in milder cases b Plasmapheresis can be considered in acute fulminant		

Which of the following cells are cytotoxic and kill cells infected with viruses? a CD4+ T cells b * CD8+ T cells c Gemistocytes d Natural killer cells e All of the above Patients with myasthenia gravis who test negative for acetylcholine receptor antibodies may have which of these antibodies? a Anti-GQI bantibodies b Anti-GQI antibodies c All of the above Patients with myasthenia gravis with which of these antibodies often have a thymoma? e All of the above Patients with myasthenia gravis with which of these antibodies often have a thymoma? e All of the above Patients with myasthenia gravis with which of these antibodies often have a thymoma? a Anti-GQI bantibodies c Anti-GQI bantibodies c All of the above Which of the following statements is false? a Plasmapheresis is a noption for treatment of chronic inflammatory demyelinating polyneuropathy (CIDP) in the short term b Plasmapheresis is in indicated for treatment of polyneuropathy caused by immunoglobulin M (lgM) monocolonal gammopathy of undetermined significance (MGUS)		
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b * Malignant thymoma c Small cell lung cancer		
c Small cell lung cancer		
d Thyroid carcinoma		
e None of the above		
A 9-year-old boy presents with intractable focal clonic seizures of the left hand and arm. His left hand and arm		
are becoming progressively more weak. CSF analysis demonstrates no infection. MRI shows atrophy of the		
right hemisphere. Which of the following antibodies are most likely to be present?		
a Antibodies to the calcium channel		
b Antibodies to the γ-aminobutyric acid A (GABA A) receptor		
c * Antibodies to the glutamate receptor 3		
d Antibodies to the sodium channel		
e All answers are correct		

W	hich	n of the following antibodies have been found in some patients with chronic relapsing inflammatory optic
neu	urop	athy and in some patients with ADEM who have prominent optic nerve involvement?
a		Antibodies to GD1a
b		Antibodies to MAG
с	*	Antibodies to MOG
d		Antibodies to sulfatide
e		None of the above
W	hich	of the following antibodies are most often associated with multifocal motor neuropathy?
а		Monoclonal anti-MAG antibodies
b	*	Monoclonal anti-GM1 antibodies
с		Polyclonal anti-GM1 antibodies
d		Polyclonal anti-GQ1b antibodies
e		All answers are correct
Α	24-	year-old woman presents with an unprovoked seizure. Her family asks about workup. Which of the
fol	low	ing statements is false?
a		An electroencephalogram (EEG) is recommended after the first unprovoked seizure
b		Neuroimaging is recommended after the first unprovoked seizure
c		Prolactin can beln to differentiate generalized tonicclonic from psychogenic nonepileptic seizures if
C		measured within 10 to 20 minutes after an event
d	*	A complete metabolic profile (CMP) complete blood count (CBC) and lumbar puncture are
u		recommended
0		All answers are correct
	4 1/0	All diswers are context
A 4	4-ye	An EEC is recommended
a 1.	*	All EEG IS recommended
D	Ť	Starting an anti-epileptic drug (AED) will impact her long-term prognosis
с		If the risks of medication are less than the risks associated with a second seizure, an AED can be
1		prescribed after the first seizure
a		If imaging is performed, magnetic resonance imaging (MIRI) is preferred to computed tomography (C1)
e	10	All answers are correct
A	19-y	vear-old man presents with intractable generalized tonic-clonic (GTC) seizures. His seizures worsen with
sle	ep c	leprivation. He reports morning twitching and jerks while taking carbamazepine. He said he had similar
mu	iscle	twitching during his EEG when the light was flashing. What are the expected EEG findings?
a	*	Generalized 4- to 6-Hertz (Hz) polyspike and wave discharges with a photoconvulsive response
b		Generalized 3-Hz spike and wave discharges
С		Generalized 2.0-Hz spike and wave discharges
d		Left temporal focal epileptiform discharges
e		None of the above
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sle	ep d	leprivation. He reports morning twitching and jerks while taking carbamazepine. He said he had similar
mu	iscle	e twitching during his EEG when the light was flashing. What is the next step in treatment?
а		Add phenytoin
b		Change carbamazepine to oxcarbazepine
с	*	Change from carbamazepine to levetiracetam
d		Continue carbamazepine and add levetiracetam
e		None of the above
Α	6-ye	ear-old patient presents with nocturnal GTC seizures. A few seizures have been preceded by facial
tw	itchi	ng, drooling, and speech arrest. What are the expected EEG findings?
a	*	Focal epileptiform discharges over the centrotemporal regions that increase during sleep
b		Focal epileptiform discharges over the right frontopolar region
c		Focal epileptiform discharges over the midline (at the Cz electrode)
d		Generalized epileptiform discharges at 3 to 4 Hz
e		All answers are incorrect
<u> </u>	1	

A 5-year-old patient presents with prolonged nocturnal seizures characterized by eye deviation to the right and unresponsiveness. Seizures are preceded by nausea and accompanied by headache and vomiting. Which of the following is the most likely diagnosis?

TOHOW	'ing is the most likely diagnosis?
a	Benign rolandic epilepsy
b	Childhood absence epilepsy
С	Juvenile myoclonic epilepsy
d *	Panayiotopoulos syndrome
e	None of the above
An 1	I-year-old boy has recurrent seizures during the night characterized by hyperkinetic motor activity. Each
seizur	e is brief and is not followed by a postictal period. His mother has a history of similar nocturnal seizures.
A defe	ect in which of the following structures is most likely?
a	Potassium channel
b	Sodium channel
с	Calcium channel
d	Chloride channel
e *	Nicotinic acetylcholine receptor
A fan	nily brings in their 1-week-old child for evaluation. The patient is having multiple brief focal clonic
seizur	es per day. They started at 3 days of life. She has not had fever. The examination findings are normal. Her
inter-i	ctal EEG is normal. The family reports that the patient's father paternal uncle and paternal grandmother
had si	milar events, but their seizures resolved before 1 month of age and they had no further neurologic
proble	ms. A defect in which of the following structures is most likely?
a *	Potassium channel
h	Sodium channel
C	Calcium channel
d	Chloride channel
u e	Nicotinic acetylcholine recentor
L An 8	month old girl has a GTC seizure associated with a temperature of 101°F. She has another GTC seizure 1
month	later in conjunction with an ear infection with fover. The EEG is normal. The national's mother states
that al	have herself had solvered with favor from 6 months to 7 years of ago. Her sister did as well. They are both
neurol	ogically normal. What diagnosis should be considered?
	Esprile soizures plus
a ·	Perior recretel femiliel convulsions
0	Denign meonatal familiar convulsions
C	Beingn myocionic epilepsy
a	Early infantile epileptic encephalopathy
e	All answers are incorrect
A 2-ye	ear-old boy presents with daily seizures. He started having seizures at 8 months of age. He has had status
epilep	ticus on three occasions. Two of those episodes occurred with fever. In one episode, the seizure activity
was p	rimarily left-sided; the other two times, it was primarily right-sided. He also has a history of myoclonic
Jerks a	ind head drops. Interictal EEG shows mild diffuse background slowing, a photoparoxysmal response, and
genera	dized 3-Hz spike and wave discharges. What is the most likely diagnosis?
a *	Dravet syndrome
b	Lennox-Gastaut syndrome
с	Early infantile epileptic encephalopathy
d	Early myoclonic encephalopathy
e	All answers are incorrect
A 30-	year-old man who has been seizing (left arm clonic activity) for the past 30 minutes arrives in the
emerg	ency department. He is given lorazepam and fosphenytoin, and the clonic activity stops. A CT scan of the
head v	vas normal, but the patient is difficult to arouse, and his eyes intermittently deviate to the left. What test
should	be considered?
a	Positron emission tomography (PET) scan
b	Single photon emission computed tomography (SPECT)
c *	Electroencephalography (EEG)
d	Magnetoencephalography (MEG)

e Computed tomography angiography (CTA) A 26-year-old man has right temporal lobe epilepsy. His seizures have not responded to levetiracetam or lacosamide. What is the next step? a * Referral to an epilepsy monitoring unit for an epilepsy surgery evaluation b Treatment with oxcarbazepine, levetiracetam, and lacosamide c Treatment with valproic acid, levetiracetam, and lacosamide d Referral to neurosurgery for implantation of a vagus nerve stimulator e None of the above A 32-year-old woman with a history of frequent migraines presents after having three focal-onset seizures. Her family history is remarkable for osteoporosis. Her EEG shows occasional right frontal epileptiform discharges. What do you recommend? Monitor her clinically b * Start topiramate
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What do you recommend? a Monitor her clinically b * Start topiramate
a Monitor her clinically b * Start topiramate
b * Start topiramate
c Start vigabatrin
d Start carbamazenine
e All answers are correct
An 18-year-old female patient who is taking valproic acid for invenile myoclonic enilency (IME) asks for a
different medicine because she is gaining too much weight. The decision is made to transition her from valproic
acid to lamotriging. Three weeks later she calls to report a rash that seems to be spreading. What is the
next step?
a * Stop lamotrigine
b Sond her to her primery ears physician for a workup
Send her to her primary care physician for a workup
d Discontinuo voluncio ocid
d Discontinue vaproic acid
All of the shows
e All of the above
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 All of the above All answers are correct All answers are correct
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a	*	Felbamate
b		Phenytoin
с		Carbamazepine
d		Gabapentin
e		All of the above
Ele	eme	ntary auditory seizures, such as a humming or buzzing sound, arise from which area?
а		Frontal lobe
b		Mesial temporal lobe
с	*	Lateral temporal lobe
d		Parietal lobe
e		None of the above
Un	forr	ned visual hallucinations, such as spots and flashing lights, arise from which area?
a		Parietal lobe
h		Mesial temporal lobe
C		Lateral temporal lobe
d		Temporal-occipital association cortex
u o	*	
E Fo	rma	d visual scenes arise from which area?
10	me	Deriotal Joha
a 1.		Parieta lobe
D		
C	*	Lateral temporal lobe
a	Ŷ	Temporal-occipital association cortex
e		
WI	nich	of the following statements is false?
а		Patients with juvenile absence epilepsy (JAE) tend to have fewer absence seizures than patients with
1		childhood absence epilepsy (CAE)
b	*	Absence seizures in JAE tend to be shorter than absence seizures in CAE
С		Patients with JAE are more likely to have myoclonic and GTC seizures than patients with CAE
d		Patients with JAE may need lifelong treatment
e		All answers are correct
W	nat i	s the most common generalized epilepsy syndrome in adults?
a		Juvenile absence epilepsy
b	*	Juvenile myoclonic epilepsy
с		Epilepsy with GTC seizures alone
d		Childhood absence epilepsy
e		None of the above
W	hich	n of the following is not a channelopathy?
a		Absence epilepsy and episodic ataxia
b		Benign familial neonatal seizures
с		Generalized epilepsy with febrile seizures plus
d	*	Familial lateral temporal lobe epilepsy
e		All of the above
Au	tosc	omal dominant focal epilepsy with auditory features is associated with mutations in which gene?
а		Nicotinic acetylcholine receptor
b		GABA A receptor
с		GABA B receptor
d		Glycine receptor
e	*	Leucine-rich glioma inactivated (LGI1) gene
WI	hich	of the following medications can exhibit zero-order kinetics?
a.		Levetiracetam
h		Valproic acid
c		Phenobarbital
<u> </u>	1	

d	*	Phenytoin
e		None of the above
Wł	nich	of the following medications may be associated with polycystic ovary syndrome and fatal hemorrhagic
par	ncre	atitis?
a		Levetiracetam
b	*	Valproic acid
с		Phenobarbital
d		Phenytoin
e		Oxcarbazepine
A .	30-y	rear-old woman presents in generalized status epilepticus. Which of the following medications should be
adı	nini	stered intravenously first?
a		Diazepam
b		Fosphenytoin
с		Levetiracetam
d	*	Lorazepam
e		All answers are correct
A	2-we	eek-old child presents with tonic seizures. EEG shows burst suppression during wakefulness and sleep.
MI	RI sl	nows hemimegalencephaly. What is the most likely diagnosis?
a		Doose syndrome (myoclonic-astatic epilepsy)
b		Early myoclonic encephalopathy of infancy
с	*	Ohtahara syndrome (early infantile epileptic encephalopathy)
d		West syndrome
e		All answers are incorrect
Mo	ost f	ocal seizures in adults arise from which area?
a		Frontal lobe
b	*	Temporal lobe
с		Parietal lobe
d		Occipital lobe
e		All of the above
Wł	nich	of the following is not a common feature of seizures arising from the supplemental motor area?
a	*	Prolonged duration
b		Tendency to occur during sleep
с		Often stereotypical
d		Multiple occurrences in a single night
e		All of the above
Wł	nich	of the following medications is least likely to lower the seizure threshold?
a		Bupropion
b		Clonidine
с		Tramadol
d		Diphenhydramine
e	*	Cetirizine
Wł	nich	of the following anti-epileptic medications is not a T-type (low voltage-activated) calcium channel
blocker?		
a		Ethosuximide
b	*	Topiramate
с		Valproic acid
d		Zonisamide
e		None of the above
Wł	nich	of the following anti-epileptic medications is not usually associated with weight loss?
a		Felbamate
b	*	Levetiracetam
с		Topiramate
·	۱ <u> </u>	*

d		Zonisamide
e		All of the above
Wl	nich	of the following anti-epileptic medications is broad spectrum?
а		Carbamazepine
b		Ethosuximide
с		Oxcarbazepine
d	*	Valproic acid
e		None of the above
Wl	nich	of the following is the most effective medication for a patient with childhood absence epilepsy and GTC
sei	zure	es?
а		Ethosuximide
b		Oxcarbazepine
с		Tiagabine
d	*	Valproic acid
e		All of the above
Wl	nich	of the following medications has high protein binding?
а		Ethosuximide
b		Gabapentin
с		Levetiracetam
d	*	Phenytoin
e		Vigabatrin
Α	75-	year-old woman presents with confusion. Her laboratory studies show hyponatremia. Which of the
fol	low	ing medications is most likely to cause this condition?
а	*	Oxcarbazepine
b		Lacosamide
с		Clobazam
d		Zonisamide
e		None of the above
Wl	nich	of the following anti-epileptic medications blocks the metabolism of γ -aminobutyric acid (GABA) by
GA	ABA	transaminase?
a		Clobazam
b		Felbamate
с		Tiagabine
d	*	Vigabatrin
e		None of the above
Wl	nich	of the following anti-epileptic medications is least likely to affect the eye?
a	*	Clobazam
b		Ezogabine/retigabine
c		Topiramate
d		Vigabatrin
e		None of the above
Wl	nich	of the following medications can increase absence and myoclonic seizures?
a	*	Carbamazepine
b		Clonazepam
с		Lamotrigine
d		Valproic acid
e		None of the above
Fi	ll in	the blank: Patients taking require the slowest titration of lamotrigine.
a		Carbamazepine
b		Phenobarbital
с		Phenytoin
d	*	Valproic acid

C		None of the above
Wł	nich	of the following medications is least likely to cause weight gain?
a		Pregabalin
b		Gabapentin
с		Valproic acid
d	*	Lamotrigine
e		None of the above
Wł	nich	of the following medications places people of Asian descent with the HLA-B*1502 antigen at higher
risl	k fo	r Stephens-Johnson syndrome than other patients taking the same medication?
a	*	Carbamazepine
b		Lacosamide
с		Valproic acid
d		Topiramate
e		All answers are correct
Pat	tient	ts with short QT syndrome are advised not to take which of the following medications?
а		Carbamazepine
b		Zonisamide
с	*	Rufinamide
d		Ezogabine/retigabine
e		Topiramate
Wł	nich	of the following medications affects sodium channels differently than the others?
a		Phenytoin
b		Lamotrigine
с		Oxcarbazepine
d	*	Lacosamide
e		None of the above
Wł	nich	of the following medications acts on the alpha- 2-delta subunit of high voltage-activated calcium
cha	anne	els?
а		Ezogabine/retigabine
b		Valproic acid
с		Rufinamide
d	*	Gabapentin
e		All of the above
Wł	nich	of the following medications modulates synaptic vesicle protein 2A (SV2A)?
а	*	Levetiracetam
b		Lacosamide
		Lamotrigine
С		Valproic acid
c d		
c d e		Perampanel
c d e A d	5-ve	Perampanel ear-old patient presents with decreased speech and three seizures over the past 3 weeks. His parents report
c d e A tha	5-ye t he	Perampanel ear-old patient presents with decreased speech and three seizures over the past 3 weeks. His parents report e first started having problems with comprehension, then started speaking less. Which of the following
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e		None of the above
W	hat :	is the most common cause of bacterial meningitis?
a		Haemophilus influenzae
b		Neisseria meningitidis
с		Staphylococcus aureus
d	*	Streptococcus pneumoniae
e		None of the above
W	hich	medications are used for empiric treatment of bacterial meningitis in patients younger than 50 years old
wł	10 ar	e otherwise healthy?
а		A second-generation cephalosporin and vancomycin
b	*	Dexamethasone, a third-generation cephalosporin, and vancomycin
с		Ceftriaxone alone
d		Ampicillin and ceftriaxone
e		None of the above
W	hich	of the following statements is false?
а		Chronic meningitis is meningitis lasting longer than 4 weeks
b		Fever is the most common clinical finding in acute meningitis
c		Some patients with meningitis need empiric treatment with vancomycin, ceftriaxone, ampicillin
Ũ		dexamethasone, and acyclovir
d	*	Significantly elevated C-reactive protein and procalcitonin levels are more suggestive of viral
		meningitis than bacterial meningitis
е		All answers are correct
W	hich	of the following medications is added for coverage of anaerobic bacteria in patients who have otitis
sin	usit	is, or mastoiditis and suspected meningitis?
a		Ampicillin
h		Doxycycline
c		Linezolid
d	*	Metronidazole
e		All of the above
Th	le ne	onatal intensive care unit requests a consultation on a newborn that they suspect has neonatal meningitis
If	thev	are correct which organism is most likely to be responsible?
<u>а</u>		Escherichia coli
h	*	Group B Streptococcus
C		Listeria monocytogenes
d		Streptococcus pneumoniae
e		None of the above
Pa	tient	with defects in cell-mediated immunity are at increased risk for meningitis caused by which of the
		ing organisms?
3		Enterobacteriaceae
h	*	
	+	Neisseria meningitidis
d	$\left \right $	Streptococcus pneumoniae
u e		All of the above
Δ	24_{-1}	rear-old nurse is exposed to meningococcal meningitis in the emergency department. What is the
rec	2- 1 - y	nanded treatment?
100		Ethambutol
a h	*	Rifampin
		Streptomycin
4	+	Jucptomychi Jsoniazid (INH)
u	$\left \right $	All of the above
U W	hich	All of the following conditions is loost likely to be associated with a brain abscess?
W		Lung abages
a		Lung abscess

b		Cyanotic heart disease	
с		Osler-Weber-Rendu disease	
d	*	Angelman syndrome	
е		None of the above	
Wł	nich	of the following diseases produces a central nervous system (CNS) toxin?	
a		Diphtheria	
h		Shigellosis	
C		Tetanus	
с 	*	All of the above produce a CNS toxin	
u	-	None of the above produce a CNS toxin	
e ^	None of the above produce a UNS toxin		
A 4	20-y 10ft	lag is floorid and proflexic. Sensation is integet. What is the most likely conserving organism?	
1115	len	Cytomogolovinyo (CMV)	
a 1		Cytomegalovirus (CMV)	
D			
c		Shigella	
d	*	West Nile virus	
e		None of the above	
Wł	nat i	s the most common type of virus to cause meningitis?	
a		Arthropod-borne viruses	
b	*	Enteroviruses	
с		Herpes simplex virus type 1 (HSV-1)	
d		Herpes simplex virus type 2 (HSV-2)	
e		None of the above	
Αı	new	born develops seizures. Head computed tomography (CT) shows periventricular calcifications. What is	
the	mo	st likely diagnosis?	
a	*	Congenital CMV infection	
b		Congenital toxoplasmosis	
с		Congenital syphilis	
d		Congenital rubella	
e		None of the above	
Wł	nich	of the following viruses can cause tremor, myoclonus, parkinsonism, a poliomyelitis-like illness, and	
enc	ceph	alitis?	
a		Epstein-Barr virus (EBV)	
b		Enterovirus	
с		HSV-1	
d	*	West Nile virus	
e		All of the above	
Lv	mnł	pocytic choriomeningitis virus is transmitted from which infected animals?	
2.j.	Inpi	Birds	
h		Cate	
C	*	Hamsters or mice	
d		Lizarde	
u o		None of the above	
6	50	None of the above	
A	50- 0 W	year-old woman presents with a blistering fash on her trunk and complains of pain and trigning in the	
	a. v *	Pacurrence of a latent variable zoster virus	
a h		CMV polyrodioulopothy	
0		USV 1 infaction	
C			
a		H5 V-2 INTECTION	
e			
W	nich	n of the following is most suggestive of an acute Epstein-Barr virus (EBV) infection?	
a	*	Igivi to the EBV viral capsid antigen (VCA)	

h		$I_{\alpha}G$ to the EBV viral cancid antigen (VCA)
0		IgO to the EDV vital capsid antigen (VCA)
4		Ign to Epstein-Dari nuclear antigen (EDNA)
a		IgG to Epstein-Bart nuclear antigen (EBNA)
e	20	All of the above
A	30-	year-old man with human immunodeficiency virus (HIV) infection presents with chronic headache,
col	ntus	ion, and fever. On examination, there is mild nuchal rigidity. Lumbar puncture shows an elevated
op	enin	g pressure, 8 red blood cells (RBCs), 175 white blood cells (WBCs) with a lymphocytic predominance, a
glu	icos	e level of 35 mg/dL, and a protein level of 100 mg/dL. Gram staining is negative. India ink staining
rev	veals	s encapsulated fungi. What is the most likely diagnosis?
a		Aspergillosis
b	*	Cryptococcosis
С		Coccidioidomycosis
d		Histoplasmosis
e		None of the above
CS	Fee	osinophilic pleocytosis is most suggestive of which of the following infections?
a		Aspergillosis
b		Blastomycosis
с		Cryptococcosis
d	*	Coccidioidomycosis
e		Histoplasmosis
A	65-v	rear-old man with renal failure develops meningitis. After his death an autopsy is performed. He has
thi	cker	hed leptomeninges and soan hubble-like lesions in the basal ganglia. Which of the following infections is
mc	ost li	kelv?
2		Aspergillosis
h	*	Cryptococcus peoformans
0		Coccidioidomycosis
4		Listonlasmosis
a		Histoplashiosis
e	1. 1. 1	None of the above
W	nicr	1 of the following infections is most likely to occur in patients with poorly controlled diabetes and to
cat	ise t	black nasal mucosa?
a		Blastomycosis
b		Coccidioidomycosis
С		Histoplasmosis
d	*	Mucormycosis
e		None of the above
W	nich	of the following statements is false?
a		Tuberculomas can resemble posterior fossa tumors
b		Tuberculosis (TB) can be associated with plasma cells in the CSF
с		TB can cause stroke
d	*	TB usually causes noncaseating granulomas
e		TB can cause cranial nerve palsies and hydrocephalus
W	nat i	s the most common cause of sporadic viral encephalitis?
а		EBV
b	*	HSV-1
c		HSV-2
d		West Nile virus
e		None of the above
	20	vear old man presents with a 2 day history of headache faver and worsening confusion. In the
	20-	year-ord man presents with a 2-day instory of neadache, rever, and worsening confusion. In the
		SE analysis shows 300 RBCs 120 WRCs (85% lymphosytes) shoose 60 mg/dL and protain 100 mg/dL
Leg. USF analysis shows 500 KDUS, 120 WBUS (85% lymphocyles), glucose 60 mg/dL, and protein 100 mg/dL.		
	ur U	main standing is negative. Desides magnetic resonance imaging (wiki) of the dram, which test would be
une	; 1110 *	Electroencenhelectonky (EEC)
a	T	Electroencephalography (EEG)

b		Single-photon emission computed tomography (SPECT)	
с		Positron emission tomography (PET)	
d		Magnetic resonance angiogram (MRA)	
e		All of the above	
A patient presenting shortly after onset of symptoms is thought to have HSV encephalitis. However, PC			
ana	alysi	is of the CSF is negative. What is the next step?	
a	*	Continue acyclovir and repeat the lumbar puncture	
b		Discontinue acyclovir to prevent renal toxicity	
с		Repeat the PCR on the same sample	
d		Send CSF to an outside laboratory to verify that the PCR is negative	
e		None of the above	
A	A patient presents with new-onset seizures. MRI shows multiple cystic lesions. CT shows calcifications. What		
is t	the r	recommended treatment?	
a	*	Albendazole plus dexamethasone or prednisolone	
b		Dexamethasone	
с		Pyrimethamine	
d		Everolimus	
e		All answers are correct	
W	hich	of the following statements is false?	
а		Neurocysticercosis is the most common helminthic infection involving the CNS	
b		MRI may miss some cases of neurocysticercosis: Patients can have brain parenchymal calcifications	
		alone, which are missed on MRI but seen on CT	
с		A patient with only calcifications does not need to be treated with cysticidal medications	
d	*	Serum immune diagnostic tests for neurocysticercosis are both very sensitive and very specific	
e		All answers are correct	
An	18	-year-old patient presents with fever, headache, confusion, and rash after a recent hiking trip. The rash	
sta	rted	as macules at his wrists and ankles but now involves his trunk and face. CSF shows a mild pleocytosis.	
Hc	w is	s this treated?	
a		Augmentin	
b	*	Doxycycline	
с		Erythromycin	
d		Ceftriaxone	
e		All of the above	
W]	hich	of the following statements is true?	
а		A brain lesion thought to be toxoplasmosis should be biopsied before treatment is begun	
b		A negative CSF PCR result for toxoplasmosis excludes the diagnosis	
c	*	Toxoplasmosis is the most common cause of a focal mass lesion in the brain of patients with HIV	
L		infection	
d		Lack of antibodies to toxoplasmosis excludes the diagnosis	
e		None of the above	
W]	hich	of the following statements is false?	
a		Neurosyphilis can cause Heubner arteritis leading to stroke	
b	*	When neurosyphilis involves the spinal cord, it is most often associated with degeneration of the	
		anterior horn cells	
с		Neurosyphilis is associated with microglial proliferation in the cortex and iron deposition	
d		Plasma cells may be present in the CSF of patients with neurosyphilis	
e		All answers are correct	
Po	liov	irus has the greatest affinity for which type of cell?	
a		Cells in the dorsal root ganglion	
b		Cells in the pons	
		cens in the poins	
c		Cells in the intermediolateral (IML) column	

e		None of the above			
CS	CSF PCR analysis for which of the following viruses is often positive in patients with AIDS-associated primary				
CN	CNS lymphoma and is a sensitive indicator of this tumor?				
а		CMV			
b	*	EBV			
с		Human herpesvirus type 6 (HHV-6)			
d		JC virus			
e		All of the above			
W	hich	of the following organisms infects the CNS via fast retrograde axonal transport from muscle and is			
ass	socia	ated with intracytoplasmic intraneuronal inclusions?			
а		CMV			
b		HIV			
с	*	Rabies virus			
d		Bartonella			
e		All of the above			
A	24-v	rear-old man with HIV infection who is taking highly active antiretroviral therapy (HAART) develops			
foc	cal s	eizures. Which anti-epileptic medication should be started?			
а	*	Levetiracetam			
b		Carbamazepine			
c		Phenytoin			
d		Valproic acid			
e		All of the above			
W	hich	of the following statements is false?			
а	*	Doxycycline is the preferred treatment for post-treatment Lyme disease syndrome			
b		Doxycycline is the preferred oral treatment for cranial neuropathy associated with Lyme disease			
c		Encephalomyelitis and encephalonathy due to Lyme disease should be treated with parenteral			
C		antibiotics			
d		Ceftriaxone, penicillin G, or cefotaxime may be used to treat Lyme disease when parenteral treatment is			
		indicated			
e		All answers are correct			
W	hich	of the following diseases is associated with demyelination at the juxtacortical white matter, enlarged			
oli	god	endrocytes containing virions, and bizarre astrocytes?			
a		EBV infection			
b		HIV infection			
с	*	Progressive multifocal leukoencephalopathy (PML)			
d		West Nile virus infection			
e		All of the asbove			
Su	bacı	te sclerosing panencephalitis is the name for a chronic infection with which of the following viruses?			
a	*	Measles virus			
b		Mumps virus			
с		Rubella virus			
d		Varicella virus			
e		None of the above			
Co	wdr	y A bodies are not associated with which of the following diseases?			
а		Herpes			
b		Subacute sclerosing panencephalitis (SSPE)			
с		CMV			
d	*	Polio			
e		All of the above			
W	hich	type of inflammation is found in patients with prion infections?			
a		Eosinophils			
b		Lymphocytes			
·					

c		Polymorphonuclear lymphocytes
d		Multinucleated giant cells
e	*	None of the above
Wl	hich	of the following features is more characteristic of variant Creutzfeldt-Jakob disease than of sporadic
Cre	eutz	feldt-Jakob disease?
a	*	Florid plaques
b		Increased signal in the basal ganglia and/or cortical ribbon
с		Periodic sharp wave complexes on EEG
d		Shorter clinical course
e		All of the above
W	hich	of the following viruses causes T-cell leukemia and tropical spastic paraparesis?
а		CMV
b		EBV
с		HIV
d	*	Human T-cell lymphotropic virus-1 (HTLV-1)
e		All of the above
Α	70-	year-old woman presents with chronic severe headache, weight loss, anemia, and aching shoulders.
Wl	hich	test should be performed first?
a	*	Erythrocyte sedimentation rate (ESR)
b		Thyroid-stimulating hormone
с		Liver function tests
d		Reticulocyte count
e		All of the above
A	14-y	rear-old presents with worsening headaches. He denies photophobia and phonophobia but endorses
VO	miti	ng. The headaches are most severe when he awakens. They worsen when he bends over to put on his
sho	bes	in the morning. The physical examination, including funduscopy, is normal. Which of the following
sho	ould	be done first?
а		Prescribe ondansetron and obtain a headache diary
b	*	MRI of the brain
с		Trial of sumatriptan
d		Initiate topiramate
e		All of the above
Αź	20-у	rear-old woman presents with weekly headaches for the past 4 months. She has a feeling of pressure on
bot	th si	des of her head. The pain is mild to moderate and lasts an hour. She is able to continue her activities but
los	es h	er appetite. She has some photophobia. The funduscopic examination is normal. What is the most likely
dia	Igno	sis?
а		Cluster headache
b		Migraine headache
С	*	Tension-type headache
d		Pseudotumor cerebri
e		None of the above
A	mot	her brings in her 7-year-old son because she thinks he has migraines. He also tends to get motion
sic	kne	ss. Which of the following suggests a diagnosis other than migraine?
a		He has bilateral pain
b	<u> </u>	He does not complain of photophobia
C	*	He has occipital pain
d		He tends to get motion sickness
e		None of the above
Wl	hich	of the following is more typical of migraine without aura than of migraine with aura?
a		Cortical spreading depression
b	*	A relationship to the menstrual cycle
С		Increased risk for ischemic stroke

d		Visual changes		
e		All of the above		
A	A 9-year-old boy presents with a 3-month history of headaches. He has severe pain at his right temple, nausea,			
and	and photophobia. The headaches start before lunch, can last all day, and do not respond to acetaminophen,			
wh	nich	he takes when he gets home from school. The headaches are occurring at least twice a week. Which of		
the	e foll	lowing is recommended?		
а	*	Start a preventive medication		
b		Prescribe acetaminophen with codeine for severe headaches		
с		Prescribe butalbital for severe headaches		
d		Prescribe prednisone		
e		All of the above		
An	18-v	ear-old patient presents with episodes of unsteadiness, double vision, and dysarthria. These are typically		
fol	low	ed by headache. Computed tomography (CT) of the head and the results of laboratory studies are normal.		
WI	hich	of the following is the most likely cause?		
а		Abdominal migraine		
b		Benign paroxysmal vertigo		
c		Exploding head syndrome		
d	*	Migraine with brainstem aura		
e		None of the above		
W	hat i	s the mechanism of action of sumatrintan?		
3		It is a 5-HT1A recentor antagonist		
h	*	It is a 5-HT1D receptor agonist		
C C		It is a 5-HT $2A/2C$ recentor antagonist		
d		It is a 5-HT3 agonist		
u A		All of the above		
Δ	30_1	ran of the above		
the	A 50-year-old patient with a previous diagnosis of migraines presents with a compraint of dairy neadaches for the next 2 months. Unlike her migraines, these herdeshes are not associated with relater heries are very time. She			
	save the based sches are constant, so she must take iburrefer at least twice daily. Her examination findings are			
say	normal. Which of the following topics needs to be discussed with this patient?			
10		The benefits of nanroven over ibunrofen		
a h		The benefits of alternating ibunraten and acetaminophen		
0 C		The benefits of indomethacin over ibuprofen		
d	*	Medication-overuse beadache		
u A		None of the above		
	$\frac{1}{24}$	where of the above		
A A	24-y	ad like her usual beddeche, with an aura of squiggly lines, and then was followed by threbbing pain		
n a	JEAN	vomiting and photophobia. However, it did not respond to sumatrintan as her headaches usually do		
Пач	usea r loc	y the sum of sum attribution was 2 hours before arrival in the amergency department. Which of the following		
me	dica	tions should be avoided at this time?		
0		Intravenous magnesium		
a h		Metoclopramide		
0	*	Dihydroergotamine		
d		Ketorolac		
u e		None of the above		
W/I	hich	of the following conditions may be followed by migraine variants and eventually by migraine with aura		
wh	nen f	be patient is older. (Some cases of this condition have been linked to mutations in $CACNA1A$)		
9	*	Benign paroxysmal torticollis of infancy		
u h	$\left \right $	Enisodic ataxia 1		
0 C		Derovysmal kinesigenic dyskinesia		
L d		Paroxysmal tonic upgaze of infancy		
u e	$\left \right $	All of the above		
	30 1	All of the above		
A.	50-y	that this has happened several times before. Alashel seems to be a trigger. He has beedeches several		
10	JULIS	mai une nas napponou sovorar unos ociore. Alconor scents to de a trigger. He has headaches several [

days in a row, and then they recur about 2 months later. Often they wake him from sleep. On examination, he has ptosis, conjunctival injection, and rhinorrhea ipsilateral to his pain. He appears restless, and he reports that his pain is worse when he lies down. Which of the following is the best treatment option?

а	1	Indomethacin
b	*	Oxygen via a nonrebreather
с		Prednisone
d		Caffeine
e		None of the above
A 3	32-y	ear-old woman presents with episodes of brief, intense pain involving her right cheek and jaw. Applying
ma	keu	p can trigger an attack. After the pain occurs, there is a period of time during which she can apply
ma	keu	p without pain. What is her diagnosis?
a		Hemicrania continua
b		Short-lasting unilateral neuralgiform headache attacks with cranial autonomic features (SUNA)
с		Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT)
d	*	Trigeminal neuralgia
e		None of the above
A 4	15-y	ear-old man presents with recurrent headache when he coughs. He has sudden, bilateral head pain when
he	cou	ghs, lasting for a few seconds. He does not have any other types of headaches. What is the most effective
trea	atme	ent?
a		Antitussives
b	*	Indomethacin
c		Naproxen
d		Verapamil
e		None of the above
ΑZ	26-y	ear-old man presents with a headache that worsens when he stands. He also complains of nausea and
pho	otop	hobia. On examination, he is afebrile and his blood pressure is normal. He does have mild neck stiffness.
MF	RI sł	nows diffuse pachymeningeal enhancement. What is the diagnosis?
a	*	Intracranial hypotension
b		Subarachnoid hemorrhage
с		Viral meningitis
d		Migraine
e		None of the above
Αź	20-у	rear-old woman presents with constant, diffuse headaches; blurry vision; and pulsatile tinnitus. She says
she	is t	rying to be healthy but hates to exercise, so she takes four One-a-Day vitamins per day. She is taking no
oth	er n	nedications. The findings from CT and MRI ordered by her primary care physician were normal. Which
of t	the f	following diagnoses should be suspected?
a	*	Intracranial hypertension
b		Migraine
c		Tension headache
d		Refractive error
e		None of the above
Wł	nich	of the following conditions is characterized by acute onset of a daily headache in which the pain
bec	com	es continuous and unremitting within 24 hours of onset and lasts for longer than 3 months.
a		Colloid cyst of the third ventricle
b	*	New daily persistent headache
c		Thunderclap headache
d		Reversible cerebral vasoconstriction syndrome
e		All of the above
Wł	nich	of the following is the gold standard for diagnosis of small-fiber neuropathy?
a		Electromyography (EMG)
b		Nerve conduction studies (NCS)
С	*	Skin biopsy
d		Sural nerve biopsy

e		None of the above		
Α	A 36-year-old woman reports frequent episodes of brief stabbing pain in the distribution of the maxillary			
div	division of the trigeminal nerve (V2). Which of the following statements is false?			
а		Features that help to distinguish symptomatic trigeminal neuralgia from classic trigeminal neuralgia		
		include sensory deficits and bilateral involvement		
b		If symptomatic trigeminal neuralgia is suspected, MRI or trigeminal reflex testing is reasonable		
с		Carbamazepine and oxcarbazepine are first-line treatments for classic trigeminal neuralgia (no		
		established etiology)		
d	*	Topical ophthalmic anesthesia is helpful in treating classic trigeminal neuralgia		
e		All answers are correct		
A	50-v	ear-old woman with a history of herpes zoster presents with persistent pain despite resolution of the rash		
4 n	nont	hs ago. Which of the following treatments is least likely to be helpful?		
a .		Gabapentin		
h		Lidocaine natch		
0		Nortrintyline		
с 	*	Indomethodin		
u		All of the above		
e		All of the above		
	20-y	ear-old woman with a recent radius fracture presents with pain, weakness, and swelling in her right hand.		
Sn	e rej	the head. Her entire head is excellen. She also reports that the head excepts less than her normal head and		
	oves	the nand. Her entire nand is swollen. She also reports that the nand sweats less than her normal hand and here where the base which of the following is the most likely discrease?		
15 1		Complex regional rate and here		
a 1.	-1.	Complex regional pain syndrome		
D		Poor casting		
c		Dejerine-Roussy syndrome		
d		Radicular pain		
e		None of the above		
Μι	itati	ons in which of the following channels can cause increased pain sensitivity? (Other mutations in this		
cha	anne	I can cause congenital inability to experience pain).		
a		Chloride		
b		Potassium		
с	*	Sodium		
d		Magnesium		
e		All of the above		
A	21-у	vear-old right-handed female student experienced a cold sensation in the left. The feeling lasted 4 to 5		
day	ys ai	nd then slowly went away. Her right lower extremity was fine. Past history includes an episode of optic		
neu	aritis	s in the left eye 2 years ago. One day, her left eye became blurred and her vision went out. In 1 week, her		
vis	ion	returned to normal. Her vision now is 20/MRI of her brain is normal. Examination is significant for brisk		
ref	lexe	s and sustained clonus at the right ankle. Babinski sign is present on the right. Testing is positive for		
oli	gocl	onal bands. The most likely diagnosis in this case is:		
a		Seizure		
b		Transient ischemic attack		
с		Anaplastic astrocytoma		
d	*	Multiple sclerosis		
e		Parkinson's disease		
A	21-y	vear-old right-handed female student experienced a cold sensation in the left. The feeling lasted 4 to 5		
day	ys ai	nd then slowly went away. Her right lower extremity was fine. Past history includes an episode of optic		
neu	aritis	s in the left eye 2 years ago. One day, her left eye vision went out. In 1 week, her vision returned to		
nor	normal. Her vision now is 20/MRI of her brain is normal. Examination is significant for brisk reflexes and			
sus	sustained clonus at the right ankle. Babinski sign is present on the right. Investigation of oligoclonal bands are			
the	:			
a		Wave frequency changes on the EEG during sleep		
b		Markings about the iris		
C		Pathologic features of Alzheimer's disease		

1				
d		Chromosomal markings found with multiple sclerosis (MS)		
e	*	Immunoglobulin patterns in the CSF with MS		
Or	ı bri	skly flexing the neck forward, a patient with MS disease may report:		
a		Dystonic posturing of the legs		
b	*	An electrical sensation radiating down the spine or into the legs		
с		Bilateral wristdrop		
d		Spontaneous evacuation of the bladder and bilateral extensor plantar responses		
e		Rapidly evolving hemifacial pain		
Α	27-y	year-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on		
HA	١AR	T, but stopped taking his medications 8 months ago because he thought that he would be better off. Two		
mo	onth	s ago he was successfully treated for Pneumocystis carinii pneumonia. A papovavirus infection of the		
cer	ntral	nervous system (CNS) in this person would be most likely to produce:		
a		Adrenoleukodystrophy		
b		Multiple sclerosis		
с		Subacute sclerosing panencephalitis (SSPE)		
d	*	Progressive multifocal leukoencephalopathy (PML)		
e		Metachromatic leukodystrophy		
Α	3-m	onth-old child has a rapid regression of psychomotor function and loss of sight. There is increased		
uri	nary	v excretion of N-acetyl-L-aspartic acid. A preliminary diagnosis of Canavan's disease (Canavan-van		
Bo	gae	rt-Bertrand disease: spongy degeneration of infancy) is made. This is a demyelinating disease that		
pro	oduc	res retardation in infants, is inherited in an autosomal recessive pattern, and results in:		
a		Anencephaly		
b		Microcephaly		
c		Porencephaly		
d	*	Macrocephaly		
e		Dolichocephaly		
Δ	58-1	vear-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of		
nr	ore	ssive spastic paraparesis than appear incontinence of urine numbress in the right toes more than the left		
an	d na	in the thighs and back. Surgical clipping of the aneurysm 3 months ago failed to help his symptoms		
W	hich	of the following would be the most appropriate next diagnostic test?		
3		Cerebral angiography		
h		Spinal angiography		
C	*	MRL of the spinal cord		
d		Spinal cord biopsy		
u A		VEP		
	23 1	ver old woman awakans with bilateral lag weakness and numbrass urinary retention, and impaired		
ho	$\frac{23}{2}$	control. She has had several episodes of blurred vision over the previous 2 years, but these had always		
be	an ai	ttributed to idionathic papillitis (SELECT 1 DIAGNOSIS):		
00	×	Neuromyelitis ontice (Devic's disease)		
a h		Contral pontine muslinelusis		
0		Marahiafaya Bignami digaaga		
<u>c</u>		Marchialava-Digitalii uisease		
u		Delizaeus Merzhaeher diesese		
e T		Pelizaeus-Meizoacher disease		
	VO W	eeks after recovering from a febrile filness a 19-year-old man complains of headache and heck stiffness.		
AI		ansize MDL reveals wides read demand to the white matter of the corebral herright (calest 1)		
	unresponsive. MRI reveals widespread damage to the white matter of the cerebral hemispheres. (select 1			
	igno	SIS): Neuromusitis entice (Devic's diagona)		
a 1		Central menting menting hereig		
D	$\left - \right $	Ventral pontine myelinolysis		
C	4	Marchialava-Bignami disease		
d	*	Acute disseminated encephalomyelitis		
e	e Pelizaeus-Merzbacher disease			
	\mathbf{h}	rothers A and 7 years of age exhibit limb ataxia nystagmus and mental retardation MRI of their brains		

reveals areas of abnormal signal in the white matter. Cerebellar involvement is substantial. Both boys also have abnormally low serum cortisol levels. (Select 1 diagnosis): Neuromyelitis optica (Devic's disease) a Central pontine myelinolysis b * Adrenoleukodystrophy с d Acute disseminated encephalomyelitis Pelizaeus-Merzbacher disease e A 54-year-old alcoholic man is brought to the emergency room with profound agitation. He is believed to be suffering from delirium tremens and is treated with thiamine and intravenous fluids. His serum sodium is noted to be markedly depressed, and intravenous supplements are adjusted to rapidly correct this hyponatremia. He becomes acutely quadriplegic and unresponsive and dies within 24 h. (select 1 diagnosis): Neuromyelitis optica (Devic's disease) a Central pontine myelinolysis b * Marchiafava-Bignami disease с Acute disseminated encephalomyelitis d Pelizaeus-Merzbacher disease e A 35-year-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not receive steroids at that time. During relapse of disease he received steroids at that time. He began interferon-1A 4 years ago. One year ago, he developed right leg weakness, constipation, and urinary urgency. He received steroids at that time as well. He now presents with new symptoms that concern him about the start of a new flare (decreased sensation in the palm of his right hand that is worse when he exercises, diminished sensation

along the lower right trunk in the front and back). Examination findings include full visual fields with a left afferent pupillary defect. Hypoesthesia over roughly the T8 to T12 dermatomes. The most appropriate pharmacological treatment for this patient at this time is: Interferon-1B a

b * Corticosteroids

с Gabapentin Glatiramer

d Pramipexole e

Past history of patient includes an episode of optic neuritis in the left eye 2 years ago. Finger tapping, rapid alternating movements, finger-nose-finger, and heel tapping to shin are normal. The evoked response pattern that is most often abnormal in patients with early Multiply Sclerosis is the:

a		Brainstem auditory evoked response (BAER)
b		Far-field somatosensory evoked response (SSER)
с	*	Visual evoked response (VER)
d		Jolly test
e		Sensory nerve conduction test

A 37-year-old woman with progressive multiple sclerosis is being admitted for intravenous glucocorticoid

therapy. She was diagnosed with multiple sclerosis 10 years ago after presenting with bilateral decreased visual acuity. She had an abnormal MRI at that time. She has been hospitalized approximately nine times since presentation with her relapse. For the past 2 years she has been on cyclophosphamide and methylprednisolone, originally every 4 weeks, and now every 6 weeks, with the last treatment 1 month ago. For the 2 months prior to admission, the patient mild unsteadiness walking and other neurological symptom of defeact. Included among her admission orders should be: Heart healthy diet

b	*	Ranitidine 150 mg bid
а		Heart-healthy diet

Neurological checks every hour for the first 48 h С

d Placement of central venous line

Stat head CT for change in mental status e

A 29-year-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on HAART, but stopped taking his medications 8 months ago because he thought that he would be better off. Two months ago he was successfully treated for *Pneumocystis carinii* pneumonia. A papovavirus infection of the central nervous system (CNS) in this person would be most likely to produce:

a		Adrenoleukodystrophy	
b		Multiple sclerosis	
с		Subacute sclerosing panencephalitis (SSPE)	
d	*	Progressive multifocal leukoencephalopathy (PML)	
e		Metachromatic leukodystrophy	
A	58-v	vear-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of	
pro	ogre	ssive spastic paraparesis. He has recently had urge incontinence of urine, numbress in the right toes more	
tha	n th	e left, and pain in the thighs and back. He was referred when surgical clipping of the aneurysm 3 months	
200	o fai	led to help his symptoms. Cystometrographic analysis of bladder function in this patient is likely to show	
wh	ich	of the following abnormalities?	
a		Bladder hypotonia	
h		Large residual volume of urine	
C	*	Premature bladder emptying	
d		Good voluntary control of bladder emptying	
u		Uninersy treat infection	
e ^	2	Officially fract infection	
A	3-II	ionth-old child with demyelinating disease that produces relardation in infants, is inherited in an	
aut	.0801 hia	har recessive pattern. Three months later, the patient has worsening leg weakness. He has severe spasms	
01	nis	legs bilaterally, and is increasingly unable to ambulate because of this. A reasonable symptomatic	
trea	atme	Create where the write the following?	
a 1	4	Cyclopnosphamide	
b	Ť	Bacloten	
с		Gabapentin	
d		Amitriptyline hydrochloride	
e		Propranolol	
Α	3-m	onth-old child has a rapid regression of psychomotor function and loss of sight. There is increased	
uri	nary	v excretion of N-acetyl-L-aspartic acid. A preliminary diagnosis of Canavan's disease (Canavan-van	
Bo	gaei	rt-Bertrand disease; spongy degeneration of infancy) is made. This is a demyelinating disease that	
pro	oduc	es retardation in infants, is inherited in an autosomal recessive pattern. Which of the following factors	
mi	ght l	be expected to worsen his condition?	
Α		Bright lights	
В		Red wine	
С		Tyramine-containing compounds	
D	*	Hot weather	
E		Amantadine	
Α	23-y	year-old woman awakens with bilateral leg weakness and numbness, urinary retention, and impaired	
bo	wel	control. She has had several episodes of blurred vision over the previous 2 years, but these had always	
bee	en af	ttributed to idiopathic papillitis. (select 1 diagnosis):	
Α	*	Neuromyelitis optica (Devic's disease)	
В		Central pontine myelinolysis	
С		Marchiafava-Bignami disease	
D		Acute disseminated encephalomyelitis	
Е		Pelizaeus-Merzbacher disease	
Tw	o w	weeks after recovering from a febrile illness, a 19-year-old man complains of headache and neck stiffness.	
Th	ese	complaints are associated with fever and are soon followed by deteriorating cognitive function. He	
bec	com	es disoriented, lethargic, and increasingly unresponsive. MRI reveals widespread damage to the white	
ma	tter	of the cerebral hemispheres. (select 1 diagnosis):	
Α		Neuromvelitis optica (Devic's disease)	
B		Central pontine myelinolysis	
$\frac{2}{C}$		Marchiafaya-Bignami disease	
$\overline{\mathbf{D}}$	*	Acute disseminated encephalomyelitis	
F	F Pelizaeus-Merzbacher disease		
<u>Г</u> Тч	Two brothers 4 and 7 years of age exhibit limb ataxia investormus and mental retardation MRI of their brains		
	reveals areas of abnormal signal in the white matter. Cerebellar involvement is substantial. Both boys also have		
160	cais		

abı	abnormally low serum cortisol levels. (select 1 diagnosis):			
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A	35-1	rear-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not		
rec	eive	e steroids at that time. During relapse of disease he received steroids at that time. He began interferon-1A		
4 1	<i>lear</i>	s ago. One year ago, he developed right leg weakness, constination, and urinary urgency. He received		
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fla	re (a	decreased sensation in the palm of his right hand that is worse when he exercises diminished sensation		
alo	no	the lower right trunk in the front and back) Examination findings include full visual fields with a left		
aff	eren	t pupillary defect. Hypoesthesia over roughly the T8 to T12 dermatomes. The most appropriate		
ph	arm	acological treatment for this nation at this time is:		
A		Interferon-1B		
R	*	Corticosteroids		
C		Gabapentin		
		Glatiramer		
		Draminavala		
E	aor	tenning renid alternating movements finger nose finger and heal tenning to ship are normal. The		
	lgei	tapping, fapid alternating movements, finger-nose-finger, and neer tapping to similate normal. The		
	JKEC	Projector auditory avalad response (PAED)		
A D		For field comptocomposite unlead response (SSED)		
D	*	Viewal avalant area area (VED)		
		Visual evoked response (VEK)		
		Jolly test		
E	20	Sensory nerve conduction test		
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and	i pa	in the thighs and back. Surgical clipping of the aneurysm 3 months ago failed to help his symptoms.		
W I	ncn	Combined on air arranhy		
a h				
D	*	Spinal anglography MDL of the optimal courd		
C				
a		Spinal cord biopsy		
e	50			
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He	He has severe spasms of his legs bilaterally and is increasingly unable to ambulate because of this A			
rea	reasonable symptomatic treatment option would be which of the following?			
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h	*	Baclofen		
C		Gabapentin		
d		Amitrintyline hydrochloride		
u A		Propranolol		
W	hich	of the following factors might be expected to worsen condition patient with Multiply Sclerosis?		
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ref	lexe	s and sustained clonus at the right ankle. Babinski sign is present on the right. Testing is positive for		
oli	gocl	onal bands. The most likely diagnosis in this case is:		
a		Seizure		
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b		Markings about the iris			
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a		Dystonic posturing of the legs			
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a		Glucose content of less than 20% of the serum content			
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nev	w sy	mptoms that concern him about the start of a new flare (decreased sensation in the palm of his right hand			
tha	t is	worse when he exercises, diminished sensation along the lower right trunk in the front and back).			
Ex	ami	nation findings include full visual fields with a left afferent pupillary defect. Hypoesthesia over roughly			
the	T8	to T12 dermatomes. The evoked response pattern that is most often abnormal in patients with early MS			
is t	he:				
a		Brainstem auditory evoked response (BAER)			
b		Far-field somatosensory evoked response (SSER)			
c	*	Visual evoked response (VER)			
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c		Gabapentin			
d		Glatiramer			
e		Pramipexole			

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det	erio	rating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals
wic	lesp	read damage to the white matter of the cerebral hemispheres. (select 1 diagnosis):
a		Neuromyelitis optica (Devic's disease)
b		Central pontine myelinolysis
С		Marchiafava-Bignami disease
d	*	Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
Α :	54-y	rear-old alcoholic man is brought to the emergency room with profound agitation. He is believed to be
suf	feriı	ng from delirium tremens and is treated with thiamine and intravenous fluids. His serum sodium is noted
to	be n	narkedly depressed, and intravenous supplements are adjusted to rapidly correct this hyponatremia. He
bec	com	es acutely quadriplegic and unresponsive and dies within 24 h. (select 1 diagnosis):
a		Neuromyelitis optica (Devic's disease)
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olig	gocl	onal bands. The most likely diagnosis in this case is:
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a		Dystonic posturing of the legs	
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and	l pa	in the thighs and back. Surgical clipping of the aneurysm 3 months ago failed to help his symptoms.	
Wł	nich	of the following would be the most appropriate next diagnostic test?	
a		Cerebral angiography	
b		Spinal angiography	
с	*	MRI of the spinal cord	
d		Spinal cord biopsy	
e		VER	
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DU	due	n-bentration in inforts, is inherited in an outcome l recessive pattern, and results in:	
pre	Juuc	A sequence holy.	
a 1		Anencephary	
b		Microcephaly	
c		Porencephaly	
d	*	Macrocephaly	
e		Dolichocephaly	
A	58-3	year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of	
pro	ogre	ssive spastic paraparesis, than appear incontinence of urine, numbness in the right toes more than the left,	
and	d pa	in in the thighs and back. Surgical clipping of the aneurysm 3 months ago failed to help his symptoms.	
W	hich	of the following would be the most appropriate next diagnostic test?	
a		Cerebral angiography	
b		Spinal angiography	
с	*	MRI of the spinal cord	
d		Spinal cord biopsy	
e		VER	
Α	23-3	year-old woman awakens with bilateral leg weakness and numbness, urinary retention, and impaired	
bo	wel	control. She has had several episodes of blurred vision over the previous 2 years, but these had always	
bee	en a	ttributed to idiopathic papillitis. (select 1 diagnosis):	
а	*	Neuromyelitis optica (Devic's disease)	
b		Central pontine myelinolysis	
c		Marchiafava-Bignami disease	
d		Acute disseminated encephalomyelitis	
e		Pelizaeus-Merzbacher disease	
Тм	/0 V	veeks after recovering from a febrile illness associated with a productive cough, a 19-year-old man	
co	mpla	ains of headache and neck stiffness. These complaints are associated with fever and are soon followed by	
deteriorating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals			
wi	desr	bread damage to the white matter of the cerebral hemispheres. (select 1 diagnosis):	
а		Neuromvelitis optica (Devic's disease)	
b		Central pontine myelinolysis	
c		Marchiafaya-Bignami disease	
d	*	Acute disseminated encephalomyelitis	
ρ		Pelizaeus-Merzhacher disease	
<u>с</u> Тт	h	rothers 1 and 7 years of age exhibit limb stavia nystagmus and montal raterdation MDI of their brains	
1 W	reveals areas of abnormal signal in the white matter. Carabellar involvement is substantial. Both boys also have		
101	Cars	, areas or abnormal signal in the winter matter. Corebenal involvement is substantial, both boys also have	

abr	orn	nally low serum cortisol levels. (select 1 diagnosis):
a		Neuromvelitis optica (Devic's disease)
b		Central pontine myelinolysis
с	*	Adrenoleukodystrophy
d		Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
А	54-1	year-old alcoholic man with profound agitation was treated with thiamine and intravenous fluids. His
ser thi	um s hy	sodium is noted to be markedly depressed, and intravenous supplements are adjusted to rapidly correct yponatremia. He becomes acutely quadriplegic and unresponsive and dies within 24 h. (select 1
dia	gno	
a		Neuromyelitis optica (Devic's disease)
b	*	Central pontine myelinolysis
С		Marchiafava-Bignami disease
d		Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
Α.	35-у	ear-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not
rec	eive	e steroids at that time. During relapse of disease he received steroids at that time. He began interferon-IA
4 y	/ears	s ago. One year ago, he developed right leg weakness, constipation, and urinary urgency. He received
ste	roid	s at that time as well. He now presents with new symptoms that concern him about the start of a new
	re (c	tecreased sensation in the pair of his right hand that is worse when he exercises, diminished sensation
alo	ng i	the lower right trutk in the front and back). Examination findings include full visual fields with a fet
all		a pupiliary defect. Hypoestnesia over foughly the 18 to 112 definationes. The most appropriate
<u>pna</u>		Interferen 1P
a h	*	Corticosteroids
0 C		Gabapentin
$\frac{c}{d}$		Glatiramer
u A		Praminevole
Dag	et hi	story of patient includes an episode of optic neuritis in the left eve 2 years ago. Finger tanning, rapid
alte	erna	ting movements finger-nose-finger and heel tanning to shin are normal. The evoked response pattern
tha	t is	most often abnormal in patients with early Multiply Sclerosis is the:
a		Brainstem auditory evoked response (BAER)
b		Far-field somatosensory evoked response (SSER)
c	*	Visual evoked response (VER)
d		Jolly test
e		Sensory nerve conduction test
A	37-1	vear-old woman with progressive multiple sclerosis is being admitted for intravenous glucocorticoid
the	rapy	y. She was diagnosed with multiple sclerosis 10 years ago after presenting with bilateral decreased visual
acı	iity.	She had an abnormal MRI at that time. She has been hospitalized approximately nine times since
pre	sent	tation with her relapse. For the past 2 years she has been on cyclophosphamide and methylprednisolone,
ori	gina	lly every 4 weeks, and now every 6 weeks, with the last treatment 1 month ago. For the 2 months prior
to	adm	nission, the patient mild unsteadiness walking and other neurological symptom of defeact. Included
am	ong	her admission orders should be:
a		Heart-healthy diet
b	*	Ranitidine 150 mg bid
c		Neurological checks every hour for the first 48 h
d		Placement of central venous line
e		Stat head CT for change in mental status
•	20^{-}	

A 29-year-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on HAART, but stopped taking his medications 8 months ago because he thought that he would be better off. Two months ago he was successfully treated for Pneumocystis carinii pneumonia. A papovavirus infection of the central nervous system (CNS) in this person would be most likely to produce:

Adrenoleukodystrophy a

b	Multiple sclerosis
c	Subacute sclerosing panencephalitis (SSPE)
d *	Progressive multifocal leukoencephalopathy (PML)
e	Metachromatic leukodystrophy
A 58	-vear-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-vear history of
progr	ressive spastic paraparesis, than appear incontinence of urine, numbress in the right toes more than the left.
and n	pain in the thighs and back. Surgical clipping of the aneurysm 3 months ago failed to help his symptoms.
Cystc	metrographic analysis of bladder function in this patient is likely to show which of the following
abnor	malifies?
a	Bladder hypotonia
b	Large residual volume of urine
c *	Premature bladder emptying
d	Good voluntary control of bladder emptying
e	Urinary tract infection
A 3-r	nonth-old child has a preliminary diagnosis of Canavan's disease (Canavan-yan Bogaert-Bertrand disease:
spond	y degeneration of infancy) is made. This is a demyelinating disease that produces retardation in infants is
inheri	ited in an autosomal recessive nattern. Three months later, the national has worsening leg weakness. He has
sever	e snasms of his legs bilaterally and is increasingly unable to ambulate because of this. A reasonable
symn	tomatic treatment option would be which of the following?
a	Cyclophosphamide
h *	Baclofen
C	Gabapentin
d	Amitrintyline hydrochloride
e	Propranolol
	month-old child has a rapid regression of psychomotor function and loss of sight. There is increased
	ry excretion of N-acetyl-L-aspartic acid. A preliminary diagnosis of Canavan's disease (Canavan-yan
Boga	ert-Bertrand disease: spongy degeneration of infancy) is made. This is a demyelinating disease that
produ	ices retardation in infants is inherited in an autosomal recessive pattern. Which of the following factors
might	t be expected to worsen his condition?
a	Bright lights
b	Red wine
c	Tyramine-containing compounds
d *	Hot weather
e	Amantadine
A 23	-vear-old woman awakens with bilateral leg weakness and numbress urinary retention and impaired
howe	I control. She has had several episodes of blurred vision over the previous 2 years but these had always
been	attributed to idionathic papillitis (Select 1 diagnosis):
	Neuromyelitis ontica (Devic's disease)
h	Central pontine myelinolysis
C	Marchiafaya-Bignami disease
d	Acute disseminated encephalomyelitis
e	Pelizaeus-Merzhacher disease
Two	weeks after recovering from a febrile illness associated with a productive cough a 10-year-old man
comp	lains of headache and neck stiffness. These complaints are associated with fever and are soon followed by
deteri	for a solution of the second sec
wides	spread damage to the white matter of the cerebral hemispheres (Select 1 diagnosis).
a	Neuromyelitis ontica (Devic's disease)
h	Central pontine myelinolysis
C	Marchiafaya-Bignami disease
d *	Acute disseminated encephalomyelitis
e	Pelizaeus-Merzhacher disease
Two	brothers 4 and 7 years of age exhibit limb ataxia investormus and mental retardation MRI of their brains
reves	Is areas of abnormal signal in the white matter. Cerebellar involvement is substantial. Both hove also have
revea	is areas of abnormal signal in the write matter. Cerebenar involvement is substantial. Both boys also have

abr	abnormally low serum cortisol levels. (Select 1 diagnosis):		
a		Neuromyelitis optica (Devic's disease)	
b		Central pontine myelinolysis	
с	*	Adrenoleukodystrophy	
d		Acute disseminated encephalomyelitis	
e		Pelizaeus-Merzbacher disease	
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ster	oid	s at that time as well. He now presents with new symptoms that concern him about the start of a new	
flar	e (c	lecreased sensation in the palm of his right hand that is worse when he exercises, diminished sensation	
alo	ng`t	the lower right trunk in the front and back). Examination findings include full visual fields with a left	
affe	eren	t pupillary defect. Hypoesthesia over roughly the T8 to T12 dermatomes. The most appropriate	
pha	rma	acological treatment for this patient at this time is:	
a		Interferon-1B	
b	*	Corticosteroids	
c		Gabapentin	
d		Glatiramer	
u e		Praminevole	
Das	t hi	story of patient includes an episode of optic neuritis in the left ave 2 years ago. Finger tapping, rapid	
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0	1151	Brainstem auditory evoked response (BAEP)	
a b		Ear field sometosonsory evoked response (SSEP)	
0	*	Visual avokad response (VED)	
C J			
a		Jolly test	
e	20	Sensory nerve conduction test	
A	29-y	rear-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on	
HA		1, but stopped taking his medications 8 months ago because he thought that he would be better off. Two	
mo	nths	s ago he was successfully treated for <i>Pneumocystis carinu</i> pneumonia. A papovavirus infection of the	
cen	trai	nervous system (CNS) in this person would be most likely to produce:	
a 1		Adrenoleukodystropny	
b		Multiple sclerosis	
С		Subacute sclerosing panencephalitis (SSPE)	
d	*	Progressive multifocal leukoencephalopathy (PML)	
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A :	58-у	year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of	
pro	gres	ssive spastic paraparesis, than appear incontinence of urine, numbness in the right toes more than the left,	
and	l pai	in in the thighs and back. Surgical clipping of the aneurysm 3 months ago failed to help his symptoms.	
Wh	ich	of the following would be the most appropriate next diagnostic test?	
a		Cerebral angiography	
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d		Spinal cord biopsy	
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tha	than the left, and pain in the thighs and back. He was referred when surgical clipping of the aneurysm 3 months		
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a		Bladder hypotonia	
b		Large residual volume of urine	
c	*	Premature bladder emptying	
-			

d		Good voluntary control of bladder emptying	
e		Urinary tract infection	
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rec	entl	v had urge incontinence of urine, numbress in the right toes more than the left, and pain in the thighs and	
bac		Three months later, the patient has worsening leg weakness. He has severe spasms of his legs bilaterally.	
and	1 is	increasingly unable to ambulate because of this. A reasonable symptomatic treatment option would be	
wh	ich	of the following?	
a		Cyclophosphamide	
b	*	Baclofen	
с		Gabapentin	
d		Amitriptyline hydrochloride	
e		Propranolol	
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d	*	Hot weather	
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a	*	Neuromyelitis optica (Devic's disease)	
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d		Acute disseminated encephalomyelitis	
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Τw	vo v	veeks after recovering from a febrile illness associated with a productive cough, a 19-year-old man	
cor	npla	ains of headache and neck stiffness. These complaints are associated with fever and are soon followed by	
det	erio	orating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals	
wie	desp	bread damage to the white matter of the cerebral hemispheres. (select 1 diagnosis):	
a		Neuromyelitis optica (Devic's disease)	
b		Central pontine myelinolysis	
c		Marchiafava-Bignami disease	
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b		Central pontine myelinolysis	
с	*	Adrenoleukodystrophy	
d		Acute disseminated encephalomyelitis	
e		Pelizaeus-Merzbacher disease	
A	21-y	year-old right-handed female student experienced a cold sensation in the left. The feeling lasted 4 to 5	
day	days and then slowly went away. Her right lower extremity was fine. Past history includes an episode of optic		
neuritis in the left eye 2 years ago. One day, her left eye became blurred and her vision went out. In 1 week, her			
vision returned to normal. Her vision now is 20/MRI of her brain is normal. Examination is significant for brisk			
reflexes and sustained clonus at the right ankle. Babinski sign is present on the right. Testing is positive for			
oli	gocl	onal bands. The most likely diagnosis in this case is:	
a		Seizure	

c Anaplastic astrocytoma d * d * Multiple sclerosis • e Parkinson's disease A 21-year-old right-handed female student experienced a cold sensation in the left. The feeling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Past history includes an episode of optic neuritis in the left eye 2 years ago. One day, her left eye vision went out. In 1 week, her vision returned to normal. Her vision now is 20/MRI of her brain is normal. Examination is significant for brisk reflexes and sustained closus at the right ankle. Babinski sign is present on the right. Oligoclonal bands are the: a Wave frequency charges on the EEG during sleep b Markings about the iris c Pathologic features of Alzheimer's disease d Chromosomal markings found with multiple sclerosis (MS) e Immunoglobulin patterns in the CSF with MS A 21-year-old right-handed female student experienced a cold sensation in the left. The feeling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Past history includes an episode of optic neuritis in the left eye 2 years ago. One day, her left eye became blurred and her vision neutron. In 1 week, her vision returned to normal. Her vision neutron wis 20/MRI of her brain is normal. Examination is significant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right. Testing is positive for oligoclonal bands.	b		Transient ischemic attack
d * Multiple sclerosis e Parkinson's disease A 21-year-old right-handed female student experienced a cold sensation in the left. The feeling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Past history includes an episode of optic neurifits in the left eye 2 years ago. One day, her left eye vision went out. In 1 week, her vision new is 20/MRI of her brain is normal. Examination is significant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right. Oligoclonal bands are the: a Wave frequency changes on the EEG during sleep b Markings about the rins c Pathologic features of Alzheimer's disease d Chromosomal markings found with multiple sclerosis (MS) e * d Chromosomal markings found with multiple sclerosis (MS) e * e * days and then slowly went away. Her right lower extremity was fine. Past history includes an episode of optic neuritis in the left eye 2 years ago. One day, her left eye became blurred and her vision went out. In 1 week, her vision returned to normal. Her vision now is 20/MRI of her brain is normal. Examination is significant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right. Testing is positive for optic optic collabands. On briskly flexing the neck forward, a patient with this disease may report: a Dystonic posturing of the legs	c		Anaplastic astrocytoma
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b Far-field somatosensory evoked response (SSER) c * Visual evoked response (VER) d Jolly test	a		Brainstem auditory evoked response (BAER)
c * Visual evoked response (VER) d Jolly test	h		Far-field somatosensory evoked response (SSER)
d Jolly test	C	*	Visual evoked response (VFR)
d Jony test	d		Iolly test
e Sensory nerve conduction test	e		Sensory nerve conduction test
A 35-year-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not	A	35-v	year-old man with multiple sclerosis initially presented 4 years ago with left eve optic neuritis. He did not
receive steroids at that time. During relanse of disease he received steroids at that time. He began interferon-1A	rec	eive	esteroids at that time. During relapse of disease he received steroids at that time. He began interferon-1A
4 years ago. One year ago, he developed right leg weakness, constitution, and urinary urgency. He received	4 1	vear	s ago. One year ago, he developed right leg weakness constination and urinary urgency. He received
steroids at that time as well. He now presents with new symptoms that concern him about the start of a new	ste	roid	s at that time as well. He now presents with new symptoms that concern him about the start of a new
flare (decreased sensation in the palm of his right hand that is worse when he exercises diminished sensation	fla	re (c	decreased sensation in the palm of his right hand that is worse when he exercises diminished sensation
along the lower right trunk in the front and back) Examination findings include full visual fields with a left	alc	ng f	the lower right trunk in the front and back). Examination findings include full visual fields with a left
afferent pupillary defect. Hypoesthesia over roughly the T8 to T12 dermatomes Finger tapping rapid	aff	eren	t pupillary defect. Hypoesthesia over roughly the T8 to T12 dermatomes Finger tapping rapid
alternating movements, finger-nose-finger, and heel tanning to shin are normal. The most appropriate	alt	erna	ting movements, finger-nose-finger, and heel tapping to shin are normal. The most appropriate
pharmacological treatment for this patient at this time is:	1 111	22 IIU	and action the most most most most uppropriate in the most uppropriate

a		Interferon-1B
b	*	Corticosteroids
с		Gabapentin
d		Glatiramer
e		Pramipexole
A	23-1	vear-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on
HA	ΔR	T but stopped taking his medications 8 months ago because he thought that he would be better off. Two
m	nth	s ago he was successfully treated for <i>Pneumocystis carinii</i> pneumonia. A papovavirus infection of the
Cet	ntral	nervous system (CNS) in this person would be most likely to produce:
2	ni ai	A drenoleukodystronhy
a b		Multiple selerosis
0		Subsouts selerosing nononcerbalitie (SSDE)
C d	*	Subacute scientsing panencephantis (SSPE)
a	*	Progressive multifocal leukoencephalopatny (PML)
e	50	Metachromatic leukodystrophy
Α	58-3	year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of
pro	gre	ssive spastic paraparesis, than appear incontinence of urine, numbress in the right toes more than the left,
and	1 pa	in in the thighs and back. There have been some gradual fluctuations, but no clear, discrete episodes of
det	erio	bration. Surgical clipping of the aneurysm 3 months ago failed to help his symptoms. Which of the
fol	low	ing factors might be expected to worsen his condition?
a		Bright lights
b		Red wine
с		Tyramine-containing compounds
d	*	Hot weather
e		Amantadine
Тw	vo v	weeks after recovering from a febrile illness associated with a productive cough, a 17-year-old man
coi	npla	ains of headache and neck stiffness. These complaints are associated with fever and are soon followed by
det	erio	prating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals
wi	desp	bread damage to the white matter of the cerebral hemispheres. (select 1 diagnosis):
а		Neuromyelitis optica (Devic's disease)
b		Central pontine myelinolysis
с		Marchiafaya-Bignami disease
d	*	Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
A	54-1	vear-old alcoholic man with profound agitation was treated with thiamine and intravenous fluids. His
ser	um	sodium is noted to be markedly depressed and intravenous supplements are adjusted to rapidly correct
thi	um s hv	vponatremia. He becomes acutely guadrinlegic and unresponsive and dies within 24 h (select 1
dia	5 Π. σηο	sponarchina. The occomes acutery quadriplegic and unresponsive and unes within 24 n. (select 1
010	gno	Neuromyelitis ontica (Devic's disease)
a h	*	Central pontine myelinelyzis
0		Verchiefeve Dignomi digeoge
C		
a		Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
A	21-y	year-old right-handed female student experienced a cold sensation in the left. The feeling lasted 4 to 5
day	/s ai	nd then slowly went away. Her right lower extremity was fine. Past history includes an episode of optic
neu	iriti	s in the left eye 2 years ago. One day, her left eye vision went out. In 1 week, her vision returned to
nor	ma	I. Her vision now is 20/MRI of her brain is normal. Examination is significant for brisk reflexes and
sus	tain	ned clonus at the right ankle. Babinski sign is present on the right. Oligoclonal bands are the in CSF. The
mo	st li	ikely diagnosis in this case is:
a		Seizure
b		Transient ischemic attack
c		Anaplastic astrocytoma
d	*	Multiple sclerosis
e		Parkinson's disease

On	bri	skly flexing the neck forward, a patient with MS disease may report:	
a		Dystonic posturing of the legs	
b	*	An electrical sensation radiating down the spine or into the legs	
с		Bilateral wristdrop	
d		Spontaneous evacuation of the bladder and bilateral extensor plantar responses	
e		Rapidly evolving hemifacial pain	
A	20-у	vear-old right-handed female student experienced a cold sensation in the left. The feeling lasted 4 to 5	
day	ys ai	nd then slowly went away. Her right lower extremity was fine. Past history includes an episode of optic	
neu	ariti	s in the left eye 2 years ago. One day, her left eye vision went out. In 1 week, her vision returned to	
nor	rmal	. Her vision now is 20/MRI of her brain is normal. Examination is significant for brisk reflexes and	
sus	tain	ed clonus at the right ankle. Babinski sign is present on the right. The CSF this persons with multiple	
scl	eros	is will typically exhibit:	
a		Glucose content of less than 20% of the serum content	
b		Persistently elevated total protein content	
с	*	Persistently elevated immunoglobulin G (IgG) content	
d		Mononuclear cell counts of greater than 100 cells per/L	
e		Erythrocyte counts of greater than 10 cells per/L	
Α.	35-у	rear-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not	
rec	eive	e steroids at that time. During relapse of disease he received steroids at that time. He began interferon-1A	
4 y	/ears	s ago. One year ago, he developed right leg weakness, constipation, and urinary urgency. He received	
ste	roid	s at that time as well. He now presents with new symptoms that concern him about the start of a new	
fla	re (c	decreased sensation in the palm of his right hand that is worse when he exercises, diminished sensation	
alo	ng t	the lower right trunk in the front and back). Examination findings include full visual fields with a left	
aff	eren	t pupillary defect. Hypoesthesia over roughly the 18 to 112 dermatomes. The most appropriate	
pna	arma	acological treatment for this patient at this time is:	
a 1.	*	Interferon-IB	
D	~	Controsteroids	
C d		Clatinemen	
a		Draminavala	
e Do	t hi	Prainipexole	
ra:	st III	ting movements, finger nose finger, and heal tanning to shin are normal. The available response pattern	
tha		most often abnormal in patients with early Multiply Sclerosis is the:	
2	. 15	Brainstem auditory evoked response (BAER)	
a h		Ear-field sometosensory evoked response (SSER)	
0	*	Visual evoked response (VEP)	
d	-	Visual evoked response (VER)	
u A		Sensory nerve conduction test	
Δ	58-1	vear-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a A-year history of	
	JO-y	ssive spastic paraparesis than appear incontinence of urine numbress in the right toes more than the left	
and	i na	in in the thighs and back. Surgical clipping of the aneurysm 3 months ago failed to help his symptoms	
W	ich	of the following would be the most appropriate next diagnostic test?	
a		Cerebral angiography	
h		Spinal angiography	
c	*	MRI of the spinal cord	
d		Spinal cord biopsy	
e		VER	
A 58-year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of			
progressive spastic paraparesis, than appear incontinence of urine. numbress in the right toes more than the left.			
and	and pain in the thighs and back. Surgical clipping of the aneurysm 3 months ago failed to help his symptoms.		
Wł	Which of the following would be the most appropriate next diagnostic test? Which of the following factors		
mi	might be expected to worsen his condition?		
a		Bright lights	

b		Red wine
c		Tyramine-containing compounds
d	*	Hot weather
e		Amantadine
A	25-1	vear-old woman awakens with bilateral leg weakness and numbness, urinary retention, and impaired
boy	wel	control. She has had several episodes of blurred vision over the previous 2 years, but these had always
bee	en at	ttributed to idiopathic papillitis. (select 1 diagnosis):
a	*	Neuromvelitis optica (Devic's disease)
b		Central pontine myelinolysis
с		Marchiafava-Bignami disease
d		Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
Tw	vo v	veeks after recovering from a febrile illness associated with a productive cough, a 29-year-old man
cor	npla	ains of headache and neck stiffness. These complaints are associated with fever and are soon followed by
det	erio	rating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals
wie	desp	bread damage to the white matter of the cerebral hemispheres. (select 1 diagnosis):
a		Neuromyelitis optica (Devic's disease)
b		Central pontine myelinolysis
с		Marchiafava-Bignami disease
d	*	Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
Τw	o b	rothers, 5 and 8 years of age, exhibit limb ataxia, nystagmus, and mental retardation. MRI of their brains
rev	reals	s areas of abnormal signal in the white matter. Cerebellar involvement is substantial. Both boys also have
abr	norn	nally low serum cortisol levels. (select 1 diagnosis):
a		Neuromyelitis optica (Devic's disease)
b		Central pontine myelinolysis
c	*	Adrenoleukodystrophy
d		Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
A 6	57-y	year-old woman with a history of type II diabetes mellitus and atrial fibrillation presents to the emergency
roc	om v	with right body weakness and slurred speech. The onset was sudden. She is taking warfarin. Physical
exa	am f	findings include blood pressure of 205/90 and irreglarly irregular heart beat. There is left side neglect
wit	th sl	lurred speech. There is a weakness of the right body, with the face and upper extremity worse than the
lov	ver e	extremity. Routine chemistries and cell counts are normal. Which of the following should be done next?
a		Administer tissue plasminogen activator
b		Call a vascular surgery consult for possible endarterectomy
С	*	Order a brain CT
d		Order a cerebral angiogram
e		Start heparin
Th	e pa	tient has an MRI that is consistent with an acute stroke. The most common cause of stroke is:
a	*	Atherosclerosis
b		Fibromuscular dysplasia
C 1		Mitral valve prolapse
d		Arterial dissection
e		Meningovascular inflammation
A	oure	motor stroke is most likely with damage to the:
a	*	Internal capsule
b		Cerebellum
C		Putamen
d		
e		Amygdala
A	oure	e sensory stroke is most likely with damage to the:
a		Internal capsule

b	*	Thalamus
c		Hippocampus
d		Globus pallidus
e		Pons
A 61-year-old man with a history of hypertension has been in excellent health until he presents with vertico and		
unsteadings lasting for 2 days. He then develops nauses vomiting dysphagia hoarseness stavia left facial		
pain and right-sided sensory loss. There is no weakness. On examination he is alert with a normal mental		
status. He vomits with head movement. There is skew deviation of the eves left prosis, clumsiness of the left		
arm and titubation. He has loss of nin and temperature sensation on the right arm and leg and decreased joint		
position sensation in the left foot. He is unable to walk Magnetic resonance imaging (MRI) in this patient		
mi	aht	he expected to show which of the following?
	gni	Regiler entery tip enouryer
a b		Dashar artery up andulyshi Dight lateral modullary inforction
0	*	Left lateral medullary information
C I		Left natial medunary information
a		Di 1 (
e		Right medial medullary infarction
A	51-y	rear-old man with a history of hypertension has been in excellent health until he presents with vertigo and
uns	stea	ainess lasting for 2 days. He then develops nausea, vomiting, dysphagia, hoarseness, ataxia, left facial
pai	n, a	ind right-sided sensory loss. There is no weakness. On examination, he is alert, with a normal mental
sta	tus.	He vomits with head movement. There is skew deviation of the eyes, left ptosis, clumsiness of the left
arm, and titubation. He has loss of pin and temperature sensation on the right arm and leg and decreased joint		
position sensation in the left foot. He is unable to walk. The dysphagia in this case is secondary to involvement		
of	whi	ch of the following structures?
a		Nucleus solitarius
b		Nucleus and descending tract of CN V5
с	*	Nucleus ambiguus
d		Lateral spinothalamic tract
e		Inferior cerebellar peduncle
A 61-year-old man with a history of hypertension has been in excellent health until he presents with vertigo and		
unsteadiness lasting for 2 days. He then develops nausea, vomiting, dysphagia, hoarseness, ataxia, left facial		
pain, and right-sided sensory loss. There is no weakness. On examination, he is alert, with a normal mental		
status. He vomits with head movement. There is skew deviation of the eyes, left ptosis, clumsiness of the left		
arm, and titubation. He has loss of pain and temperature sensation on the right arm and leg and decreased joint		
position sensation in the left foot. He is unable to walk. Occlusion of which of the following arteries typically		
produces this syndrome?		
a		Basilar artery
b	*	Vertebral artery
С		Superior cerebellar artery
d		Anterior inferior cerebellar artery (AICA)
e		Anterior spinal artery
A 75-year-old man with a history of recent memory impairment is admitted with headache, confusion, and a left		
homonymous hemianopsia. He has recently had two episodes of brief unresponsiveness. There is no history of		
hypertension. Computed tomography (CT) scan shows a right occipital lobe hemorrhage with some		
subarachnoid extension of the blood. An MRI scan with gradient echo sequences reveals foci of hemosiderin in		
the	rig	ht temporal and left frontal cortex. The likely cause of this patient's symptoms and signs is:
a		Gliomatosis cerebri
b		Multi-infarct dementia
с		Mycotic aneurysm
d	*	Amyloid angiopathy
e		Undiagnosed hypertension
A 22-year-old male abuser of intravenous heroin complains of severe headache while having sexual intercourse.		
Within a few minutes of that complaint, he develops right-sided weakness and becomes stuporous. His		
neurologic examination reveals neck stiffness as well as right arm and face weakness. An unenhanced		
emergency CT scan reveals a lesion of 3 to 4 cm in the cortex of the left parietal lobe. The addition of contrast enhancement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the lesion in the left parietal lobe. The diagnostic study most likely to establish the basis for this patient's neurologic deficits is:

uci	ICIU	5 15.				
a	*	Cerebrospinal fluid (CSF) examination				
b		Electroencephalography				
c		Nerve conduction studies				
d		Cardiac catheterization				
e	HIV antibody testing					
Th	e pa	ttient's HIV antigen test is positive, but he has no depression of his CD4 (helper) T lymphocyte count.				
Ne	rve	conduction studies reveal generalized slowing in the legs, and EEG exhibits depressed voltage over the				
left	t pai	rietal lobe. Cardiac catheterization suggests aortic valve disease, and his CSF is xanthochromic (yellow).				
Th	e pro	obable site of injury in the CNS is:				
a	*	An arterial wall				
b		The ventricular endothelium				
с		The pia arachnoid				
d		The dura mater				
e		The perivenular space				
Wi	thin	1 day of admission, the patient's right-sided weakness began to abate, and within 1 week it completely				
res	olve	ed. On the fourth day of hospitalization, the patient abruptly lost consciousness and exhibited clonic				
mo	ven	nents starting in his right side and generalizing to his left side. The movements stopped within 3 min, but				
he	had	residual right-sided weakness for 24 h. CT scan was unchanged from that obtained on admission. The				
mo	st a	ppropriate treatment to institute involves:				
a		Heparin				
b		Recombinant tissue plasminogen activator (r-TPA)				
c	*	Phenytoin (anticonvulsant)				
d		Warfarin				
e		Aspirin				
Wi	thin	1 day of admission, the patient's right-sided weakness began to abate, and within 1 week it completely				
res	olve	ed. On the fourth day of hospitalization, the patient abruptly lost consciousness and exhibited clonic				
mo	ven	nents starting in his right side and generalizing to his left side. The movements stopped within 3 min, but				
he	had	residual right-sided weakness for 24 h. CT scan was unchanged from that obtained on admission. The				
foc	al w	veakness lasting for 24 h was most likely attributable to:				
a		Intracerebral hemorrhage				
b		Subarachnoid hemorrhage				
с		Encephalitis				
d	*	Todd's paralysis				
e		Hyponatremia				
A 72-year-old woman has the abrupt onset of right face and hand weakness, disturbed speech production, and a						
rig	ht h	omonymous hemianopsia. This is most likely attributable to occlusion of the:				
a	*	Left middle cerebral artery				
b		Left anterior cerebral artery				
С		Left vertebrobasilar artery				
d		Right anterior choroidal artery				
e	e Left posterior inferior cerebellar artery (PICA)					
A 39-year-old woman has diplopia several times a day for 6 weeks. She consults a physician when the double						
vision becomes unremitting, and also complains of dull pain behind her right eye. When a red glass is placed						
ove	er he	er right eye and she is asked to look at a flashlight off to her left, she reports seeing a white light and a				
red	lig	ht. The red light appears to her to be more to the left than the white light. Her right pupil is more dilated				
tha	than her left pupil and responds less briskly to a bright light directed at it than does the left pupil. Refore any					

than her left pupil and responds less briskly to a bright light directed at it than does the left pupil. Before any further investigations can be performed, the woman develops the worst headache of her life and becomes stuporous. Her physician discovers that she has marked neck stiffness and photophobia. The physician performs a transfemoral angiogram. This radiologic study is expected to reveal that the woman has:

a		An arteriovenous malformation					
b		An occipital astrocytoma					
с		A sphenoidal meningioma					
d		A pituitary adenoma					
e	e * A saccular aneurysm						
A	39-y	ear-old woman has diplopia several times a day for 6 weeks. She consults a physician when the double					
vis	ion	becomes unremitting, and also complains of dull pain behind her right eye. When a red glass is placed					
ove	er he	er right eye and she is asked to look at a flashlight off to her left, she reports seeing a white light and a					
red	ligl	nt. The red light appears to her to be more to the left than the white light. Her right pupil is more dilated					
tha	n he	er left pupil and responds less briskly to a bright light directed at it than does the left pupil. The radiologic					
stu	dy r	eveal that the woman has a saccular aneurysm. The cranial nerve injury likely to be responsible for all of					
the	se o	bservations is one involving:					
a		The second cranial nerve					
b	*	The third cranial nerve					
c		The fourth cranial nerve					
d		The sixth cranial nerve					
e		None of the above					
A 3	39-у	ear-old woman has diplopia several times a day for 6 weeks. She consults a physician when the double					
vis	ion	becomes unremitting, and also complains of dull pain behind her right eye. When a red glass is placed					
ove	er he	er right eye and she is asked to look at a flashlight off to her left, she reports seeing a white light and a					
red	ligl	nt. The red light appears to her to be more to the left than the white light. Her right pupil is more dilated					
tha	n he	er left pupil and responds less briskly to a bright light directed at it than does the left pupil. Before any					
fur	ther	investigations can be performed, the woman develops the worst headache of her life and becomes					
stu	porc	bus. The radiologic study reveal that the woman has a saccular aneurysm. The site of the lesion					
res	pons	sible for this woman's symptoms and signs is most probably the:					
a		Anterior communicating artery					
b	*	Posterior communicating artery					
C		Anterior cerebral artery					
d		Middle cerebral artery					
e		Posterior cerebral artery					
Th	ree	days after developing neck stiffness and photophobia, the woman develops left-sided weakness and					
ny	perre	effexia. Her left plantar response is upgoing. Her physician presumes that these deficits are a delayed					
em	ect (of the subarachnoid blood and so would treat her with:					
a 1.		Heparin					
b	*	Wartarin Ning dialog					
C 1	Ŷ	Nimodipine					
a		Phenytoin					
e 72							
/3-	yea	r-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and					
siu		speech. On further questioning, he relates three oriel episodes in the last month of sudden impairment of affecting the right ave. His examination new is normal Which of the following would be the most					
VIS		affecting the right eye. His examination now is normal which of the following would be the most					
app	лор	Creating phospholyingge (CDK)					
a h		Uniter manitor					
0		Holler monitor					
4	*	Visual evoked responses					
u		Conventional combral angiography					
e Th	e Conventional cerebral angiography						
Patinal vain thrombosis							
a h	*	Control retired artery isohomia					
0		Destorior corobrol orterwischemie					
C A		FOSTEHIOI CELEDIAI ATTERY ISCHEIIIIA Middle cerebrel artery ischemia					
u		Destarior ciliary artary isohomia					
e		rostenoi emary attery ischemia					

A thorough evaluation reveals that the patient has a 90% stenosis of the right internal carotid artery at the	he			
ifurcation. The management option most likely to prevent a future stroke is which of the following?				
Warfarin				
Carotid artery angioplasty				
c * Carotid endarterectomy				
d Extracranial-intracranial bypass				
e Aspirin				
A 21-year-old right-handed female student was working in the photography lab 1 week ago, which require	ed			
standing all day. After that, she experienced a cold sensation in the left foot and her entire left leg fell aslee	ep.			
The feeling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Coughin	ıg,			
sneezing, and the Valsalva maneuver did not worsen her symptoms. She had a slight back pain, which s	she			
thought was due to using a poor mattress. Past history includes an episode of optic neuritis in the left eye	2			
years ago. At that time, she was reportedly depressed and was sleeping constantly. One day, her left eye becan	ne			
blurred and her vision went out. In 1 week, her vision returned to normal. Her vision now is 20/She has not he	ad			
a repeat episode since then. She had an MRI of her brain, which was normal at that time. She drinks alcoh	ıol			
occasionally and does not use any illicit drugs. Her only medication is birth control pills. Examination	is			
significant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right	ht.			
Testing is positive for oligoclonal bands. The most likely diagnosis in this case is:				
a Seizure				
b Transient ischemic attack				
c Anaplastic astrocytoma				
d * Multiple sclerosis				
e Parkinson's disease				
See question Oligoclonal bands are the:				
a Wave frequency changes on the EEG during sleep				
b Markings about the iris				
c Pathologic features of Alzheimer's disease				
d Chromosomal markings found with multiple sclerosis (MS)				
e * Immunoglobulin patterns in the CSF with MS				
See question On briskly flexing the neck forward, a patient with this disease may report:				
a Dystonic posturing of the legs				
b * An electrical sensation radiating down the spine or into the legs				
c Bilateral wristdrop				
d Spontaneous evacuation of the bladder and bilateral extensor plantar responses				
e Rapidly evolving hemifacial pain				
A 29-year-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well	on			
HAART, but stopped taking his medications 8 months ago because he thought that he would be better off. Tw	WO			
months ago he was successfully treated for Pneumocystis carinii pneumonia. A papovavirus infection of t	he			
central nervous system (CNS) in this person would be most likely to produce:				
a Adrenoleukodystrophy				
b Multiple sclerosis				
c Subacute sclerosing panencephalitis (SSPE)				
d * Progressive multifocal leukoencephalopathy (PML)				
e Metachromatic leukodystrophy				
A 3-month-old child has a rapid regression of psychomotor function and loss of sight. There is increase	ed			
urinary excretion of N-acetyl-L-aspartic acid. A preliminary diagnosis of Canavan's disease (Canavan-van				
Bogaert-Bertrand disease; spongy degeneration of infancy) is made. This is a demyelinating disease that				
produces retardation in infants, is inherited in an autosomal recessive pattern, and results in:				
a Anencephaly				
b Microcephaly				
c Porencephaly				
d * Macrocephaly				
e Dolichocephaly				

A 58-year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of progressive spastic paraparesis. He has recently had urge incontinence of urine. He also has numbness in the right toes more than the left, and pain in the thighs and back. There have been some gradual fluctuations, but no clear, discrete episodes of deterioration. He has had no disturbances of vision, eye movement, or motor control of the upper extremities. He was referred when surgical clipping of the aneurysm 3 months ago failed to help his symptoms. Which of the following would be the most appropriate next diagnostic test?

Cerebral angiography а Spinal angiography b с * MRI of the spinal cord Spinal cord biopsy d VER e A 23-year-old woman awakens with bilateral leg weakness and numbness, urinary retention, and impaired bowel control. She has had several episodes of blurred vision over the previous 2 years, but these had always been attributed to idiopathic papillitis. (select 1 diagnosis): Neuromyelitis optica (Devic's disease) а Central pontine myelinolysis b Marchiafava-Bignami disease с Acute disseminated encephalomyelitis d Pelizaeus-Merzbacher disease e Two weeks after recovering from a febrile illness associated with a productive cough, a 19-year-old man complains of headache and neck stiffness. These complaints are associated with fever and are soon followed by deteriorating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals widespread damage to the white matter of the cerebral hemispheres. (select 1 diagnosis): Neuromyelitis optica (Devic's disease) a b Central pontine myelinolysis Marchiafava-Bignami disease с * Acute disseminated encephalomyelitis d Pelizaeus-Merzbacher disease e Two brothers, 4 and 7 years of age, exhibit limb ataxia, nystagmus, and mental retardation. MRI of their brains reveals areas of abnormal signal in the white matter. Cerebellar involvement is substantial. Both boys also have abnormally low serum cortisol levels. (select 1 diagnosis): Neuromyelitis optica (Devic's disease) а Central pontine myelinolysis b * Adrenoleukodystrophy с Acute disseminated encephalomyelitis d

e Pelizaeus-Merzbacher disease

A 54-year-old alcoholic man is brought to the emergency room with profound agitation. He is believed to be suffering from delirium tremens and is treated with thiamine and intravenous fluids. His serum sodium is noted to be markedly depressed, and intravenous supplements are adjusted to rapidly correct this hyponatremia. He becomes acutely quadriplegic and unresponsive and dies within 24 h. (select 1 diagnosis):

а		Neuromyelitis optica (Devic's disease)
b	*	Central pontine myelinolysis
c		Marchiafava-Bignami disease
d		Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease

A 35-year-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not receive steroids at that time. Two years ago he had loss of sensation in his hands that progressed over weeks to motor involvement, limiting his ability to write with the left hand. He received steroids at that time. He began interferon-1A 4 years ago. One year ago, he developed right leg weakness, constipation, and urinary urgency. He received steroids at that time as well. He now presents with new symptoms that concern him about the start of a new flare. Two days ago, he noticed decreased sensation in the palm of his right hand that is worse when he exercises. This has gotten a little worse over the last 2 days. Yesterday, he noticed diminished sensation along the lower right trunk in the front and back. He has no pain, tingling, exacerbation of symptoms with neck

movement, neck injury, incontinence, gait disturbance, diplopia, fever, chills, nausea, or vomiting. Examination findings include full visual fields with a left afferent pupillary defect. Bulk, strength, and tone are normal. Light touch is decreased over the left trunk and back over roughly the T8 to T12 dermatomes. Finger tapping, rapid alternating movements, finger-nose-finger, and heel tapping to shin are normal. The most appropriate pharmacological treatment for this patient at this time is:

P	phalinaeological dealinent for and patient at any time is.					
a		Interferon-1B				
b	*	Corticosteroids				
с		Gabapentin				
d		Glatiramer				
e		Pramipexole				
See question Finger tapping, rapid alternating movements, finger-nose-finger, and heel tapping to shin are						
nor	normal. The evoked response pattern that is most often abnormal in patients with early MS is the:					
a		Brainstem auditory evoked response (BAER)				
b		Far-field somatosensory evoked response (SSER)				
с	*	Visual evoked response (VER)				
d		Jolly test				

e Sensory nerve conduction test

A 37-year-old woman with progressive multiple sclerosis is being admitted for intravenous glucocorticoid therapy. She was diagnosed with multiple sclerosis 10 years ago after presenting with bilateral decreased visual acuity. She had an abnormal MRI at that time. She has been hospitalized approximately nine times since presentation, with her flares commonly consisting of increasing bilateral lower extremity weakness and decreased sensation manifested as a heavy feeling, waxing and waning generalized fatigue, bilateral hand tingling, and occasional nondescript speech changes that make her sound as though she has a slight accent. She has also had bilateral optic neuritis and one transient episode of aphasia in the past. She was last hospitalized 3 years ago. For the past 2 years she has been on cyclophosphamide and methylprednisolone, originally every 4 weeks, and now every 6 weeks, with the last treatment 1 month ago. She has tried and failed interferon therapy. For the 2 months prior to admission, the patient has had worsening bilateral lower extremity weakness/heaviness, increased fatigue, and mild low back numbness, as well as intermittent and alternating decreased hearing in both ears at work. She has also noticed mild unsteadiness walking. Included among her admission orders should be:

a	Heart-healthy diet

b	*	Ranitidine	150 mg bid
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c Neurological checks every hour for the first 48 h

d Placement of central venous line

e Stat head CT for change in mental status

A 29-year-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on HAART, but stopped taking his medications 8 months ago because he thought that he would be better off. Two months ago he was successfully treated for *Pneumocystis carinii* pneumonia. A papovavirus infection of the central nervous system (CNS) in this person would be most likely to produce:

a		Adrenoleukodystrophy	
b		Multiple sclerosis	
c		Subacute sclerosing panencephalitis (SSPE)	
d	*	Progressive multifocal leukoencephalopathy (PML)	
e		Metachromatic leukodystrophy	
А	A 58-year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of		

A 58-year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of progressive spastic paraparesis. He has recently had urge incontinence of urine. He also has numbness in the right toes more than the left, and pain in the thighs and back. There have been some gradual fluctuations, but no clear, discrete episodes of deterioration. He has had no disturbances of vision, eye movement, or motor control of the upper extremities. He was referred when surgical clipping of the aneurysm 3 months ago failed to help his symptoms. Cystometrographic analysis of bladder function in this patient is likely to show which of the following abnormalities?

a Bladder hypotonia

b Large residual volume of urine

d Good voluntary control of bladder emptying					
	Good voluntary control of bladder emptying				
Urinary tract infection					
See question Three months later, the patient has worsening leg weakness. He has severe spasms of his legs					
bilaterally, and is increasingly unable to ambulate because of this. A reasonable symptomatic treatmen	bilaterally, and is increasingly unable to ambulate because of this. A reasonable symptomatic treatment option				
would be which of the following?					
a Cyclophosphamide					
b * Baclofen					
c Gabapentin					
d Amitriptyline hydrochloride					
e Propranolol					
See question Which of the following factors might be expected to worsen his condition?					
a Bright lights					
b Red wine					
c Tyramine-containing compounds					
d * Hot weather					
e Amantadine					
A 23-year-old woman awakens with bilateral leg weakness and numbness, urinary retention, and i	mpaired				
bowel control. She has had several episodes of blurred vision over the previous 2 years, but these had	l always				
been attributed to idiopathic papillitis. (Select 1 diagnosis):					
a * Neuromyelitis optica (Devic's disease)					
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c Marchiafava-Bignami disease					
d Acute disseminated encephalomyelitis					
e Pelizaeus-Merzbacher disease					
Two weeks after recovering from a febrile illness associated with a productive cough, a 19-year-o	old man				
complains of headache and neck stiffness. These complaints are associated with fever and are soon follo	owed by				
deteriorating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI	I reveals				
widespread damage to the white matter of the cerebral hemispheres. (Select 1 diagnosis):					
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Two brothers, 4 and 7 years of age, exhibit limb ataxia, nystagmus, and mental retardation. MRI of the	ir brains				
reveals areas of abnormal signal in the white matter. Cerebellar involvement is substantial. Both boys al	lso have				
abnormally low serum cortisol levels. (Select 1 diagnosis):					
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of a new flare. Two days ago, he noticed decreased sensation in the palm of his right hand that is worse when					
he exercises. This has gotten a little worse over the last 2 days. Yesterday, he noticed diminished sensation					
along the lower right trunk in the front and back. He has no pain, tingling, exacerbation of symptoms with neck					
movement, neck injury, incontinence, gait disturbance, diplopia, fever, chills, nausea, or vomiting. Examination					
findings include full visual fields with a left afferent pupillary defect. Bulk, strength, and tone are norma	al. Light				

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ph	arma	macological treatment for this patient at this time is:					
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b	*	Corticosteroids					
С		Gabapentin					
d		Glatiramer					
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a		Brainstem auditory evoked response (BAER)					
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с	*	Visual evoked response (VER)					
d		Jolly test					
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Α	29-y	year-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on					
HA	AAR	T, but stopped taking his medications 8 months ago because he thought that he would be better off. Two					
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cer	ıtral	nervous system (CNS) in this person would be most likely to produce:					
а		Adrenoleukodystrophy					
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of	of the upper extremities. He was referred when surgical clipping of the aneurysm 3 months ago failed to help						
his	syn	mptoms. Which of the following would be the most appropriate next diagnostic test?					
а		Cerebral angiography					
b		Spinal angiography					
c	*	MRI of the spinal cord					
d		Spinal cord biopsy					
e		VER					
Se	<u>, u</u>	stion Cystometrographic analysis of bladder function in this nation is likely to show which of the					
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D	Ť						
C							
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See	See question Which of the following factors might be expected to worsen his condition?						
a		Bright lights					
b		Red wine					
С		Tyramine-containing compounds					

1 4					
	Hot weather				
e Amantadine					
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wides	pread damage to the white matter of the cerebral hemispheres. (Select 1 diagnosis):				
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A 21-	year-old right-handed female student was working in the photography lab 1 week ago, which required				
standi	ng all day. After that, she experienced a cold sensation in the left foot and her entire left leg fell asleep.				
The fe	The feeling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Coughing.				
sneezi	ng, and the Valsalva maneuver did not worsen her symptoms. She had a slight back pain, which she				
though	nt was due to using a poor mattress. Past history includes an episode of optic neuritis in the left eye 2				
years	ago. At that time, she was reportedly depressed and was sleeping constantly. One day, her left eye became				
blurre	d and her vision went out. In 1 week, her vision returned to normal. Her vision now is 20/She has not had				
a repe	at episode since then. She had an MRI of her brain, which was normal at that time. She drinks alcohol				
occasi	onally and does not use any illicit drugs. Her only medication is birth control pills. Examination is				
signifi	cant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right.				
Testin	g is positive for oligoclonal bands. The most likely diagnosis in this case is:				
a	Seizure				
b	Transient ischemic attack				
с	Anaplastic astrocytoma				
d *	Multiple sclerosis				
e	Parkinson's disease				
See question Oligoclonal bands are the:					
a	Wave frequency changes on the EEG during sleep				
b	Markings about the iris				
C	Pathologic features of Alzheimer's disease				
d	d Chromosomal markings found with multiple sclerosis (MS)				
e *	Chromosomai markings found with multiple scierosis (NIS)				
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- a Dystonic posturing of the legs
- b * An electrical sensation radiating down the spine or into the legs
- c Bilateral wristdrop
- d Spontaneous evacuation of the bladder and bilateral extensor plantar responses
- e Rapidly evolving hemifacial pain

A 21-year-old right-handed female student was working in the photography lab 1 week ago, which required standing all day. After that, she experienced a cold sensation in the left foot and her entire left leg fell asleep. The feeling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Coughing, sneezing, and the Valsalva maneuver did not worsen her symptoms. She had a slight back pain, which she thought was due to using a poor mattress. Past history includes an episode of optic neuritis in the left eye 2 years ago. At that time, she was reportedly depressed and was sleeping constantly. One day, her left eye became blurred and her vision went out. In 1 week, her vision returned to normal. Her vision now is 20/She has not had a repeat episode since then. She had an MRI of her brain, which was normal at that time. She drinks alcohol occasionally and does not use any illicit drugs. Her only medication is birth control pills. Examination is significant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right. Testing is positive for oligoclonal bands. The CSF in persons with multiple sclerosis will typically exhibit:

- a Glucose content of less than 20% of the serum content
- b Persistently elevated total protein content
- c * Persistently elevated immunoglobulin G (IgG) content
- d Mononuclear cell counts of greater than 100 cells per/L
- e Erythrocyte counts of greater than 10 cells per/L

A 35-year-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not receive steroids at that time. Two years ago he had loss of sensation in his hands that progressed over weeks to motor involvement, limiting his ability to write with the left hand. He received steroids at that time. He began interferon-1A 4 years ago. One year ago, he developed right leg weakness, constipation, and urinary urgency. He received steroids at that time as well. He now presents with new symptoms that concern him about the start of a new flare. Two days ago, he noticed decreased sensation in the palm of his right hand that is worse when he exercises. This has gotten a little worse over the last 2 days. Yesterday, he noticed diminished sensation along the lower right trunk in the front and back. He has no pain, tingling, exacerbation of symptoms with neck movement, neck injury, incontinence, gait disturbance, diplopia, fever, chills, nausea, or vomiting. Examination findings include full visual fields with a left afferent pupillary defect. Bulk, strength, and tone are normal. Light touch is decreased over the left trunk and back over roughly the T8 to T12 dermatomes. Finger tapping, rapid alternating movements, finger-nose-finger, and heel tapping to shin are normal. The evoked response pattern that is most often abnormal in patients with early MS is the:

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Α	A 58-year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of				
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rig	ght to	bes more than the left, and pain in the thighs and back. There have been some gradual fluctuations, but no			
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of	the	upper extremities. He was referred when surgical clipping of the aneurysm 3 months ago failed to help			
his	s syn	nptoms. Which of the following factors might be expected to worsen his condition?			
a		Bright lights			
b		Red wine			
с		Tyramine-containing compounds			
d	*	Hot weather			
e		Amantadine			
Tv	vo v	veeks after recovering from a febrile illness associated with a productive cough, a 19-year-old man			
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nhor	ma	and need to similar normal. The most appropriate			
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0	•	Coherentin			
4		Clatinemen			
a	_	Dramineurale			
e					
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his symptoms. Which of the following would be the most appropriate next diagnostic test?					
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a		Correction and colored by the second s			
a b		Spinal angiography			
a b c [;]	*	Spinal angiography MRI of the spinal cord			
a b c ^s d	*	Spinal angiography MRI of the spinal cord Spinal cord biopsy			
a b c ³ d e	*	Spinal angiography MRI of the spinal cord Spinal cord biopsy VER			
a b c ³ d See o	* que	Spinal angiography MRI of the spinal cord Spinal cord biopsy VER estion Which of the following factors might be expected to worsen his condition?			
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a b c d e See a b	* que	Spinal angiography MRI of the spinal cord Spinal cord biopsy VER estion Which of the following factors might be expected to worsen his condition? Bright lights Red wine			

d	*	Hot weather				
e	Amantadine					
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Ти	vo v	veeks after recovering from a febrile illness associated with a productive cough, a 19-year-old man				
co	mpla	ains of headache and neck stiffness. These complaints are associated with fever and are soon followed by				
det	terio	orating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals				
wi	desp	bread damage to the white matter of the cerebral hemispheres. (Select 1 diagnosis):				
a		Neuromyelitis optica (Devic's disease)				
b		Central pontine myelinolysis				
с		Marchiafava-Bignami disease				
d	*	Acute disseminated encephalomyelitis				
e		Pelizaeus-Merzbacher disease				
Ти	o b	rothers, 4 and 7 years of age, exhibit limb ataxia, nystagmus, and mental retardation. MRI of their brains				
rev	veals	s areas of abnormal signal in the white matter. Cerebellar involvement is substantial. Both boys also have				
abi	norn	nally low serum cortisol levels. (Select 1 diagnosis):				
a		Neuromyelitis optica (Devic's disease)				
b		Central pontine myelinolysis				
c	*	Adrenoleukodystrophy				
d		Acute disseminated encephalomyelitis				
e		Pelizaeus-Merzbacher disease				
Α	21-y	year-old right-handed female student was working in the photography lab 1 week ago, which required				
sta	ndir	ng all day. After that, she experienced a cold sensation in the left foot and her entire left leg fell asleep.				
Th	e fe	beling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Coughing,				
sne	eezii	ng, and the Valsalva maneuver did not worsen her symptoms. She had a slight back pain, which she				
the	ough	at was due to using a poor mattress. Past history includes an episode of optic neuritis in the left eye 2				
yea	ars a	ago. At that time, she was reportedly depressed and was sleeping constantly. One day, her left eye became				
blu	irrec	and her vision went out. In 1 week, her vision returned to normal. Her vision now is 20/She has not had				
a r	epea	at episode since then. She had an MRI of her brain, which was normal at that time. She drinks alcohol				
000	casi	onally and does not use any illicit drugs. Her only medication is birth control pills. Examination is				
sig	nifi	cant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right.				
Te	sting	g is positive for oligoclonal bands. The most likely diagnosis in this case is:				
a		Seizure				
b		Transient ischemic attack				
C		Anaplastic astrocytoma				
d	*	Multiple sclerosis				
e		Parkinson's disease				
Se	e qu	estion Oligoclonal bands are the:				
a		Wave frequency changes on the EEG during sleep				
b		Markings about the iris				
c		Pathologic features of Alzheimer's disease				
d		Chromosomal markings found with multiple sclerosis (MS)				
e	e * Immunoglobulin patterns in the CSF with MS					
Se	See question On briskly flexing the neck forward, a patient with this disease may report:					
a	Dystonic posturing of the legs					
b	*	An electrical sensation radiating down the spine or into the legs				
С		Bilateral wristdrop				

d		Spontaneous evacuation of the bladder and bilateral extensor plantar responses			
e	Rapidly evolving hemifacial pain				
А	A 29-year-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on				
HA	ĂĂŔ	T, but stopped taking his medications 8 months ago because he thought that he would be better off. Two			
mo	onthe	s ago he was successfully treated for <i>Pneumocystis carinii</i> pneumonia. A papovavirus infection of the			
cer	ntral	nervous system (CNS) in this person would be most likely to produce:			
а		Adrenoleukodystrophy			
b	Multiple sclerosis				
с	Subacute sclerosing panencephalitis (SSPE)				
d	*	Progressive multifocal leukoencephalopathy (PML)			
e		Metachromatic leukodystrophy			
Α	3-m	onth-old child has a rapid regression of psychomotor function and loss of sight. There is increased			
uri	nary	v excretion of N-acetyl-L-aspartic acid. A preliminary diagnosis of Canavan's disease (Canavan-van			
Bo	gaei	rt-Bertrand disease; spongy degeneration of infancy) is made. This is a demyelinating disease that			
pro	oduc	es retardation in infants, is inherited in an autosomal recessive pattern, and results in:			
a		Anencephaly			
b		Microcephaly			
с		Porencephaly			
d	*	Macrocephaly			
е		Dolichocephaly			
A	58-1	vear-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of			
pro	ogre	ssive spastic paraparesis. He has recently had urge incontinence of urine. He also has numbress in the			
rig	ht to	bes more than the left, and pain in the thighs and back. There have been some gradual fluctuations, but no			
cle	ar. o	discrete episodes of deterioration. He has had no disturbances of vision, eve movement, or motor control			
of	the	upper extremities. He was referred when surgical clipping of the aneurysm 3 months ago failed to help			
his	svn	appen entremines in the was referred when surgical empring of the anearysm s montains ago range to help aptoms Which of the following would be the most appropriate next diagnostic test?			
- nii 5		Cerebral angiography			
b		Spinal angiography			
c	*	MRI of the spinal cord			
d		Spinal cord biopsy			
e		VER			
A	23-v	vear-old woman awakens with bilateral leg weakness and numbness, urinary retention, and impaired			
bo	wel	control. She has had several episodes of blurred vision over the previous 2 years, but these had always			
bee	en at	tributed to idiopathic papillitis. (Select 1 diagnosis):			
a	*	Neuromyelitis optica (Devic's disease)			
b		Central pontine myelinolysis			
С		Marchiafava-Bignami disease			
d		Acute disseminated encenhalomyelitis			
e		Pelizaeus-Merzhacher disease			
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a h		Control nontino myolinolygig			
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a Actuated disseminated encephalomyelitis e Pelizaeus-Merzbacher disease A 54-year-old alcoholic man is brought to the emergency room with profound agitation. He is believed to be suffering from delirium tremens and is treated with thiamine and intravenous fluids. His serum sodium is noted to be markedly depressed, and intravenous supplements are adjusted to rapidly correct this hyponatremia. He becomes acutely quadriplegic and unresponsive and dies within 24 h. (Select 1 diagnosis): a Neuromyelitis optica (Devic's disease) b * c Marchiafava-Bignami disease d Acute disseminated encephalomyelitis e Pelizaeus-Merzbacher disease A 35-year-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not receive steroids at that time. Two years ago he had loss of sensation in his hands that progressed over weeks to motor involvement, limiting his ability to write with the left hand. He received steroids at that time as well. He now presents with new symptoms that concern him about the start of a new flare. Two days ago, he noticed decreased sensation in the palm of his right hand that is worse when he exercises. This has gotten a little worse over the last 2 days. Yesterday, he noticed diminished sensation along the lower right trunk in the front and back. He has no pain, tingling, exacerbation of symptoms with neck movement, neck injury, incontinence, gait disturbance, diplopia, fever, chills, nausea, or vomiting. Examination findings include full visual fields with a left afferent pupillary defect. Bulk, strength, and tone are normal. Light touch is decreased over the left t		
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alternating movements, finger-nose-finger, and heel tapping to shin are normal. The most appropriate pharmacological treatment for this patient at this time is: a Interferon-1B b * Corticosteroids c Gabapentin d Glatiramer a Praminevalo		
pharmacological treatment for this patient at this time is: a Interferon-1B b * Corticosteroids c Gabapentin d Glatiramer a Draminovalo		
a Interferon-1B b * Corticosteroids c Gabapentin d Glatiramer a Prominovalo		
b * Corticosteroids c Gabapentin d Glatiramer a Prominevelo		
c Gabapentin d Glatiramer a Praminovala		
d Glatiramer		
a Draminavala		
e Frampexole		
See question Finger tapping, rapid alternating movements, finger-nose-finger, and heel tapping to shin are		
normal. The evoked response pattern that is most often abnormal in patients with early MS is the:		
a Brainstem auditory evoked response (BAER)		
b Far-field somatosensory evoked response (SSER)		
c * Visual evoked response (VER)		
d Jolly test		
e Sensory nerve conduction test		
A 37-year-old woman with progressive multiple sclerosis is being admitted for intravenous glucocorticoid		
therapy. She was diagnosed with multiple sclerosis 10 years ago after presenting with bilateral decreased visual		
acuity. She had an abnormal MRI at that time. She has been hospitalized approximately nine times since		
presentation, with her flares commonly consisting of increasing bilateral lower extremity weakness and		
decreased sensation manifested as a heavy feeling, waxing and waning generalized fatigue, bilateral hand		
tingling, and occasional nondescript speech changes that make her sound as though she has a slight accent. She		
has also had bilateral optic neuritis and one transient episode of aphasia in the past. She was last hospitalized 3		
years ago. For the past 2 years she has been on cyclophosphamide and methylprednisolone, originally every 4		
weeks, and now every 6 weeks, with the last treatment 1 month ago. She has tried and failed interferon therapy.		
For the 2 months prior to admission, the patient has had worsening bilateral lower extremity		
weakness/heaviness, increased fatigue, and mild low back numbness, as well as intermittent and alternating		
decreased hearing in both ears at work. She has also noticed mild unsteadiness walking. Included among her		
admission orders should be:		

а		Heart-healthy diet
b	*	Ranitidine 150 mg bid
с		Neurological checks every hour for the first 48 h

d	Placement of central venous line					
e		Stat head CT for change in mental status				
Α	A 29-year-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on					
HA	ĂĂŔ	T, but stopped taking his medications 8 months ago because he thought that he would be better off. Two				
mo	onthe	s ago he was successfully treated for <i>Pneumocystis carinii</i> pneumonia. A papovavirus infection of the				
cer	ntral	nervous system (CNS) in this person would be most likely to produce:				
а		Adrenoleukodystrophy				
h	Multiple sclerosis					
c		Subacute sclerosing panencenhalitis (SSPE)				
d	Subacute scierosing patiencephanus (SSPE) * Progressive multifocal leukoencephalopathy (PML)					
u A	Image: Progressive multifical leukoencephalopathy (PML) Meteobrometia leukoelustrophy					
	50.	wear old man with a basiler tip anouncem is referred by a neurosurgeon. He has a 4 year history of				
A	<u> </u>	serve spectra perspected by a hear recently had urge incontinence of uring. He also has numbrass in the				
pro ria	bt tc	ssive spasic paraparesis. The has recently had unge incontinence of unne. The also has numbered in the				
		liserate episodes of deterioration. He has had no disturbances of vision, ave movement, or motor control				
cie	ar, c	inscrete episodes of deterioration. He has had no disturbances of vision, eye movement, or motor control				
01	the	upper extremities. He was referred when surgical clipping of the aneurysm 5 months ago failed to help				
	syi	inploms. Cystometrographic analysis of bladder function in this patient is likely to show which of the				
101	IOW					
a 1		Bladder hypotonia				
b		Large residual volume of urine				
С	*	Premature bladder emptying				
d		Good voluntary control of bladder emptying				
e		Urinary tract infection				
Se	e qu	estion Three months later, the patient has worsening leg weakness. He has severe spasms of his legs				
bil	atera	ally, and is increasingly unable to ambulate because of this. A reasonable symptomatic treatment option				
WC	uld	be which of the following?				
а		Cyclophosphamide				
b	*	Baclofen				
с		Gabapentin				
d		Amitriptyline hydrochloride				
e		Propranolol				
Se	e qu	estion Which of the following factors might be expected to worsen his condition?				
а		Bright lights				
b		Red wine				
с		Tyramine-containing compounds				
d	*	Hot weather				
e		Amantadine				
Δ	23-1	vear-old woman awakens with bilateral leg weakness and numbress urinary retention and impaired				
ho	zg j wel	control She has had several episodes of blurred vision over the previous 2 years but these had always				
bee	n at	tributed to idionathic nanillitis (Select 1 diagnosis).				
2	*	Neuromyelitis ontica (Devic's disease)				
a h		Central pontine myelinolysis				
0		Marchiafaya Bignami digaasa				
с 		Acute disseminated encenhalomyelitis				
u		Delizaous Marzhaehar disease				
е т-		renzaeus-wielzudullei ulsedse				
IW	I wo weeks after recovering from a febrile illness associated with a productive cough, a 19-year-old man					
	complains of headache and neck stiffness. These complaints are associated with fever and are soon followed by					
deteriorating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals						
W1	widespread damage to the white matter of the cerebral hemispheres. (Select 1 diagnosis):					
a		Neuromyelitis optica (Devic's disease)				
b		Central pontine myelinolysis				
С		Marchiatava-Bignami disease				
d	*	Acute disseminated encephalomyelitis				

ρ	Pelizaeus-Merzhacher disease				
Two brothers A and 7 years of age, exhibit limb ataxia, nystagmus, and mental retardation MRI of their brains					
reveal	reveals areas of abnormal signal in the white matter. Corebellar involvement is substantial. Both have also have				
abnor	abnormally low sorum corticol loyals (Select 1 diagnosis):				
	Nauromyalitis ontion (Davia's disease)				
a 1-	Neuromyenus optica (Devic s disease)				
D *	Central pontine myelinolysis				
c *	Adrenoleukodystrophy				
d	Acute disseminated encephalomyelitis				
e	Pelizaeus-Merzbacher disease				
A 35-	year-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not				
receiv	e steroids at that time. Two years ago he had loss of sensation in his hands that progressed over weeks to				
motor	involvement, limiting his ability to write with the left hand. He received steroids at that time. He began				
interfe	eron -1A 4 years ago. One year ago, he developed right leg weakness, constipation, and urinary urgency.				
He ree	ceived steroids at that time as well. He now presents with new symptoms that concern him about the start				
of a n	ew flare. Two days ago, he noticed decreased sensation in the palm of his right hand that is worse when				
he exe	ercises. This has gotten a little worse over the last 2 days. Yesterday, he noticed diminished sensation				
along	the lower right trunk in the front and back. He has no pain, tingling, exacerbation of symptoms with neck				
mover	ment, neck injury, incontinence, gait disturbance, diplopia, fever, chills, nausea, or vomiting. Examination				
findin	gs include full visual fields with a left afferent pupillary defect. Bulk, strength, and tone are normal. Light				
touch	is decreased over the left trunk and back over roughly the T8 to T12 dermatomes. Finger tapping, rapid				
altern	ating movements, finger-nose-finger, and heel tapping to shin are normal. The most appropriate				
pharm	acological treatment for this patient at this time is:				
2	Interferon-1B				
h *	Corticosteroids				
0	Cohopontin				
2	Clatinemen				
a					
e	Pramipexole				
See q	uestion Finger tapping, rapid alternating movements, finger-nose-finger, and heel tapping to shin are				
norma	al. The evoked response pattern that is most often abnormal in patients with early MS is the:				
a	Brainstem auditory evoked response (BAER)				
b	Far-field somatosensory evoked response (SSER)				
c *	Visual evoked response (VER)				
d	Jolly test				
e	Sensory nerve conduction test				
A 29-	year-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on				
HAAI	RT, but stopped taking his medications 8 months ago because he thought that he would be better off. Two				
month	as ago he was successfully treated for <i>Pneumocystis carinii</i> pneumonia. A papovavirus infection of the				
centra	l nervous system (CNS) in this person would be most likely to produce:				
a	Adrenoleukodystrophy				
b	Multiple sclerosis				
C	Subacute sclerosing panencenhalitis (SSPE)				
d *	Progressive multifocal leukoencenhalonathy (PML)				
e	Metachromatic leukodystronhy				
	weer old man with a basilar tip anourwar is referred by a nourcourgoon. He has a 4 year history of				
A 30-	A so-year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of				
progre	essive spasue paraparesis. He has recently had urge incontinence of urne. He also has numbers in the				
right t	discrete enior des of deterioretion. He has had no distributions of minimum and participation of deterioretion.				
clear,	clear, discrete episodes of deterioration. He has had no disturbances of vision, eye movement, or motor control				
of the upper extremities. He was referred when surgical clipping of the aneurysm 3 months ago failed to help					
his sy	his symptoms. Which of the following would be the most appropriate next diagnostic test?				
a	a Cerebral angiography				
b	Spinal angiography				
c *	MRI of the spinal cord				
d	Spinal cord biopsy				

e		VFR			
See question Cystometrographic analysis of bladder function in this patient is likely to show which of the					
fol	following abnormalities?				
2		Bladder hypotonia			
h		Large residual volume of urine			
C	*	Premature bladder emptying			
d	Good voluntary control of bladder emptying				
e		Urinary tract infection			
See	e au	estion Three months later, the patient has worsening leg weakness. He has severe spasms of his legs			
bil	ater	ally, and is increasingly unable to ambulate because of this. A reasonable symptomatic treatment option			
wo	uld	be which of the following?			
a		Cvclophosphamide			
b	*	Baclofen			
с		Gabapentin			
d		Amitriptyline hydrochloride			
e		Propranolol			
See	e au	estion Which of the following factors might be expected to worsen his condition?			
a		Bright lights			
b		Red wine			
с		Tyramine-containing compounds			
d	*	Hot weather			
e		Amantadine			
A	23-1	year-old woman awakens with bilateral leg weakness and numbness, urinary retention, and impaired			
bo	wel	control. She has had several episodes of blurred vision over the previous 2 years, but these had always			
bee	en at	ttributed to idiopathic papillitis. (Select 1 diagnosis):			
а	*	Neuromyelitis optica (Devic's disease)			
b		Central pontine myelinolysis			
с		Marchiafava-Bignami disease			
d		Acute disseminated encephalomyelitis			
e		Pelizaeus-Merzbacher disease			
Тw	vo v	veeks after recovering from a febrile illness associated with a productive cough, a 19-year-old man			
coi	npla	ains of headache and neck stiffness. These complaints are associated with fever and are soon followed by			
det	erio	rating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals			
wie	desp	bread damage to the white matter of the cerebral hemispheres. (Select 1 diagnosis):			
a		Neuromyelitis optica (Devic's disease)			
b		Central pontine myelinolysis			
с		Marchiafava-Bignami disease			
d	*	Acute disseminated encephalomyelitis			
e		Pelizaeus-Merzbacher disease			
Тw	vo b	rothers, 4 and 7 years of age, exhibit limb ataxia, nystagmus, and mental retardation. MRI of their brains			
rev	reals	areas of abnormal signal in the white matter. Cerebellar involvement is substantial. Both boys also have			
abı	orn	nally low serum cortisol levels. (Select 1 diagnosis):			
a		Neuromyelitis optica (Devic's disease)			
b		Central pontine myelinolysis			
c	*	Adrenoleukodystrophy			
d		Acute disseminated encephalomyelitis			
e		Pelizaeus-Merzbacher disease			
A	21-у	year-old right-handed female student was working in the photography lab 1 week ago, which required			
sta	ndir	ng all day. After that, she experienced a cold sensation in the left foot and her entire left leg fell asleep.			
Th	The feeling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Coughing,				
sne	sneezing, and the Valsalva maneuver did not worsen her symptoms. She had a slight back pain, which she				
the	thought was due to using a poor mattress. Past history includes an episode of optic neuritis in the left eye 2				
yea	years ago. At that time, she was reportedly depressed and was sleeping constantly. One day, her left eye became				

blurred and her vision went out. In 1 week, her vision returned to normal. Her vision now is 20/She has not had a repeat episode since then. She had an MRI of her brain, which was normal at that time. She drinks alcohol occasionally and does not use any illicit drugs. Her only medication is birth control pills. Examination is significant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right. Testing is positive for oligoclonal bands. The most likely diagnosis in this case is:

a	Seizure
b	Transient ischemic attack

- c Anaplastic astrocytoma
- d * Multiple sclerosis e Parkinson's disease
- See question Oligoclonal bands are the:
- a Wave frequency changes on the EEG during sleep
- b Markings about the iris
- c Pathologic features of Alzheimer's disease
- d Chromosomal markings found with multiple sclerosis (MS)
- e * Immunoglobulin patterns in the CSF with MS

A 21-year-old right-handed female student was working in the photography lab 1 week ago, which required standing all day. After that, she experienced a cold sensation in the left foot and her entire left leg fell asleep. The feeling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Coughing, sneezing, and the Valsalva maneuver did not worsen her symptoms. She had a slight back pain, which she thought was due to using a poor mattress. Past history includes an episode of optic neuritis in the left eye 2 years ago. At that time, she was reportedly depressed and was sleeping constantly. One day, her left eye became blurred and her vision went out. In 1 week, her vision returned to normal. Her vision now is 20/She has not had a repeat episode since then. She had an MRI of her brain, which was normal at that time. She drinks alcohol occasionally and does not use any illicit drugs. Her only medication is birth control pills. Examination is significant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right. Testing is positive for oligoclonal bands. On briskly flexing the neck forward, a patient with this disease may report:

- a Dystonic posturing of the legs
 b * An electrical sensation radiating down the spine or into the legs
 - c Bilateral wristdrop
 - d Spontaneous evacuation of the bladder and bilateral extensor plantar responses
 - e Rapidly evolving hemifacial pain

A 21-year-old right-handed female student was working in the photography lab 1 week ago, which required standing all day. After that, she experienced a cold sensation in the left foot and her entire left leg fell asleep. The feeling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Coughing, sneezing, and the Valsalva maneuver did not worsen her symptoms. She had a slight back pain, which she thought was due to using a poor mattress. Past history includes an episode of optic neuritis in the left eye 2 years ago. At that time, she was reportedly depressed and was sleeping constantly. One day, her left eye became blurred and her vision went out. In 1 week, her vision returned to normal. Her vision now is 20/She has not had a repeat episode since then. She had an MRI of her brain, which was normal at that time. She drinks alcohol occasionally and does not use any illicit drugs. Her only medication is birth control pills. Examination is significant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right. Testing is positive for oligoclonal bands. The CSF in persons with multiple sclerosis will typically exhibit:

10	esting is positive for ongoeronal sunds. The obt in persons whit matches selectors will typically enhibit.		
a		Glucose content of less than 20% of the serum content	
b		Persistently elevated total protein content	
с	*	Persistently elevated immunoglobulin G (IgG) content	
d		Mononuclear cell counts of greater than 100 cells per/L	
e		Erythrocyte counts of greater than 10 cells per/L	

A 35-year-old man with multiple sclerosis initially presented 4 years ago with left eye optic neuritis. He did not receive steroids at that time. Two years ago he had loss of sensation in his hands that progressed over weeks to motor involvement, limiting his ability to write with the left hand. He received steroids at that time. He began interferon-1A 4 years ago. One year ago, he developed right leg weakness, constipation, and urinary urgency.

He received steroids at that time as well. He now presents with new symptoms that concern him about the start of a new flare. Two days ago, he noticed decreased sensation in the palm of his right hand that is worse when he exercises. This has gotten a little worse over the last 2 days. Yesterday, he noticed diminished sensation along the lower right trunk in the front and back. He has no pain, tingling, exacerbation of symptoms with neck movement, neck injury, incontinence, gait disturbance, diplopia, fever, chills, nausea, or vomiting. Examination findings include full visual fields with a left afferent pupillary defect. Bulk, strength, and tone are normal. Light touch is decreased over the left trunk and back over roughly the T8 to T12 dermatomes. Finger tapping, rapid alternating movements, finger-nose-finger, and heel tapping to shin are normal. The evoked response pattern that is most often abnormal in patients with early MS is the:

una	.t 15 .	s nost often abiornia in patients with early wis is the.					
a		Brainstem auditory evoked response (BAER)					
b		Far-field somatosensory evoked response (SSER)					
с	*	Visual evoked response (VER)					
d		Jolly test					
e	e Sensory nerve conduction test						
Se	e qu	estion Finger tapping, rapid alternating movements, finger-nose-finger, and heel tapping to shin are					
no	rmal	. The most appropriate pharmacological treatment for this patient at this time is:					
a		Interferon-1B					
b	*	Corticosteroids					
c		Gabapentin					
d		Glatiramer					
e		Pramipexole					
А	29-у	rear-old man contracted HIV-1 through homosexual activity 5 years ago. He had been doing well on					
HA	AR	T, but stopped taking his medications 8 months ago because he thought that he would be better off. Two					
mo	onths	s ago he was successfully treated for <i>Pneumocystis carinii</i> pneumonia. A papovavirus infection of the					
cer	ıtral	nervous system (CNS) in this person would be most likely to produce:					
а		Adrenoleukodystrophy					
b		Multiple sclerosis					
c		Subacute sclerosing panencephalitis (SSPE)					
d	*	Progressive multifocal leukoencephalopathy (PML)					
e		Metachromatic leukodystrophy					
А	58-y	year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of					
pro	ogres	ssive spastic paraparesis. He has recently had urge incontinence of urine. He also has numbness in the					
rig	ht to	bes more than the left, and pain in the thighs and back. There have been some gradual fluctuations, but no					
cle	ar, c	liscrete episodes of deterioration. He has had no disturbances of vision, eye movement, or motor control					
of	of the upper extremities. He was referred when surgical clipping of the aneurysm 3 months ago failed to help						
his	is symptoms. Which of the following factors might be expected to worsen his condition?						
а		Bright lights					
b		Red wine					
с		Tyramine-containing compounds					
d	*	Hot weather					
e		Amantadine					
Two weeks after recovering from a febrile illness associated with a productive cough, a 19-year-old man							
complains of headache and neck stiffness. These complaints are associated with fever and are soon followed by							
deteriorating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals							
wi	widespread damage to the white matter of the cerebral hemispheres. (Select 1 diagnosis):						
а		Neuromyelitis optica (Devic's disease)					
b		Central pontine myelinolysis					
с		Marchiafava-Bignami disease					

- d * Acute disseminated encephalomyelitis
- e Pelizaeus-Merzbacher disease

A 54-year-old alcoholic man is brought to the emergency room with profound agitation. He is believed to be suffering from delirium tremens and is treated with thiamine and intravenous fluids. His serum sodium is noted to be markedly depressed, and intravenous supplements are adjusted to rapidly correct this hyponatremia. He

bec	com	es acutely quadriplegic and unresponsive and dies within 24 h. (Select 1 diagnosis):
a		Neuromyelitis optica (Devic's disease)
b	*	Central pontine myelinolysis
c		Marchiafava-Bignami disease
d		Acute disseminated encephalomyelitis
e		Pelizaeus-Merzbacher disease
Α	21-3	year-old right-handed female student was working in the photography lab 1 week ago, which required
sta	ndir	ng all day. After that, she experienced a cold sensation in the left foot and her entire left leg fell asleep.
Th	e fe	eeling lasted 4 to 5 days and then slowly went away. Her right lower extremity was fine. Coughing,
sne	ezi	ng, and the Valsalva maneuver did not worsen her symptoms. She had a slight back pain, which she
the	ough	at was due to using a poor mattress. Past history includes an episode of optic neuritis in the left eye 2
yea	ars a	ago. At that time, she was reportedly depressed and was sleeping constantly. One day, her left eye became
blu	rrec	and her vision went out. In 1 week, her vision returned to normal. Her vision now is 20/She has not had
a r	epe	at episode since then. She had an MRI of her brain, which was normal at that time. She drinks alcohol
000		onally and does not use any illicit drugs. Her only medication is birth control pills. Examination is
sig	nifi	cant for brisk reflexes and sustained clonus at the right ankle. Babinski sign is present on the right.
Te	sting	g is positive for oligoclonal bands. The most likely diagnosis in this case is:
a		Seizure
b		Transient ischemic attack
c		Anaplastic astrocytoma
d	*	Multiple sclerosis
e		Parkinson's disease
See	e qu	estion On briskly flexing the neck forward, a patient with this disease may report:
a	*	Dystonic posturing of the legs
b	Ŷ	An electrical sensation radiating down the spine or into the legs
C 1		Bilateral wristdrop
d		Spontaneous evacuation of the bladder and bilateral extensor plantar responses
e		Rapidly evolving hemitacial pain
See	e qu	estion The CSF in persons with multiple sclerosis will typically exhibit:
a 1		Glucose content of less than 20% of the serum content
b	*	Persistently elevated total protein content
C 1	*	Persistently elevated immunoglobulin G (IgG) content
a		Mononuclear cell counts of greater than 100 cells per/L
e	2 -	Erythrocyte counts of greater than 10 cells per/L
A .	33-y	ear-old man with multiple scierosis initially presented 4 years ago with left eye optic neuritis. He did not
rec	eive	involvement, limiting his shility to write with the left hand. He received startide at that time. He have
int	noi orfo	involvement, infiniting his admity to write with the left hand. He received steroids at that time. He began rop \Box 1A 4 years ago. One year ago, he developed right lag weakness, constitution, and urinery urgency.
He	rec	eived steroids at that time as well. He now presents with new symptoms that concern him about the start
of	a ne	w flare. Two days ago, he noticed decreased sensation in the nalm of his right hand that is worse when
he		recises. This has gotten a little worse over the last 2 days. Vesterday, he noticed diminished sensation
alo	ng	the lower right trunk in the front and back. He has no pain tingling exacerbation of symptoms with neck
mc	ven	nent, neck injury, incontinence, gait disturbance, diplopia, fever, chills, nausea, or vomiting. Examination
fin	ding	as include full visual fields with a left afferent pupillary defect. Bulk, strength, and tone are normal. Light
tou	ich i	is decreased over the left trunk and back over roughly the T8 to T12 dermatomes. Finger tapping, rapid
alte	erna	ting movements, finger-nose-finger, and heel tapping to shin are normal. The most appropriate
ph	arm	acological treatment for this patient at this time is:
a		Interferon-1B
b	*	Corticosteroids
с		Gabapentin
d		Glatiramer
e		Pramipexole
See	e qu	estion The evoked response pattern that is most often abnormal in patients with early MS is the:

a		Brainstem auditory evoked response (BAER)	
b		Far-field somatosensory evoked response (SSER)	
С	*	Visual evoked response (VER)	
d		Jolly test	
e		Sensory nerve conduction test	
Α	58- <u>y</u>	year-old man with a basilar tip aneurysm is referred by a neurosurgeon. He has a 4-year history of	
pro	ogre	ssive spastic paraparesis. He has recently had urge incontinence of urine. He also has numbress in the	
rig	tt to	bes more than the left, and pain in the thighs and back. There have been some gradual fluctuations, but no	
cle	ear, o	discrete episodes of deterioration. He has had no disturbances of vision, eye movement, or motor control	
of	the	upper extremities. He was referred when surgical clipping of the aneurysm 3 months ago failed to help	
his	s syn	nptoms. Which of the following would be the most appropriate next diagnostic test?	
a		Cerebral angiography	
b	<u> </u>	Spinal angiography	
С	*	MRI of the spinal cord	
d		Spinal cord biopsy	
e		VER	
Se	e qu	estion Which of the following factors might be expected to worsen his condition?	
a		Bright lights	
b		Red wine	
С		Tyramine-containing compounds	
d	*	Hot weather	
e		Amantadine	
Α	23-	year-old woman awakens with bilateral leg weakness and numbness, urinary retention, and impaired	
bo	wel	control. She has had several episodes of blurred vision over the previous 2 years, but these had always	
bee	en a	ttributed to idiopathic papillitis. (Select 1 diagnosis):	
a	*	Neuromyelitis optica (Devic's disease)	
b		Central pontine myelinolysis	
с		Marchiafava-Bignami disease	
d		Acute disseminated encephalomyelitis	
e		Pelizaeus-Merzbacher disease	
Ти	vo v	veeks after recovering from a febrile illness associated with a productive cough, a 19-year-old man	
co	mpla	ains of headache and neck stiffness. These complaints are associated with fever and are soon followed by	
det	terio	rating cognitive function. He becomes disoriented, lethargic, and increasingly unresponsive. MRI reveals	
wi	desp	bread damage to the white matter of the cerebral hemispheres. (Select 1 diagnosis):	
a		Neuromyelitis optica (Devic's disease)	
b		Central pontine myelinolysis	
с		Marchiafava-Bignami disease	
d	*	Acute disseminated encephalomyelitis	
e		Pelizaeus-Merzbacher disease	
Τw	vo b	rothers, 4 and 7 years of age, exhibit limb ataxia, nystagmus, and mental retardation. MRI of their brains	
rev	/eals	areas of abnormal signal in the white matter. Cerebellar involvement is substantial. Both boys also have	
abi	norn	nally low serum cortisol levels. (Select 1 diagnosis):	
a		Neuromyelitis optica (Devic's disease)	
b		Central pontine myelinolysis	
с	*	Adrenoleukodystrophy	
d		Acute disseminated encephalomyelitis	
e		Pelizaeus-Merzbacher disease	
Α	67-y	rear-old woman with a history of type II diabetes mellitus and atrial fibrillation presents to the emergency	
roo	om v	with right body weakness and slurred speech. The onset was sudden while she was brushing her teeth 1 h	
ago, and she was brought immediately to the emergency room. She has no complaints of word-finding			
difficulties, no dysesthesia, and no headache. She is taking warfarin. Physical exam findings include blood			
pre	pressure of 205/90 and irreglarly irregular heart beat. There is left side neglect with slurred speech. There is a		
co	rtico	spinal pattern of weakness of the right body, with the face and upper extremity worse than the lower	

extremity. Routine chemistries and cell counts are normal. Her INR is Which of the following should be done next?		
a		Administer tissue plasminogen activator
h		Call a vascular surgery consult for possible endarterectomy
C	*	Order a brain CT
d		Order a cerebral angiogram
u A		Start hengrin
See	au	estion The nation has an MRI that is consistent with an acute stroke. The most common cause of stroke
is:	qu	estion The patient has an WKI that is consistent with an acute stroke. The most common cause of stroke
a	*	Atherosclerosis
b		Fibromuscular dysplasia
с		Mitral valve prolapse
d		Arterial dissection
e		Meningovascular inflammation
See	qu	estion A pure motor stroke is most likely with damage to the:
a		Internal capsule
b		Cerebellum
с		Putamen
d		Caudate
e		Amygdala
See	qu	estion A pure sensory stroke is most likely with damage to the:
a	*	Internal capsule
b		Thalamus
с		Hippocampus
d		Globus pallidus
e		Pons
A 6	1-v	ear-old man with a history of hypertension has been in excellent health until he presents with vertigo and
unst	tead	liness lasting for 2 days. He then develops nausea, vomiting, dysphagia, hoarseness, ataxia, left facial
pain	ı. a	nd right-sided sensory loss. There is no weakness. On examination, he is alert, with a normal mental
stati	us.	He vomits with head movement. There is skew deviation of the eyes, left ptosis, clumsiness of the left
arm	, ar	nd titubation. He has loss of pin and temperature sensation on the right arm and leg and decreased joint
posi	itio	n sensation in the left foot. He is unable to walk. Magnetic resonance imaging (MRI) in this patient
mig	ht l	be expected to show which of the following?
a		Basilar artery tip aneurysm
b		Right lateral medullary infarction
с	*	Left lateral medullary infarction
d		Left medial medullary infarction
e		Right medial medullary infarction
See	qu	estion The dysphagia in this case is secondary to involvement of which of the following structures?
а		Nucleus solitarius
b		Nucleus and descending tract of CN V5
с	*	Nucleus ambiguus
d		Lateral spinothalamic tract
e		Inferior cerebellar peduncle
See	an	estion Occlusion of which of the following arteries typically produces this syndrome?
a	94	Basilar artery
h	*	Vertebral artery
		Superior cerebellar artery
d		Anterior inferior cerebellar artery ($\Delta IC \Delta$)
u e		Anterior spinal artery
	5	Anterior spinar after y
hom	J-y IOn	vmous hemianonsia. He has recently had two episodes of brief upresponsiveness. There is no history of

hypertension. Computed tomography (CT) scan shows a right occipital lobe hemorrhage with some subarachnoid extension of the blood. An MRI scan with gradient echo sequences reveals foci of hemosiderin in the right temporal and left frontal cortex. The likely cause of this patient's symptoms and signs is:

а		Gliomatosis cerebri	
b		Multi-infarct dementia	
c		Mycotic aneurysm	
d	*	Amyloid angiopathy	
e		Undiagnosed hypertension	
A	22-v	ear-old male abuser of intravenous heroin complains of severe headache while having sexual intercourse	
Wi	thin	a few minutes of that complaint he develops right-sided weakness and becomes stuporous. His	
nei	irolo	ogic examination reveals neck stiffness as well as right arm and face weakness. An unenhanced	
em	erge	ency CT scan reveals a lesion of 3 to 4 cm in the cortex of the left parietal lobe. The addition of contrast	
enł	nanc	ement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the	
les	ion	in the left parietal lobe. The diagnostic study most likely to establish the basis for this patient's	
neı	ırolo	ogic deficits is:	
а	*	Cerebrospinal fluid (CSF) examination	
b		Electroencephalography	
c		Nerve conduction studies	
d		Cardiac catheterization	
e		HIV antibody testing	
Th	e na	tient's HIV antigen test is positive, but he has no depression of his CD4 (helper) T lymphocyte count	
Ne	c pu rve	conduction studies reveal generalized slowing in the legs and FEG exhibits depressed voltage over the	
lef	t nai	rietal lobe. Cardiac catheterization suggests aortic valve disease, and his CSF is xanthochromic (vellow)	
Th	e pui	obable site of injury in the CNS is:	
а а	*	An arterial wall	
h		The ventricular endothelium	
c		The pia arachnoid	
d		The dura mater	
u e		The perivenular space	
Wi	thin	1 day of admission, the national's right-sided weakness began to abate, and within 1 week it completely	
res	recolved On the fourth day of hospitalization, the nations abruntly lost consciousness and avhibited claric		
mo	ven	pents starting in his right side and generalizing to his left side. The movements stopped within 3 min, but	
he	had	residual right-sided weakness for 24 h CT scan was unchanged from that obtained on admission. The	
mo	ost a	ppropriate treatment to institute involves:	
a		Henarin	
h		Recombinant tissue plasminogen activator (r-TPA)	
c	*	Phenytoin (anticonvulsant)	
d		Warfarin	
u A		A spirip	
C See	2 (11)	Aspirin estion The focal weakness lasting for 24 h was most likely attributable to:	
300	- qu	Intracerebral hemorrhage	
a h		Subarachnoid hemorrhage	
0		Encombalitie	
с 1	*	Todd's paralysis	
u		Huponstromia	
	72 1	Trypoliationial	
A $/2$ -year-old woman has the abrupt onset of right face and hand weakness, disturbed speech production, and a right homonymous homonomic. This is near tiltable attribute here a solution of the second sec			
ng	*	L off middle corebral artory	
a h		Lott intotic corebral attery	
U C	$\left - \right $	Lett antenor cerebral artery	
C J	$\left \right $	Dight optonion chonoidel optony	
a	$\left \right $	Kight anterior choroidal aftery	
e		Lett posterior inferior cerebellar artery (PICA)	
Α.	A 39-year-old woman has diplopla several times a day for 6 weeks. She consults a physician when the double		

vision becomes unremitting, and also complains of dull pain behind her right eye. When a red glass is placed over her right eye and she is asked to look at a flashlight off to her left, she reports seeing a white light and a red light. The red light appears to her to be more to the left than the white light. Her right pupil is more dilated than her left pupil and responds less briskly to a bright light directed at it than does the left pupil. Before any further investigations can be performed, the woman develops the worst headache of her life and becomes stuporous. Her physician discovers that she has marked neck stiffness and photophobia. The physician performs a transfemoral angiogram. This radiologic study is expected to reveal that the woman has:

a		An arteriovenous malformation
b		An occipital astrocytoma
с		A sphenoidal meningioma
d		A pituitary adenoma
e	*	A saccular aneurysm
See question The cranial nerve injury likely to be responsible for all of these observations is one involving:		estion The cranial nerve injury likely to be responsible for all of these observations is one involving:
a		The second cranial nerve
b	*	The third cranial nerve
с		The fourth cranial nerve
d		The sixth cranial nerve
e		None of the above
See	e qu	estion The site of the lesion responsible for this woman's symptoms and signs is most probably the:
a		Anterior communicating artery
b	*	Posterior communicating artery
с		Anterior cerebral artery
d		Middle cerebral artery
e		Posterior cerebral artery
Th	ree	days after developing neck stiffness and photophobia, the woman develops left-sided weakness and
hy	perr	eflexia. Her left plantar response is upgoing. Her physician presumes that these deficits are a delayed
eff	ect (of the subarachnoid blood and so would treat her with:
а		Heparin
b		Warfarin
с	*	Nimodipine
d		Phenytoin
e		Carbamazepine
73-	-yea	r-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and
slu	rred	speech. On further questioning, he relates three brief episodes in the last month of sudden impairment of
vis	ion	affecting the right eye. His examination now is normal. Which of the following would be the most
app	prop	priate next diagnostic test?
a		Creatine phosphokinase (CPK)
b		Holter monitor
с		Visual evoked responses
d	*	Carotid artery Doppler ultrasound
e		Conventional cerebral angiography
Th	e ep	isodes of visual loss are most likely related to:
a		Retinal vein thrombosis
b	*	Central retinal artery ischemia
с		Posterior cerebral artery ischemia
d		Middle cerebral artery ischemia
e		Posterior ciliary artery ischemia
Α	thor	ough evaluation reveals that the patient has a 90% stenosis of the right internal carotid artery at the
bif	urca	tion. The management option most likely to prevent a future stroke is which of the following?
a		Warfarin
b		Carotid artery angioplasty
с	*	Carotid endarterectomy
d		Extracranial-intracranial bypass

e		Aspirin			
A	A 39-year-old woman has diplopia several times a day for 6 weeks. She consults a physician when the double				
vis	vision becomes unremitting, and also complains of dull pain behind her right eye. When a red glass is placed				
ove	over her right eye and she is asked to look at a flashlight off to her left, she reports seeing a white light and a				
red	l lig	ht. The red light appears to her to be more to the left than the white light. Her right pupil is more dilated			
tha	n he	er left pupil and responds less briskly to a bright light directed at it than does the left pupil. Before any			
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stu	pore	ous. Her physician discovers that she has marked neck stiffness and photophobia. The physician performs			
a t	rans	femoral angiogram. The site of the lesion responsible for this woman's symptoms and signs is most			
pro	obab	ly the:			
a		Anterior communicating artery			
b	*	Posterior communicating artery			
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b		Carotid artery angioplasty			
с	*	Carotid endarterectomy			
d		Extracranial-intracranial bypass			
e		Aspirin			
Α	62-1	vear-old man with a history of myocardial infarction awakens with a dense right-sided hemiplegia. His			
eve	es ar	re tonically deviated to the left, and he does not respond to threat on the right side of his visual field. He			
api	bear	s to be alert and responds to pain on the left side of his body. His speech is unintelligible and nonfluent.			
and	d he	follows no instructions. Efforts to get him to repeat simple phrases consistently fail:			
a		Broca's aphasia			
b		Wernicke's aphasia			
с		Transcortical sensory aphasia			
d		Anomic aphasia			

C	*	Global aphasia	
Α	45-	year-old woman with chronic atrial fibrillation discontinues warfarin treatment and abruptly develops	
pro	ble:	ms with language comprehension. She is able to produce some intelligible phrases and produces sound	
qui	quite fluently: however, she is unable to follow simple instructions or to repeat simple phrases. On attempting		
to	to write, she becomes very frustrated and agitated. Emergency MRI reveals a lesion of the left temporal lobe		
tha	t ex	tends into the superior temporal gyrus:	
а		Broca's aphasia	
b	*	Wernicke's aphasia	
с		Transcortical sensory aphasia	
d		Transcortical motor aphasia	
e		Anomic aphasia	
A '	71-3	vear-old man develops headache and slight difficulty speaking while having sexual intercourse. He has a	
lon	ig-st	tanding history of hypertension, but has been on medication for more than 7 years. He makes frequent	
err	ors	in finding words and follows complex commands somewhat inconsistently. The most obvious defect in	
his	lar	in memory words and follows complex community somewhat meonsistently. The most obvious detect m repeated errors. An	
em	erge	ency CT scan reveals an intracerebral hemorrhage in the left parietal lobe that appears to communicate	
wit	h th	ne lateral ventricle:	
2		Anomic anhasia	
h		Global aphasia	
C	*	Conduction aphasia	
d		Mixed transcortical aphasia	
u A		Transcortical sensory anhasia	
Δ	24^{-1}	vear-old woman abruntly loses all sneech during the third trimester of an otherwise uncomplicated	
nre	2 4 -	new She has a history of severe migraines during which she occasionally develops a transient right	
her	,giia ninl	legia Her comprehension is good and she is frustrated by her inability to speak or write. She is unable to	
ren	mpi Neat	simple phrases but she does begin to produce simple words within 5 days of the acute disturbance of	
lan	ona	ae.	
Tan	gua		
ิล	*	Broca's anhasia	
a b	*	Broca's aphasia Wernicke's aphasia	
a b	*	Broca's aphasia Wernicke's aphasia Transcortical sensory aphasia	
a b c	*	Broca's aphasia Wernicke's aphasia Transcortical sensory aphasia Transcortical motor aphasia	
a b c d	*	Broca's aphasia Wernicke's aphasia Transcortical sensory aphasia Transcortical motor aphasia	
a b c d e	79	Broca's aphasia Wernicke's aphasia Transcortical sensory aphasia Transcortical motor aphasia Anomic aphasia	
a b c d e A Po	78-	Broca's aphasia Wernicke's aphasia Transcortical sensory aphasia Transcortical motor aphasia Anomic aphasia year-old man suffers a cardiac arrest while being treated in an emergency room for chest pain.	
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a b c d e A Re rhy ext app to, a b c d e e A c d uns pai sta arm	* 78- susc thm uba pare he f * 51-y stead n, a tus. n, au	Broca's aphasia Wernicke's aphasia Transcortical sensory aphasia Transcortical motor aphasia Anomic aphasia year-old man suffers a cardiac arrest while being treated in an emergency room for chest pain. citation is initiated immediately, but profound hypotension is observed for at least 20 min. A cardiac is restored, but the patient remains unconscious for the next 3 days. When he is awake, alert, and ted, his speech is limited to repetition of words and sounds produced by those around him. He has no nt comprehension of language and produces few sounds spontaneously. Whenever the patient is spoken fairly accurately repeats what was said to him: Broca's aphasia Wernicke's aphasia Transcortical sensory aphasia Transcortical motor aphasia Mixed transcortical aphasia ear-old man with a history of hypertension has been in excellent health until he presents with vertigo and diness lasting for 2 days. He then develops nausea, vomiting, dysphagia, hoarseness, ataxia, left facial and right-sided sensory loss. There is no weakness. On examination, he is alert, with a normal mental He vomits with head movement. There is skew deviation of the eyes, left ptosis, clumsiness of the left nd titubation. He has loss of pin and temperature sensation on the right arm and leg and decreased joint	
a b c d e A Re rhy ext app to, a b c d e A uns pai sta arm pos	* 78- suscorrent wuba bare he f he f \$ 51-y steau n, a sitio	Broca's aphasia Mernicke's aphasia Transcortical motor aphasia Anomic aphasia year-old man suffers a cardiac arrest while being treated in an emergency room for chest pain. citation is initiated immediately, but profound hypotension is observed for at least 20 min. A cardiac n is restored, but the patient remains unconscious for the next 3 days. When he is awake, alert, and ted, his speech is limited to repetition of words and sounds produced by those around him. He has no nt comprehension of language and produces few sounds spontaneously. Whenever the patient is spoken fairly accurately repeats what was said to him: Broca's aphasia Wernicke's aphasia Transcortical ensory aphasia Mixed transcortical aphasia Mixed transcortical aphasia ear-old man with a history of hypertension has been in excellent health until he presents with vertigo and diness lasting for 2 days. He then develops nausea, vomiting, dysphagia, hoarseness, ataxia, left facial nd right-sided sensory loss. There is no weakness. On examination, he is alert, with a normal mental He vomits with head movement. There is skew deviation of the eyes, left ptosis, clumsiness of the left nd titubation. He has loss of pin and temperature sensation on the right arm and leg and decreased joint nsensation in the left foot. He is unable to walk. Magnetic resonance	
a b c d e A Re rhy ext app to, a b c d e A c d e a mi	* 78- susc /thm uba pare he f he f * 51-y stea n, a sitio ght	Broca's aphasia Broca's aphasia Transcortical sensory aphasia Transcortical motor aphasia Anomic aphasia year-old man suffers a cardiac arrest while being treated in an emergency room for chest pain. citation is initiated immediately, but profound hypotension is observed for at least 20 min. A cardiac is restored, but the patient remains unconscious for the next 3 days. When he is awake, alert, and ted, his speech is limited to repetition of words and sounds produced by those around him. He has no nt comprehension of language and produces few sounds spontaneously. Whenever the patient is spoken fairly accurately repeats what was said to him: Broca's aphasia Transcortical sensory aphasia Transcortical sensory aphasia Transcortical motor aphasia Mixed transcortical aphasia mear-old man with a history of hypertension has been in excellent health until he presents with vertigo and diness lasting for 2 days. He then develops nausea, vomiting, dysphagia, hoarseness, ataxia, left facial and right-sided sensory loss. There is no weakness. On examination, he is alert, with a normal mental He vomits with head movement. There is skew deviation of the eyes, left ptosis, clumsiness of the left nd titubation. He has loss of pin and temperature sensation on the right arm and leg and decreased joint on sensation in the left foot. He is unable to walk. Magnetic resonance imaging (MRI) in this patient be expected to show which of the following?	
a b c d e A Re rhy ext app to, a b c d e a A c d e a a mi gai sta a a mi sta	* 78- susc /thm uba pare he f % 51-y stead n, a sitio ght	Broca's aphasia Transcortical sensory aphasia Transcortical motor aphasia Anomic aphasia year-old man suffers a cardiac arrest while being treated in an emergency room for chest pain. itation is initiated immediately, but profound hypotension is observed for at least 20 min. A cardiac n is restored, but the patient remains unconscious for the next 3 days. When he is awake, alert, and ted, his speech is limited to repetition of words and sounds produced by those around him. He has no nt comprehension of language and produces few sounds spontaneously. Whenever the patient is spoken fairly accurately repeats what was said to him: Broca's aphasia Wernicke's aphasia Transcortical sensory aphasia Transcortical motor aphasia Mixed transcortical aphasia ear-old man with a history of hypertension has been in excellent health until he presents with vertigo and diness lasting for 2 days. He then develops nausea, vomiting, dysphagia, hoarseness, ataxia, left facial und right-sided sensory loss. There is no weakness. On examination, he is alert, with a normal mental He vomits with head movement. There is skew deviation of the eyes, left ptosis, clumsiness of the left nd titubation. He has loss of pin and temperature sensation on the right arm and leg and decreased joint on sensation in the left foot. He is unable to walk. Magnetic resonance imaging (MRI) in this patient be expected to show which of the following? Basilar artery tip aneurysm	

c * Left lateral medullary infarction

d		Left medial medullary infarction
e		Right medial medullary infarction
Se	e qu	estion The dysphagia in this case is secondary to involvement of which of the following structures?
a		Nucleus solitarius
b		Nucleus and descending tract of CN V5
с	*	Nucleus ambiguus
d		Lateral spinothalamic tract
e		Inferior cerebellar peduncle
Se	e au	estion Occlusion of which of the following arteries typically produces this:
3	l qu	Basilar artery
h	*	Vertebral artery
C		Superior cerebellar artery
d	-	$\Delta \text{nterior inferior cerebellar artery} (\Delta IC \Delta)$
u		Antorior spinal artery
	75 .	Anterior spinal artery
A ho	73-y	vera-old mail with a history of recent memory impairment is admitted with headache, comusion, and a left
hu	mont	symous nermanopsia. He has recently had two episodes of other unresponsiveness. There is no history of
ny	boro	chroid extension of the blood. An MDI seen with anotient each sequences reveals fact of hemosiderin in
su th	Dara	the temporal and left frontal cortex. The likely cause of this nationt's symptoms and signs is:
ui		Cliometoric corebri
a h		Multi information
D	*	Multi-Infarct dementia
<u>c</u>	*	Amyloid angiopathy
a		Undiagnosed hypertension
e		Brain tumor
A	22-y	ear-old male abuser of intravenous heroin complains of severe headache while having sexual intercourse.
W	1thin	a few minutes of that complaint, he develops right-sided weakness and becomes stuporous. His
ne	urol	ogic examination reveals neck stiffness as well as right arm and face weakness. An unennanced
en	lerge	ency C1 scan reveals a lesion of 5 to 4 cm in the cortex of the left particulation. The addition of contrast
	ianc	in the left noriestal lobe. The diagnostic study most likely to establish the basis for this nationt's
nes	51011 11rol	in the left particular lobe. The diagnostic study most likely to establish the basis for this patient's
ne	*	Combined fluid (CSE) examination
a h	*	Electroen conhele granhe
0		Nerve conduction studies
C		Condication studies
a		
e T1		
	ne pa	atient's HIV antigen test is positive, but he has no depression of his CD4 (helper) I lymphocyte count.
Ne 1	erve	conduction studies reveal generalized slowing in the legs, and EEG exhibits depressed voltage over the
	t pa	rietal lobe. Cardiac catheterization suggests aortic valve disease, and his CSF is xanthochromic (yellow).
11	ie pr	obable site of injury in the CNS is:
a 1	Ť	An arterial wall
b		The ventricular endothelium
С	_	The pia arachnoid
d		The dura mater
e		The perivenular space
W	ithin	1 day of admission, the patient's right-sided weakness began to abate, and within 1 week it completely
res	solve	ed. On the fourth day of hospitalization, the patient abruptly lost consciousness and exhibited clonic
m	oven	nents starting in his right side and generalizing to his left side. The movements stopped within 3 min, but
he	had	residual right-sided weakness for 24 h. CT scan was unchanged from that obtained on admission. The
m	ost a	ppropriate treatment to institute involves:
a		Heparin
b		Recombinant tissue plasminogen activator (r-TPA)
c	*	Phenytoin (anticonvulsant)

d Worforin	I
a An exterial well	
C All alternal wall See question The focal weakness lesting for 24 h was most likely attributable to:	
See question The local weakness lasting for 24 if was most likely attributable to.	
a Intracticoral hemorrhage	
b Subaracinioid hemorriage	
d * Todd's porelysis	
a Hyperstremic	
A 72 year old woman has the abrunt anget of right face and hand weakness disturbed speech meduation	anda
right homonymous hemianopsia. This is most likely attributable to occlusion of the:	and a
a * Left middle cerebral artery	
b Left anterior cerebral artery	
c Left vertebrobasilar artery	
d Left posterior inferior cerebellar artery (PICA)	
e Right vertebrobasilar arterv	
A 39-year-old woman has diplopia several times a day for 6 weeks. She consults a physician when the c	ouble
vision becomes unremitting, and also complains of dull pain behind her right eve. When a red glass is t	blaced
over her right eve and she is asked to look at a flashlight off to her left, she reports seeing a white light	and a
red light. The red light appears to her to be more to the left than the white light. Her right pupil is more of	ilated
than her left pupil and responds less briskly to a bright light directed at it than does the left pupil. Before	e anv
further investigations can be performed, the woman develops the worst headache of her life and be	comes
stuporous. Her physician discovers that she has marked neck stiffness and photophobia. The physician per	forms
a transfemoral angiogram. This radiologic study is expected to reveal that the woman has:	
a An arteriovenous malformation	
b An occipital astrocytoma	
c A sphenoidal meningioma	
d A pituitary adenoma	
e * A saccular aneurysm	
A 39-year-old woman has diplopia several times a day for 6 weeks. She consults a physician when the c	ouble
vision becomes unremitting, and also complains of dull pain behind her right eye. When a red glass is	blaced
over her right eye and she is asked to look at a flashlight off to her left, she reports seeing a white light	and a
red light. The red light appears to her to be more to the left than the white light. Her right pupil is more d	ilated
than her left pupil and responds less briskly to a bright light directed at it than does the left pupil. Before	e any
further investigations can be performed, the woman develops the worst headache of her life and be	omes
stuporous. Her physician discovers that she has marked neck stiffness and photophobia. The physician per	forms
a transfemoral angiogram. The site of the lesion responsible for this woman's symptoms and signs is	most
probably the:	
a Anterior communicating artery	
b * Posterior communicating artery	
c Anterior cerebral artery	
d Middle cerebral artery	
e Posterior cerebral artery	
Three days after developing neck stiffness and photophobia, the woman develops left-sided weakness	s and
hyperreflexia. Her left plantar response is upgoing. Her physician presumes that these deficits are a deficit are are a deficit are	layed
effect of the subarachnoid blood and so would treat her with:	
a Heparin	
b Warfarin	
c * Nimodipine	
d Phenytoin	
e Carbamazepine	

73-year-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and slurred speech. On further questioning, he relates three brief episodes in the last month of sudden impairment of vision affecting the right eye. His examination now is normal. Which of the following would be the most

appropriate next diagnostic test?			
a	Creatine phosphokinase (CPK)		
b	Holter monitor		
c	Visual evoked responses		
d *	Carotid artery Doppler ultrasound		
e	Conventional cerebral angiography		
See o	estion The episodes of visual loss are most likely related to:		
3	Refinal vein thrombosis		
h *	Central retinal artery ischemia		
C	Posterior cerebral artery ischemia		
d	Middle cerebral artery ischemia		
u o	Posterior ciliary artery ischemia		
A the	To sector entry area y is chemical r_{10} and r_{10}		
hifur	but the management option most likely to prevent a future stroke is which of the following?		
onur	Worforin		
a b	Wallalli Carotid artery angionlasty		
	Carotid and arterestomy		
	Catolic citical citerio contraction in the second s		
u	Extractamat-mutactamat bypass		
e (2	Aspirin		
A 62	year-old man with a history of myocardial infarction awakens with a dense right-sided nemiplegia. His		
eyes	re tonically deviated to the left, and he does not respond to threat on the right side of his visual field. He		
appea	s to be alert and responds to pain on the left side of his body. His speech is unintelligible and nonfluent,		
and n	Dreas's subscie		
a 1	Broca's aphasia		
D			
C J 4	Anomic aphasia		
d *	Global apnasia		
e	Apnasia		
A 45	year-old woman with chronic atrial librillation discontinues warrarin treatment and abruptly develops		
probl	This with language comprehension. She is able to produce some intemptote phrases and produces sound Therefore the issues of a strength of the		
quite	the she becomes yory frustrated and agitated. Emergency MBL reveals a losion of the left temporal lobe		
that c	te, she becomes very flustrated and agrated. Emergency with reveals a resion of the left temporal lobe		
	Broce's aphasia		
a b	Dioca's aphasia		
0	Transportional songory on hosis		
C	Transcortical motor orbosis		
a *	A nomio enhacia		
e	Anomic aphasia		
A /1	year-old man develops headache and slight difficulty speaking while having sexual intercourse. He has a		
long-	in finding history of hypertension, but has been on medication for more than / years. He makes frequent		
error	in finding words and follows complex commands somewhat inconsistently. The most obvious defect in		
	iguage function is instantiation in the simplest of phrases without making repeated errors. An		
emer	ency CT scan reveals an intracerebral hemorrhage in the left particular lobe that appears to communicate		
witti			
a b	Allohal aphasia		
	Conduction enhagin		
	Volucion apliasia Mixed transportion appagia		
u	Transcortical motor aphasia		
e A 24	Transcortical motor appasta		
A 24-year-old woman abruptly loses all speech during the third trimester of an otherwise uncomplicated			
pregr	uncy. She has a history of severe inigraines during which she occasionally develops a transient right		
nemi	legia. Her comprehension is good, and she is trustrated by her inability to speak or write. She is unable to		
repea	repeat simple phrases, but she does begin to produce simple words within 5 days of the acute disturbance of		

lon	0110	
	gua	go. Draga's aphasia
a h		Wernieke's aphasia
0		Transportion service subscie
C d		Transcortical sensory aphasia
a		I ranscortical motor aphasia
e		Conduction aphasia
A	78-	year-old man suffers a cardiac arrest while being treated in an emergency room for chest pain.
Re	susc	itation is initiated immediately, but profound hypotension is observed for at least 20 min. A cardiac
rhy	<i>ithm</i>	is restored, but the patient remains unconscious for the next 3 days. When he is awake, alert, and
ext	uba	ted, his speech is limited to repetition of words and sounds produced by those around him. He has no
ap	pare	nt comprehension of language and produces few sounds spontaneously. Whenever the patient is spoken
to,	he t	airly accurately repeats what was said to him:
a		Broca's aphasia
b		Wernicke's aphasia
с		Transcortical sensory aphasia
d		Transcortical motor aphasia
e	*	Mixed transcortical aphasia
A	57-y	ear-old woman with a history of type II diabetes mellitus and atrial fibrillation presents to the emergency
roo	om v	vith right body weakness and slurred speech. The onset was sudden while she was brushing her teeth 1 h
age) , a	nd she was brought immediately to the emergency room. She has no complaints of word-finding
dif	ficu	lties, no dysesthesia, and no headache. She is taking warfarin. Physical exam findings include blood
pre	essui	e of 205/90 and irreglarly irregular heart beat. There is left side neglect with slurred speech. There is a
con	tico	spinal pattern of weakness of the right body, with the face and upper extremity worse than the lower
ext	rem	ity. Routine chemistries and cell counts are normal. Her INR is Which of the following should be done
ne	xt?	
а		Administer tissue plasminogen activator
b		Call a vascular surgery consult for possible endarterectomy
с	*	Order a brain CT
d		Order a cerebral angiogram
e		Start heparin
Se	e au	estion The patient has an MRI that is consistent with an acute stroke. The most common cause of stroke
is:	- 1-	
a	*	Atherosclerosis
h		Fibromuscular dysplasia
C		Mitral valve prolanse
d		Arterial dissection
a		Maningovascular inflammation
	51 -	intering ovascular initialinitiation war old man with a history of hypertansion has been in avgallant health until he presents with vertice and
A	utoor	tinges lasting for 2 days. He then develops neuson, vomiting dyenhosis, hourseness, stavic, left facial
un	steat	nd right sided sensory loss. There is no weekness. On exemination he is elect with a normal montal
pa	II, a	He was with head movement. There is skew deviation of the eves left storig alumpiness of the left
Sta	ius.	ad titubation. He has loss of nin and temperature consistion on the right arm and los and decreased joint
an	u, al	n sensation in the left foot. He is unable to welly. Magnetic resonance imaging (MDI) in this nation
po:	oiu0 ah+ ¹	a sensation in the terr root. The is unable to wark. Magnetic resolution infigure (MIKI) in this patient
		Pasilor artery tip anouryom
a h	$\left - \right $	Dashar artery up aneuryshi Dight lateral modullary information
0	*	Laft lateral modullary inforction
C		Left medial medullary infanction
a		Let medial medullary infarction
e		Right medial medullary infarction
See question The dysphagia in this case is secondary to involvement of which of the following structures?		
a		Nucleus solitarius
b		Nucleus and descending tract of CN V5
С	*	Nucleus ambiguus

d		Lateral spinothalamic tract			
e		Inferior cerebellar peduncle			
Se	See question Occlusion of which of the following arteries typically produces thissyndrome?				
a		Basilar artery			
b	*	Vertebral artery			
с		Superior cerebellar artery			
d		Anterior inferior cerebellar artery (AICA)			
e		Anterior spinal artery			
Th	e pa	tient's HIV antigen test is positive, but he has no depression of his CD4 (helper) T lymphocyte count.			
Ne	erve	conduction studies reveal generalized slowing in the legs, and EEG exhibits depressed voltage over the			
lef	t pa	rietal lobe. Cardiac catheterization suggests aortic valve disease, and his CSF is xanthochromic (yellow).			
Th	e pr	obable site of injury in the CNS is:			
a	*	An arterial wall			
b		The ventricular endothelium			
с		The pia arachnoid			
d		The dura mater			
e		The perivenular space			
Se	e qu	estion The focal weakness lasting for 24 h was most likely attributable to:			
a		Intracerebral hemorrhage			
b		Subarachnoid hemorrhage			
с		Encephalitis			
d	*	Todd's paralysis			
e		Hyponatremia			
A	72-у	ear-old woman has the abrupt onset of right face and hand weakness, disturbed speech production, and a			
rig	ht h	omonymous hemianopsia. This is most likely attributable to occlusion of the:			
a	*	Left middle cerebral artery			
b		Left anterior cerebral artery			
с		Left vertebrobasilar artery			
d		Right anterior choroidal artery			
e		Left posterior inferior cerebellar artery (PICA)			
Se	e qu	estion The site of the lesion responsible for this woman's symptoms and signs is most probably the:			
a		Anterior communicating artery			
b	*	Posterior communicating artery			
с		Anterior cerebral artery			
d		Middle cerebral artery			
e		Posterior cerebral artery			
Th	ree	days after developing neck stiffness and photophobia, the woman develops left-sided weakness and			
hy	perr	eflexia. Her left plantar response is upgoing. Her physician presumes that these deficits are a delayed			
eff	ect of	of the subarachnoid blood and so would treat her with:			
a		Heparin			
b		Warfarin			
с	*	Nimodipine			
d		Phenytoin			
e		Carbamazepine			
A	67-y	ear-old woman with a history of type II diabetes mellitus and atrial fibrillation presents to the emergency			
room with right body weakness and slurred speech. The onset was sudden while she was brushing her teeth 1 h					
ago, and she was brought immediately to the emergency room. She has no complaints of word-finding					
dif	ficu	lties, no dysesthesia, and no headache. She is taking warfarin. Physical exam findings include blood			
pre	essu	re of 205/90 and irreglarly irregular heart beat. There is left side neglect with slurred speech. There is a			

corticospinal pattern of weakness of the right body, with the face and upper extremity worse than the lower extremity. Routine chemistries and cell counts are normal. Her INR is Which of the following should be done next? A pure motor stroke is most likely with damage to the:

a * Internal capsule

b		Cerebellum	
с		Caudate	
d		Amygdala	
e		Nothing	
Se	e qu	estion A pure sensory stroke is most likely with damage to the:	
а		Internal capsule	
b	*	Thalamus	
C		Hippocampus	
d		Pons	
u A		Internal cancula	
C So		action The dysphagia in this case is secondary to involvement of which of the following structures?	
30	c qu	Nucleus solitarius	
a b		Nucleus and descending tract of CN V5	
0	*	Nucleus and descending fract of CIN V3	
C	**	Nucleus ambiguus	
a		Lateral spinothalamic tract	
e		Inferior cerebellar peduncie	
Se	e qu	estion Occlusion of which of the following arteries typically produces this syndrome?	
a		Basilar artery	
b	*	Vertebral artery	
с		Superior cerebellar artery	
d		Anterior inferior cerebellar artery (AICA)	
e		Nothing	
A	22-у	ear-old male abuser of intravenous heroin complains of severe headache while having sexual intercourse.	
Wi	ithin	a few minutes of that complaint, he develops right-sided weakness and becomes stuporous. His	
net	urolo	ogic examination reveals neck stiffness as well as right arm and face weakness. An unenhanced	
em	erge	ency CT scan reveals a lesion of 3 to 4 cm in the cortex of the left parietal lobe. The addition of contrast	
enl	hanc	ement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the	
les	ion	in the left parietal lobe. The diagnostic study most likely to establish the basis for this patient's	
neu	urolo	ogic deficits is a. HIV antibody testing:	
а	*	Cerebrospinal fluid (CSF) examination	
b		Electroencephalography	
с		Nerve conduction studies	
d		Cardiac catheterization	
e		Nothing	
Th	e pa	tient's HIV antigen test is positive but he has no depression of his CD4 (helper) T lymphocyte count	
Ne	rve	conduction studies reveal generalized slowing in the legs and EEG exhibits depressed voltage over the	
lef	t nai	rietal lobe. Cardiac catheterization suggests aortic valve disease, and his CSF is xanthochromic (vellow)	
Th	e pro	obable site of injury in the CNS is:	
a	*	An arterial wall	
h		The ventricular endothelium	
C		The ventredual endothendual	
d		The dura mater	
u o		The perivenular space	
	20 t	The perivential space	
	J9-y	becomes unremitting, and also complains of dull pain behind her right ave. When a red glass is placed	
v15	or h	pr right ava and sha is asked to look at a flashlight off to her left, she reports seeing a white light and a	
and light. The red light encours to her to be more to the left then the white light. Her right puril is more dilated			
then her left munil and responde less brickly to a brickt light directed at it then does the left munil. Defere any			
further investigations can be performed, the women develops the worst besides to be left pupil. Before any			
	interimvestigations can be performed, the woman develops the worst headache of her life and becomes		
supprous. The physician discovers that she has marked neck summers and photophotola. The physician performs			
aŭ	ans	An accimital estreautome	
a 1.	$\left \right $	An occipital astrocytoma	
D	1	A sphenoidal meningioma	

с		A pituitary adenoma		
d	*	A saccular aneurysm		
e		Nothing		
See question The cranial nerve injury likely to be responsible for all of these observations is one involving:				
а		The second cranial nerve		
b	*	The third cranial nerve		
с		The fourth cranial nerve		
d		None of the above		
e		Nothing		
73	-yea	r-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and		
slu	irred	speech. On further questioning, he relates three brief episodes in the last month of sudden impairment of		
vis	sion	affecting the right eye. His examination now is normal. Which of the following would be the most		
ap	prop	riate next diagnostic test?		
a		Creatine phosphokinase (CPK)		
b		Holter monitor		
с		Visual evoked responses		
d	*	Carotid artery Doppler ultrasound		
e		Conventional cerebral angiography		
Th	e ep	isodes of visual loss are most likely related to:		
a		Retinal vein thrombosis		
b	*	Central retinal artery ischemia		
c		Posterior cerebral artery ischemia		
d		Middle cerebral artery ischemia		
e		Posterior ciliary artery ischemia		
Th	e pa	tient's HIV antigen test is positive, but he has no depression of his CD4 (helper) T lymphocyte count.		
Ne	erve	conduction studies reveal generalized slowing in the legs, and EEG exhibits depressed voltage over the		
lef	't pa	rietal lobe. Cardiac catheterization suggests aortic valve disease, and his CSF is xanthochromic (yellow).		
Th	e pr	obable site of injury in the CNS is:		
a	*	An arterial wall		
b		The ventricular endothelium		
с		The pia arachnoid		
d		The perivenular space		
e		Cortex		
W	ithin	1 day of admission, the patient's right-sided weakness began to abate, and within 1 week it completely		
res	solve	ed. On the fourth day of hospitalization, the patient abruptly lost consciousness and exhibited clonic		
ma	oven	nents starting in his right side and generalizing to his left side. The movements stopped within 3 min, but		
he	had	residual right-sided weakness for 24 h. CT scan was unchanged from that obtained on admission. The		
mo	ost a	ppropriate treatment to institute involves:		
a		Heparin		
b		Recombinant tissue plasminogen activator (r-TPA)		
С	*	Phenytoin (anticonvulsant)		
d		Warfarin		
e		Aspirin		
Se	e qu	estion The focal weakness lasting for 24 h was most likely attributable to:		
a		Intracerebral hemorrhage		
b		Subarachnoid hemorrhage		
С		Encephalitis		
d	*	Todd's paralysis		
e		Hyponatremia		
A 72-year-old woman has the abrupt onset of right face and hand weakness, disturbed speech production, and a				
rig	ht h	omonymous hemianopsia. This is most likely attributable to occlusion of the:		
a	*	Left middle cerebral artery		
b		Lett anterior cerebral artery		

с		Left vertebrobasilar artery		
d		Right anterior choroidal artery		
e		Right middle cerebral artery		
See question The site of the lesion responsible for this woman's symptoms and signs is most probably the:				
a		Anterior communicating artery		
b	*	Posterior communicating artery		
с		Anterior cerebral artery		
d		Middle cerebral artery		
e		Posterior cerebral artery		
Th	ree	days after developing neck stiffness and photophobia the woman develops left-sided weakness and		
hy	perr	eflexia. Her left plantar response is upgoing. Her physician presumes that these deficits are a delayed		
eff	ect (of the subarachnoid blood and so would treat her with:		
a		Heparin		
b		Warfarin		
С	*	Nimodipine		
d		Phenytoin		
e		Aspirin		
Α	thor	rough evaluation reveals that the patient has a 90% stenosis of the right internal carotid artery at the		
bif	urca	tion. The management option most likely to prevent a future stroke is which of the following?		
a		Warfarin		
b		Carotid artery angioplasty		
с	*	Carotid endarterectomy		
d		Aspirin		
e		Heparin		
Α	62-y	year-old man with a history of myocardial infarction awakens with a dense right-sided hemiplegia. His		
ey	es ai	re tonically deviated to the left, and he does not respond to threat on the right side of his visual field. He		
ap	pear	s to be alert and responds to pain on the left side of his body. His speech is unintelligible and nonfluent,		
an	d he	follows no instructions. Efforts to get him to repeat simple phrases consistently fail:		
a		Broca's aphasia		
b		Wernicke's aphasia		
С		Transcortical sensory aphasia		
d		Anomic aphasia		
e	*	Global aphasia		
Α	24-	year-old woman abruptly loses all speech during the third trimester of an otherwise uncomplicated		
pre	egna	ncy. She has a history of severe migraines during which she occasionally develops a transient right		
he	mipl	legia. Her comprehension is good, and she is frustrated by her inability to speak or write. She is unable to		
rep	beat	simple phrases, but she does begin to produce simple words within 5 days of the acute disturbance of		
lar	igua	ge:		
a	*	Broca's aphasia		
b		Wernicke's aphasia		
с		Transcortical sensory aphasia		
d		Anomic aphasia		
e		Conductive aphasia		
A	78-	vear-old man suffers a cardiac arrest while being treated in an emergency room for chest pain.		
Re	susc	itation is initiated immediately, but profound hypotension is observed for at least 20 min. A cardiac		
rhy	vthm	is restored, but the patient remains unconscious for the next 3 days. When he is awake, alert, and		
ex	extubated, his speech is limited to repetition of words and sounds produced by those around him. He has no			
apparent comprehension of language and produces few sounds spontaneously. Whenever the patient is spoken				
to, he fairly accurately repeats what was said to him:				
a		Broca's aphasia		
b	*	Wernicke's aphasia		
c		Transcortical sensory aphasia		
d		Transcortical sensory aphasia		
	1	······································		

e		Anomic aphasia		
A	61-y	ear-old man with a history of hypertension has been in excellent health until he presents with vertigo and		
unsteadiness lasting for 2 days. He then develops nausea, vomiting, dysphagia, hoarseness, ataxia, left facial				
pai	in, a	nd right-sided sensory loss. There is no weakness. On examination, he is alert, with a normal mental		
sta	tus.	He vomits with head movement. There is skew deviation of the eyes, left ptosis, clumsiness of the left		
arr	n, aı	nd titubation. He has loss of pin and temperature sensation on the right arm and leg and decreased joint		
pos	sitio	n sensation in the left foot. He is unable to walk. Occlusion of which of the following arteries typically		
pro	oduc	es this syndrome?		
a		Basilar artery		
b	*	Vertebral artery		
с		Superior cerebellar artery		
d		Anterior inferior cerebellar artery (AICA)		
e		Anterior spinal artery		
A	22-v	ear-old male abuser of intravenous heroin complains of severe headache while having sexual intercourse.		
Wi	ithin	a few minutes of that complaint, he develops right-sided weakness and becomes stuporous. His		
nei	urolo	ogic examination reveals neck stiffness as well as right arm and face weakness. An unenhanced		
em	erge	ency CT scan reveals a lesion of 3 to 4 cm in the cortex of the left parietal lobe. The addition of contrast		
enl	hanc	ement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the		
les	ion	in the left parietal lobe. The diagnostic study most likely to establish the basis for this patient's		
nei	urolo	pric deficits is:		
8	*	Cerebrospinal fluid (CSF) examination		
h		Electroencenhalography		
<u>с</u>		Nerve conduction studies		
d		Cardiac catheterization		
u A		HIV antibody testing		
	ithin	1 day of admission, the nation's right sided weakness began to abate, and within 1 weak it completely.		
ros		A On the fourth day of hospitalization, the patient abruntly lost consciousness and exhibited clonic		
m	Wer	and control and appendiction, the patient abruptly lost consciousness and exhibited clothe		
ho	had	residual right sided weakness for 24 h. CT scan was unchanged from that obtained on admission. The		
m	nau set a	ppropriate treatment to institute involves:		
0	ist a	Honorin		
a h		Person province and the second s		
0	*	Phonytoin (anticonyulgant)		
<u>c</u> d		Werferin		
a				
e é				
A	/2-y 1.4 1.	ear-old woman has the abrupt onset of right face and hand weakness, disturbed speech production, and a		
rig	nt no	bmonymous nemianopsia. This is most likely attributable to occlusion of the:		
a .	Ť	Left middle cerebral artery		
b		Left anterior cerebral artery		
С		Left vertebrobasilar artery		
d		Right anterior choroidal artery		
e		Left posterior inferior cerebellar artery (PICA)		
See	e qu	estion The cranial nerve injury likely to be responsible for all of these observations is one involving:		
a		The second cranial nerve		
b	*	The third cranial nerve		
c		The fourth cranial nerve		
d		The sixth cranial nerve		
e		None of the above		
Th	ree	days after developing neck stiffness and photophobia, the woman develops left-sided weakness and		
hyperreflexia. Her left plantar response is upgoing. Her physician presumes that these deficits are a delayed				
effect of the subarachnoid blood and so would treat her with:				
a		Heparin		
b		Warfarin		

с	*	Nimodipine			
d		Phenytoin			
e		Carbamazenine			
Sec	See question The enigedes of visual loss are most likely related to:				
50	c qu	Patinal voin thrombosis			
a h	*	Central retired enterwised emis			
D	*	Central retinal artery ischemia			
С		Posterior cerebral artery ischemia			
d		Middle cerebral artery ischemia			
e		Posterior ciliary artery ischemia			
A	62-у	year-old man with a history of myocardial infarction awakens with a dense right-sided hemiplegia. His			
eye	es ar	re tonically deviated to the left, and he does not respond to threat on the right side of his visual field. He			
app	pear	s to be alert and responds to pain on the left side of his body. His speech is unintelligible and nonfluent,			
and	d he	follows no instructions. Efforts to get him to repeat simple phrases consistently fail:			
a		Broca's aphasia			
b		Wernicke's aphasia			
с		Transcortical sensory aphasia			
d		Anomic aphasia			
e	*	Global aphasia			
Δ	71_v	ver-old man develops headache and slight difficulty speaking while having sexual intercourse. He has a			
	/ 1-y	anding history of hypertension, but has been on medication for more than 7 years. He makes frequent			
orr	ig-si	in finding words and follows complex commands somewhat inconsistently. The most obvious defect in			
	1015	in midning words and follows complex commands somewhat inconsistently. The most obvious defect in			
ms	Tan	iguage function is his machine to repeat the simplest of phrases without making repeated errors. An			
em	lerge	ency CT scan reveals an intracerebrar hemormage in the left partetal lobe that appears to communicate			
W11	th th	lateral ventricle:			
a		Anomic aphasia			
b		Global aphasia			
С	*	Conduction aphasia			
d		Mixed transcortical aphasia			
e		Transcortical sensory aphasia			
Α	78-3	year-old man suffers a cardiac arrest while being treated in an emergency room for chest pain.			
Re	susc	citation is initiated immediately, but profound hypotension is observed for at least 20 min. A cardiac			
rhy	thm	n is restored, but the patient remains unconscious for the next 3 days. When he is awake, alert, and			
ext	uba	ted, his speech is limited to repetition of words and sounds produced by those around him. He has no			
app	oare	nt comprehension of language and produces few sounds spontaneously. Whenever the patient is spoken			
to,	he f	fairly accurately repeats what was said to him:			
a		Broca's aphasia			
b		Wernicke's aphasia			
C		Transcortical sensory aphasia			
d		Transcortical motor aphasia			
u A	*	Mixed transcortical anhasia			
		Wixed transcortical application			
A	57-y	where one working with a mistory of type II diabetes mentitus and atrial infinition presents to the emergency			
roc	om v	with right body weakness and sturred speech. The onset was sudden while she was brushing her teeth Th			
age	b, a	nd sne was brought immediately to the emergency room. Sne has no complaints of word-finding			
dif	ficu.	Ities, no dysestnesia, and no neadache. She is taking wartarin. Physical exam findings include blood			
pre	essui	re of 205/90 and irregiarly irregular heart beat. There is left side neglect with slurred speech. There is a			
corticospinal pattern of weakness of the right body, with the face and upper extremity worse than the lower					
extremity. Routine chemistries and cell counts are normal. Her INR is The patient has an MRI that is consistent					
with an acute stroke. The most common cause of stroke is:					
a	*	Atherosclerosis			
b		Fibromuscular dysplasia			
с		Mitral valve prolapse			
d		Arterial dissection			
e		Meningovascular inflammation			
Se	See question A pure sensory stroke is most likely with damage to the:				
-------------	---	--	--		
а		Internal capsule			
b	*	Thalamus			
с		Hippocampus			
d		Globus pallidus			
e		Pons			
Se	e qu	estion The dysphagia in this case is secondary to involvement of which of the following structures?			
а		Nucleus solitarius			
b		Nucleus and descending tract of CN V5			
С	*	Nucleus ambiguus			
d		Lateral spinothalamic tract			
e		Inferior cerebellar peduncle			
A	75-v	ear-old man with a history of recent memory impairment is admitted with headache, confusion, and a left			
ho	mon	vmous hemianopsia. He has recently had two episodes of brief unresponsiveness. There is no history of			
hv	nerte	ension Computed tomography (CT) scan shows a right occipital lobe hemorrhage with some			
sul	nara	chnoid extension of the blood. An MRI scan with gradient echo sequences reveals foci of hemosiderin in			
the	rig	t temporal and left frontal cortex. The likely cause of this patient's symptoms and signs is:			
a	/ 115	Gliomatosis cerebri			
h		Multi-infarct dementia			
c		Mycotic aneurysm			
d	*	Amyloid angionathy			
u A		Undiagnosed hypertension			
	0 ng	tient's HIV antigen test is positive, but he has no depression of his CD4 (helper) T lymphocyte count			
No	c pa	conduction studies reveal generalized slowing in the lags and EEG exhibits depressed voltage over the			
lof	t nai	ietal lobe. Cardiac catheterization suggests aortic valve disease, and his CSE is vanthochromic (vallow)			
Th	e pri	obable site of injury in the CNS is:			
3	*	An arterial wall			
a h		The ventricular endothelium			
C		The ventredual endothenum The nia arachnoid			
d		The dura mater			
u A		The perivenular space			
C Se		estion The focal weakness lasting for 24 h was most likely attributable to:			
3	c qu	Intracerebral hemorrhage			
a h		Subarachnoid hemorrhage			
0		Encenhalitis			
d	*	Todd's paralysis			
u	-	Huponetromia			
	20 1	Trypoliationia			
A	J9-y	becomes unremitting, and also complains of dull pain behind her right ave. When a red class is placed			
VIS	or h	becomes unremitting, and also complains of duri pair bennid her light eye. When a fed glass is placed			
0v		the red light opposed to how to be more to the left then the white light. Her right puril is more dilated			
the	n ngi	and respondent appears to her to be more to the left than the white light. Her fight pupil is more dilated are left pupil, and responde less brickly to a bright light directed at it than does the left pupil. Refere any			
fur	ui in thar	investigations can be performed, the woman develops the worst headache of her life and becomes			
otu	nor	Investigations can be performed, the woman develops the worst headache of her me and becomes			
Stu o ti	rang	femoral angiogram. This radiologic study is expected to reveal that the woman has:			
a i	ans	An arteriovanous malformation			
a h		An accipital estrocytome			
		A sphenoidal maningioma			
ט ג	$\left \right $	A sphenolual mennigionia			
u	*				
е т1-		A satural allturysill a of the logion reasonable for this women's symptoms and signs is must probably the			
10		Anterior communicating artery			
a 1.	*	Anterior communicating artery			
b	Ť	Posterior communicating artery			

с		Anterior cerebral artery
d		Middle cerebral artery
e		Posterior cerebral artery
73-	-vea	r-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and
slurred speech. On further questioning, he relates three brief episodes in the last month of sudden impairment of		
vis	ion	affecting the right eve. His examination now is normal. Which of the following would be the most
api	oron	priate next diagnostic test?
	101	Creatine phosphokinase (CPK)
b		Holter monitor
c		Visual evoked responses
d	*	Carotid artery Doppler ultrasound
e e		Conventional cerebral angiography
Δ	thor	conventional cerebral anglography
hif	ince	ough evaluation reveals that the patient has a 90% sectors of the right internal carona areny at the
9	uice	Warfarin
a h		Carotid artery angionlasty
0	*	Carotid and arteractomy
4		Extraoronial intracronial hypers
a		Extracramar-intracramar bypass
e T1		
In	e m	ost striking neurologic complication of von Economo s encephalitis (encephalitis lethargica), a type of
enc	cepr	alitis that occurred in epidemic proportions along with viral influenza between 1917 and 1928, was:
a		Blindness
b		Hearing loss
С		Paraplegia
d	*	Parkinsonism
e		Hemiparesis
A	35-y	year-old woman who has received a liver transplant develops meningeal signs and fever. Cerebrospinal
flu	id te	esting reveals a fungal infection. The most common cause of fungal meningitis is:
a		Aspergillus
b		Candida
С		Mucor
d	*	Cryptococcus
e		Rhizopus
Α	17-y	year-old right-handed boy has had infectious meningitis 8 times over the past 3 years. He has otherwise
bee	en g	enerally healthy and developed normally. Recurrent meningitis often develops in persons with:
a		Otitis media
b		Epilepsy
с		Multiple sclerosis
d	*	Cerebrospinal fluid (CSF) leaks
e		Whipple's disease
Α	31-y	year-old homosexual man has had headache, sleepiness, and poor balance that have worsened over the
pas	st w	eek. The patient is known to be HIV-seropositive, but has done well in the past and has not seen a doctor
in	ovei	1 year. On examination, his responses are slow and he has some difficulty sustaining attention. He has a
rig	ht h	emiparesis with increased reflexes on the right. Routine cell counts and chemistries are normal. Of the
fol	low	ing, which is the most appropriate thing to do next?
а	*	Get a head CT with contrast
b		Get a noncontrast head CT
с		Perform a lumbar puncture
d		Start antiretroviral therapy
e		Start intravenous heparin
See	e m	estion A CT scan reveals several rim-enhancing lesions with minimal mass effect. An appropriate
inv	- yu vesti	gation at this point would be to:
2	-511	Get a cerebral angiogram
u	1	

b		Order a ventricular cerebrospinal fluid (CSF) aspiration
с	*	Perform a lumbar puncture and include cerebrospinal fluid for Epstein-Barr virus (EBV) PCR in tests
		ordered
d		Stop all antiretroviral therapy
e		Treat with intravenous acyclovir
A	72-у	ear-old right-handed woman has 2 days of headache and fever, followed by worsening confusion. She is
tak	en t	o the hospital after having a generalized seizure. A head CT is consistent with left temporal hemorrhage
and	l sw	velling. Localization of an encephalitis to the medial temporal or orbital frontal regions of the brain is
mo	st c	onsistent with:
a		Treponema pallidum
b		Varicella zoster virus
с	*	Herpes simplex virus
d		Cryptococcus neoformans
e		Toxoplasma gondii
See	e qu	estion Neuroimaging of the brain before attempting a lumbar puncture is advisable in cases of acute
enc	ceph	alitis because:
a		The diagnosis may be evident on the basis of magnetic resonance imaging (MRI) alone
b	*	Massive edema in the temporal lobe may make herniation imminent
с		The computed tomography (CT) picture may determine whether a brain biopsy should be obtained
d		It may establish what pathology is responsible
e		It may establish what pathology is responsible
See	e qu	estion CSF testing establishes this case as being the commonest form of acute encephalitis. The CSF
cha	inge	as late in the course of this disease typically include:
а	*	An increased number of lymphocytes
b		A glucose content of less than two-thirds the serum level
с		A protein content of less than 45 mg/dL
d		A normal opening pressure
e		A predominance of polymorphonuclear white blood cells
A	13-y	ear-old boy is brought into the emergency room lethargic with a stiff neck and fever. Despite aggressive
the	rapy	y, the child dies. Postmortem evaluation reveals that the child had primary amebic
me	ning	goencephalitis. This condition is usually acquired through:
а	*	Freshwater swimming
b		Eating contaminated meat
с		Eating calves' brains
d		Anal intercourse
e		Animal bites
See	e qu	estion Both HIV and cytomegalovirus infections in the brain characteristically produce:
a		Senile plaques
b		Intraneuronal amyloid
с		Intranuclear inclusions
d		Intracytoplasmic inclusions
e	*	Microglial nodules
Fol	llow	ing several days of low-grade fever and mild neck and head pain, a 10-year-old boy develops bilateral
fac	e dr	pooping and difficulty fully closing his eyes. Serum is positive for Borrelia burgdorferi IgM. CSF PCR is
als	o pc	ositive for this organism's DNA. The medication most appropriate in patients with CNS involvement by
В.	burg	gdorferi is:
a	Ī	Streptomycin
b	*	Ceftriaxone
с		Gentamicin
d		Isoniazid
e		Rifampin
Th	e mo	ost common complaint in patients with brain abscess is:
a		Nausea and vomiting

b		Ataxia
с	*	Headache
d		Neck stiffness
e		Seizures
Α	55-v	year-old woman has a progressive dementia over the past year. Over the last 3 months she has also
dev	velo	ped dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's
svr	nptc	oms are being caused by which of the following?
a	-r··	A response to penicillin treatment
b		An autoimmune reaction
C		An acute meninggencephalitis
d	*	Δ chronic meningoencenhalitis
u e		Δ chronic thomben centralities
Δ	13_1	rear-old boy is brought into the emergency room lethargic with a stiff neck and fever. Despite aggressive
the	ranı	w the child dies Postmortem evaluation reveals that the child had primary amelic
mo	ning	y, the clinic dies. Tostmonent evaluation reveals that the clinic had primary americ
0	*	Ereshwater swimming
a h		Facting conteminated most
0		Eating containinated meat
С - Д		
a		Anal intercourse
e	10	Animal bites
A	10-y	year-old girl is referred to a physician because of rapidly deteriorating school performance. Over the
cou	irse	of a few weeks, the child has lost interest in her schoolwork, appeared apathetic at home, and had
fre	quei	nt temper tantrums with little provocation. A psychiatric evaluation reveals that, in addition to emotional
lab	111ty	, the child has substantial intellectual deficits that appear to be new. Within I month of this evaluation,
the	chi	ild has a generalized tonic-clonic seizure. A neurologist examining the child discovers chorioretinitis,
ata	x1a,	hyperactive reflexes, and bilateral Babinski signs. Her EEG exhibits periodic bursts of high-voltage slow
wa	ves,	followed by recurrent low-voltage stretches (burst suppression pattern). The CSF is remarkable for an
inc	reas	se in the gamma globulin fraction. The child becomes increasingly lethargic and obtunded over the
ens	suing	g 2 months. She remains in a coma for several months before dying. (select 1 condition):
a		Subacute HIV encephalomyelitis (AIDS encephalopathy)
b	Ŷ	Subacute sclerosing panencephalitis (SSPE)
c		Progressive multifocal leukoencephalopathy (PML)
d		Rabies encephalitis
e		Bartonella henselae encephalitis
Α.	37-у	year-old female Navy officer presents with 3 days of confusion and seizures. Her colleagues report that
she	ha:	s been acting strangely for 3 days. This is followed by generalized status epilepticus. The woman has
pre	viou	usly been well. She has traveled to the Caribbean several times annually, and she has a new pet cat.
Ge	nera	al exam discloses epitrochlear lymphadenopathy. Neurologic exam shows the woman to be in status
epi	lept	icus. Cerebrospinal fluid is negative; MRI shows increased signal in the pulvinar bilaterally. (select 1
cor	nditi	on):
a		Subacute HIV encephalomyelitis (AIDS encephalopathy)
b	*	Bartonella henselae encephalitis
с		Progressive multifocal leukoencephalopathy (PML)
d		Rabies encephalitis.
e		Parkinsonism
Th	e m	ost striking neurologic complication of von Economo's encephalitis (encephalitis lethargica), a type of
enc	eph	alitis that occurred in epidemic proportions along with viral influenza between 1917 and 1928, was:
a		Blindness
b		Hearing loss
c		Paraplegia
d	*	Parkinsonism
e		Incontinence
A	35-1	year-old woman who has received a liver transplant develops meningeal signs and fever. Cerebrospinal
	J	

flu	fluid testing reveals a fungal infection. The most common cause of fungal meningitis is:		
а		Aspergillus	
b		Candida	
с		Mucor	
d	*	Cryptococcus	
e		Toxoplasma gondii	
Α	17-у	year-old right-handed boy has had infectious meningitis 8 times over the past 3 years. He has otherwise	
bee	en g	enerally healthy and developed normally. Recurrent meningitis often develops in persons with:	
а		Otitis media	
b		Epilepsy	
c		Multiple sclerosis	
d		Whipple's disease	
e	*	Cerebrospinal fluid (CSF) leaks	
Th	e mo	ost common site for abscess formation in the brain is the:	
а		Putamen	
b		Thalamus	
с		Head of the caudate	
d	*	Gray-white junction	
e		Subthalamus	
An	nong	g below mentioned types of meningitis choose the one that causes serous changes of the cerebrospinal	
liq	uid:		
а	*	Viral	
b		Pneumococcal	
с		Streptococcal	
d		Staphylococcal	
e		Meningococcal	
In	the o	case of tuberculous meningitis, the cerebrospinal liquid becomes:	
а		Festering	
b		Turbid	
с		Normal pressure	
d		Bloody	
e	*	Opalescent	
Th	e pr	esence of this syndrome is decisive in diagnosing meningitis:	
a		Meningial syndrome	
b		The presence of focal neurological symptoms	
с		The presence of generally-cerebral symptoms	
d	*	The syndrome of inflammatory changes in the liquor	
e		The syndrome of infectious disease	
А	31-у	year-old homosexual man has had headache, sleepiness, and poor balance that have worsened over the	
pas	st w	eek. The patient is known to be HIV-seropositive, but has done well in the past and has not seen a doctor	
in	over	1 year. On examination, his responses are slow and he has some difficulty sustaining attention. He has a	
rig	ht h	emiparesis with increased reflexes on the right. Routine cell counts and chemistries are normal. Of the	
tol	low	ing, which is the most appropriate thing to do next?	
a	*	Get a head CT with contrast	
b		Get a noncontrast head CT	
c		Perform a lumbar puncture	
d		Start antiretroviral therapy	
e		Start intravenous heparin	
	e qu	lestion A C1 scan reveals several rim-enhancing lesions with minimal mass effect. An appropriate	
1NV	vest1	gation at this point would be to:	
a 1		Get a cerebral anglogram	
D		Order a ventricular cerebrospinal fluid (CSF) aspiration	

c	*	Perform a lumbar puncture and include cerebrospinal fluid for Epstein-Barr virus (EBV) PCR in tests ordered
d		Stop all antiretroviral therapy
e		Treat with intravenous acyclovir
Δ	72-x	rear-old right-handed woman has 2 days of headache and fever followed by worsening confusion. She is
tak	'	o the hospital after having a generalized seizure. A head CT is consistent with left temporal hemorrhage
and	d su	velling. Localization of an encenhalitis to the medial temporal or orbital frontal regions of the brain is
mo	u on Net c	onsistent with
3		Treponema pallidum
h		Varicella zoster virus
C	*	Hernes simplex virus
d		Cryptococcus neoformans
e		Toxonlasma gondii
C Set		rection Neuroimaging of the brain before attempting a lumbar puncture is advisable in cases of acute
enc	e qu Senh	alitis because:
2	Lepi	The diagnosis may be evident on the basis of magnetic resonance imaging (MPI) alone
a b	*	Massive adams in the temporal lobe may make hernistion imminant
0	·	The computed tomography (CT) picture may determine whether a brain bioney should be obtained
4		It may astablish what pathology is responsible.
u		It may establish what pathology is responsible
e So		It may establish what pathology is responsible
Sec	e qu	the source of this disease turicelly include:
Cha	ange	An increased number of lumphosytes
a h		An increased number of lymphocytes
D		A gratein content of loss than 45 mg/dL
C J		A protein content of less than 45 mg/dL
a		A normal opening pressure
e		A predominance of polymorphonuclear white blood cells
Ty	ріса	I clinical forms of acute period of lethargic encephalitis:
a 1		Meningeal
b		Bulbar
C 1		Oculo- lethargic
d	*	Polyneuritic
e	*	Polymyelitic
T10	ck th	he syndrome which is typical for chronical stage of lethargic encephalitis:
a		Argyll Robertson syndrom
b		Parinaud's Syndrome
с		Bernard-Horner syndrome
d		Meningeal
e	*	Parkinsonism
Ho	w tł	ne pyogenic infections reach the intracranial structures?
a		Hematogenous spread
b		Extension from cranial structures
с		latrogenic, in the course of surgery
d		Nosocomial, i.e., acquired in-hospital
e	*	All mentioned
In	the a	adult the most common pathogenic organisms that causes meningitis are:
a		Pneumococcus (Streptococcus pneumoniae)
b		Meningococcus (Neisseria meningitides)
c		Haemophilus influenzae
d		Listeria monocytogenes
e	*	All mentioned
Th	e m	ost common pathogenic organisms that causes meningitis in the neonate are:

a	*	Escherichia coli and group B streptococcus	
b		Meningococcus (Neisseria meningitides)	
с		Haemophilus influenzae	
d		Listeria monocytogenes	
e		All mentioned	
Th	e ea	rly clinical effects of acute bacterial meningitis are:	
а		Fever and severe headache	
b		Stiffness of the neck	
c		Generalized convulsions	
d		Disorder of consciousness	
e	*	All mentioned	
Br	udzi	nski sjon is:	
21	*	Flexion at the hip and knee in response to forward flexion of the neck	
h		Inability to completely extend the legs	
C		Spastic paraparesis with sensory loss in the lower segments of the body	
d		Impairment of consciousness	
u		All montioned	
	rnio		
Re 0	mg	Sign. Elevien at the hin and knee in regnance to forward flavion of the neek	
a h	*	Inskility to completely extend the loss	
D	*	Spectic percentages with concern loss in the lower compared of the hody.	
C		Spastic paraparesis with sensory loss in the lower segments of the body	
a		All wentiened	
e	1 1	All menuoned	
AL	l hoi	usehold contacts of patients with meningococcal meningitis should be protected with antibiotic treatment:	
a	*	Ciprofloxacin	
b		Gentamicin	
С		Meropenem	
d		Vancomycin	
e		Azithromycin	
A	35-у	year-old woman who has received a liver transplant develops meningeal signs and fever. Cerebrospinal	
flu	id te	esting reveals a fungal infection. The most common cause of fungal meningitis is:	
а		Aspergillus	
b		Candida	
с		Mucor	
d	*	Cryptococcus	
e		Toxoplasma gondii	
Α	17-y	year-old right-handed boy has had infectious meningitis 8 times over the past 3 years. He has otherwise	
bee	en g	enerally healthy and developed normally. Recurrent meningitis often develops in persons with:	
a		Otitis media	
b		Epilepsy	
с		Multiple sclerosis	
d		Whipple's disease	
e	*	Cerebrospinal fluid (CSF) leaks	
Th	e m	ost common site for abscess formation in the brain is the:	
a		Putamen	
b		Thalamus	
с		Head of the caudate	
d	*	Gray-white junction	
e		Subthalamus	
Th	The most striking neurologic complication of von Economo's encephalitis (encephalitis lethargica) a type of		
enc	encephalitis that occurred in epidemic proportions along with viral influenza between 1917 and 1928, was:		
a		Blindness	
L			

b		Hearing loss
с		Paraplegia
d	*	Parkinsonism
e		Hemiparesis
All	ho	usehold contacts of patients with meningococcal meningitis should be protected with antibiotic treatment:
а	*	Ciprofloxacin
h		Gentamicin
C		Meropenem
d		Vancomycin
u A		Azithromycin
	17 .	Azimoniyem
hor	17-y	enerally healthy and developed normally. Recurrent maningitis often develops in persons with:
000	JII g	Otitis media
a b		Epilopsy
0		Multiple selerosis
С 1	*	Concharge sciences in a file in a COSE basic
a	*	Cerebrospinal fluid (CSF) leaks
e		whipple's disease
A	31-y	ear-old homosexual man has had headache, sleepiness, and poor balance that have worsened over the
pas	st w	eek. The patient is known to be HIV-seropositive, but has done well in the past and has not seen a doctor
1n (ovei	· I year. On examination, his responses are slow and he has some difficulty sustaining attention. He has a
rig	ht h	emiparesis with increased reflexes on the right. Routine cell counts and chemistries are normal. Of the
fol	IOW:	ing, which is the most appropriate thing to do next?
a	*	Get a head CT with contrast
b		Get a noncontrast head CT
с		Perform a lumbar puncture
d		Start antiretroviral therapy
e		Start intravenous heparin
See	e qu	sestion A CT scan reveals several rim-enhancing lesions with minimal mass effect. An appropriate
inv	vesti	gation at this point would be to:
a		Get a cerebral angiogram
b		Order a ventricular cerebrospinal fluid (CSF) aspiration
с	*	Perform a lumbar puncture and include cerebrospinal fluid for Epstein-Barr virus (EBV) PCR in tests
		ordered
d		Stop all antiretroviral therapy
e		Treat with intravenous acyclovir
Ke	rnig	sign:
a		Flexion at the hip and knee in response to forward flexion of the neck
b	*	Inability to completely extend the legs
с		Spastic paraparesis with sensory loss in the lower segments of the body
d		Impairment of consciousness,
е		All mentioned
Th	e ea	rly clinical effects of acute bacterial meningitis are:
а		Fever and severe headache
b		Stiffness of the neck
c		Generalized convulsions
d		Disorder of consciousness
e	*	All mentioned
In	the ·	adult the most common pathogenic organisms that causes meningitis are:
ш о		Pneumococcus (Streptococcus nneumoniae)
a h		Meningococcus (Neisseria meningitides)
		Viennigococcus (iveissena niennigiuues) Usomonhilus influenza
С 1		
a		Listena monocytogenes

e '	*	All mentioned
A 13	3-v	ear-old boy is brought into the emergency room lethargic with a stiff neck and fever. Despite aggressive
thera	ý J ans	the child dies Postmortem evaluation reveals that the child had primary amebic
meni	inc	yoencenhalitis This condition is usually acquired through:
	*	Freshwater swimming
u h		Fating contaminated meat
C		Eating college' brains
4		Anal intercourse
u		Aniar Intercourse
e A 12	,	Amma ones
AIS	9-у	ear-old boy is brought into the emergency room lethargic with a still neck and lever. Despite aggressive
	apy . TI	<i>y</i> , the child dies. Postholtem evaluation reveals that the child had primary ametic meningoencephantis.
Dom		Serile risewas
a 1		Senile plaques
b		Intraneuronal amyloid
С		Intranuclear inclusions
d		Intracytoplasmic inclusions
e '	*	Microglial nodules
How	' th	ne pyogenic infections reach the intracranial structures?
а		Hematogenous spread
b		Extension from cranial structures
с		Iatrogenic, in the course of surgery
d		Nosocomial, i.e., acquired in-hospital
e '	*	All mentioned
In th	e a	adult the most common pathogenic organisms that causes meningitis are:
а		Pneumococcus (Streptococcus pneumoniae)
b		Meningococcus (Neisseria meningitides)
с		Haemophilus influenzae
d		Listeria monocytogenes
e '	*	All mentioned
A 17	7-v	rear-old right-handed boy has had infectious meningitis 8 times over the past 3 years. He has otherwise
been	g	enerally healthy and developed normally. Recurrent meningitis often develops in persons with:
а	0	Otitis media
b		Epilepsy
c		Multiple sclerosis
d ³	*	Cerebrospinal fluid (CSF) leaks
e		Whinnle's disease
Brud	lzi	nski sign is:
	*	Elevion at the hip and knee in response to forward flexion of the neck
a b		Inability to completely extend the lags
0		Spectra perspersie with concern loss in the lower segments of the body
		Impoirment of consciousness
u	-	All montioned
e The		All menuoned
Ine	mo	Dist common complaint in patients with brain abscess is:
a		Nausea and vomiting
b	*	Ataxia
с [`]	不	Headache
d	$ \downarrow$	Neck stiffness
e		Seizures
A 72	2-y	ear-old right-handed woman has 2 days of headache and fever, followed by worsening confusion. She is
taken to the hospital after having a generalized seizure. A head C1 is consistent with left temporal hemorrhage		
and	SW	velling.Localization of an encephalitis to the medial temporal or orbital frontal regions of the brain is
most	t c	onsistent with:

a		Treponema pallidum	
b		Varicella zoster virus	
с	*	Herpes simplex virus	
d		Cryptococcus neoformans	
e		Toxoplasma gondii	
Se	e qu	testion Neuroimaging of the brain before attempting a lumbar puncture is advisable in cases of acute	
ene	ceph	alitis because:	
а		The diagnosis may be evident on the basis of magnetic resonance imaging (MRI) alone	
b	*	Massive edema in the temporal lobe may make herniation imminent	
с		The computed tomography (CT) picture may determine whether a brain biopsy should be obtained	
d		It may establish what pathology is responsible	
e		It may establish what pathology is responsible	
Se	e au	estion CSF testing establishes this case as being the commonest form of acute encephalitis. The CSF	
cha	ange	es late in the course of this disease typically include:	
a	*	An increased number of lymphocytes	
h		A glucose content of less than two-thirds the serum level	
c		A protein content of less than 45 mg/dL	
d		A normal opening pressure	
e		A predominance of polymorphonuclear white blood cells	
Th	e cr	rapial neuropathy most commonly found with I yme disease is that associated with damage to cranial	
nei		and heuropauty most commonly found with Lynic disease isthat associated with damage to cramar	
3	v.c.	Ш	
a h		V	
0	*		
d			
u			
e	12.	All	
A	13-y	the shild diss. Destruction availation reveals that the shild had primary amphic maning concernabilities	
De De	th L	y, the clinic dies. Positionelin evaluation reveals that the clinic had primary ametic mennigoencephantis.	
D0		Somile plaques	
a h		Intronouronal amyloid	
0			
C d			
a	*	Intracytopiasmic inclusions	
e	^ 11	Microglial nodules	
Fo	llow	ing several days of low-grade fever and mild neck and head pain, a 10-year-old boy develops bilateral	
fac	e dr	cooping and difficulty fully closing his eyes. Serum is positive for Borrelia burgdorferi IgM. CSF PCR is	
als	o pc	ositive for this organism's DNA. The medication most appropriate in patients with CNS involvement by	
В.	burg	gdorferi is:	
a		Streptomycin	
b	*	Centraxone	
C		Gentamicin	
d		Isoniazid	
e		Rifampin	
Th	e m	ost common complaint in patients with brain abscess is:	
a		Nausea and vomiting	
b		Ataxia	
С	*	Headache	
d		Neck stiffness	
e		Seizures	
Α	55- <u>y</u>	year-old woman has a progressive dementia over the past year. Over the last 3 months she has also	
de	developed dysarthria, myoclonus, intention tremor, and hyperreflexia. CSF VDRL is positive. This patient's		
syı	npto	oms are being caused by which of the following?	

a		A response to penicillin treatment
b		An autoimmune reaction
с		An acute meningoencephalitis
d	*	A chronic meningoencephalitis
e		A chronic rhombencephalitis
Α	13-v	ear-old boy is brought into the emergency room lethargic with a stiff neck and fever. Despite aggressive
the	rapy	y, the child dies. Postmortem evaluation reveals that the child had primary amebic
me	ning	goencephalitis. This condition is usually acquired through:
а	*	Freshwater swimming
b		Eating contaminated meat
C		Eating calves' brains
d		Anal intercourse
e		Animal hites
Δ	10-3	ver_old girl is referred to a physician because of rapidly deteriorating school performance. Over the
	10-y 1160	of a few weeks the child has lost interest in her schoolwork appeared apathetic at home and had
fre	anse	of a few weeks, the efficient has lost interest in her school work, appeared aparticle at none, and had
lab	ility	the child has substantial intellectual deficits that appear to be new. Within 1 month of this evaluation
the	unty chi	Id has a generalized tonic clonic seizure. A neurologist examining the child discovers chorioretinitis
ata	via	huperactive reflexes, and bilateral Babinski signs. Her EEG exhibits periodic bursts of high voltage slow
	XIA,	followed by recurrent low voltage stratebas (burst suppression pattern). The CSE is remarkable for an
ing	ves,	a in the gamma globulin fraction. The shild becomes increasingly lathergic and obtunded over the
one	icas	a months. She remains in a come for several months before duing (select 1 condition):
ens	sum	Subsoute HIV encompalemyolitis (AIDS encompalemethy)
a h	*	Subacute filly encephalomyenus (AIDS encephalopauly)
0		Dragragging multifagel lauka an earlielenethy (DML)
C		Progressive multifocal leukoencephalopathy (PML)
d		Rables encephalitis
e		Bartonella nenselae encephalitis
A	37-y	ear-old female Navy officer presents with 3 days of confusion and seizures. Her colleagues report that
she	has •	s been acting strangely for 3 days. This is followed by generalized status epilepticus. The woman has
pre	vioi	isly been well. She has traveled to the Caribbean several times annually, and she has a new pet cat.
Ge	nera	il exam discloses epitrochiear lymphadenopathy. Neurologic exam shows the woman to be in status
epi	lept	icus. Cerebrospinal fluid is negative; MRI snows increased signal in the pulvinar bilaterally. (select 1
COI	1d1t1	
a		Subacute HIV encephalomyelitis (AIDS encephalopathy)
b	*	Bartonella henselae encephalitis
c		Progressive multifocal leukoencephalopathy (PML)
d		Rabies encephalitis
e		Parkinsonism
Th	e m	ost striking neurologic complication of von Economo's encephalitis (encephalitis lethargica), a type of
enc	ceph	alitis that occurred in epidemic proportions along with viral influenza between 1917 and 1928, was:
a		Blindness
b		Hearing loss
с		Paraplegia
d	*	Parkinsonism
e		Incontinence
A	35-y	ear-old woman who has received a liver transplant develops meningeal signs and fever. Cerebrospinal
flu	id te	esting reveals a fungal infection. The most common cause of fungal meningitis is:
a		Aspergillus
b		Candida
с		Mucor
d	*	Cryptococcus
e		Toxoplasma gondii
A	17-v	ear-old right-handed boy has had infectious meningitis 8 times over the past 3 years. He has otherwise
L	- · J	

be	en g	enerally healthy and developed normally. Recurrent meningitis often develops in persons with:
а		Otitis media
b		Epilepsy
С		Multiple sclerosis
d		Whipple's disease
e	*	Cerebrospinal fluid (CSF) leaks
Th	e m	ost common site for abscess formation in the brain is the:
a		Putamen
b		Thalamus
с		Head of the caudate
d	*	Gray-white junction
e		Subthalamus
Ar	nong	g below mentioned types of meningitis choose the one that causes serous changes of the cerebrospinal
liq	uid:	
a	*	Viral
b		Pneumococcal
с		Streptococcal
d		Staphylococcal
e		Meningococcal
In	the o	case of tuberculous meningitis, the cerebrospinal liquid becomes:
a		Festering
b		Turbid
с		Normal pressure
d		Bloody
e	*	Opalescent
Th	e pr	esence of this syndrome is decisive in diagnosing meningitis:
a		Meningial syndrome
b		The presence of focal neurological symptoms
с		The presence of generally-cerebral symptoms
d	*	The syndrome of inflammatory changes in the liquor
e		The syndrome of infectious disease
Α	31-y	year-old homosexual man has had headache, sleepiness, and poor balance that have worsened over the
pa	st w	eek. The patient is known to be HIV-seropositive, but has done well in the past and has not seen a doctor
in	over	1 year. On examination, his responses are slow and he has some difficulty sustaining attention. He has a
rig	,ht h	emiparesis with increased reflexes on the right. Routine cell counts and chemistries are normal. Of the
fol	low	ing, which is the most appropriate thing to do next?
а	*	Get a head CT with contrast
b		Get a noncontrast head CT
с		Perform a lumbar puncture
d		Start antiretroviral therapy
e		Start intravenous heparin
Se	e qu	nestion A CT scan reveals several rim-enhancing lesions with minimal mass effect. An appropriate
inv	vesti	gation at this point would be to:
a		Get a cerebral angiogram
b		Order a ventricular cerebrospinal fluid (CSF) aspiration
с	*	Perform a lumbar puncture and include cerebrospinal fluid for Epstein-Barr virus (EBV) PCR in tests
		ordered
d		Stop all antiretroviral therapy
e		Treat with intravenous acyclovir
A	72-у	vear-old right-handed woman has 2 days of headache and fever, followed by worsening confusion. She is
tak	ken t	o the hospital after having a generalized seizure. A head CT is consistent with left temporal hemorrhage
an	d sw	velling Localization of an encephalitis to the medial temporal or orbital frontal regions of the brain is

mo	st c	onsistent with:
a		Treponema pallidum
b		Varicella zoster virus
с	*	Herpes simplex virus
d		Cryptococcus neoformans
e		Toxoplasma gondii
See	e qu	testion Neuroimaging of the brain before attempting a lumbar puncture is advisable in cases of acute
end	ceph	alitis because:
а		The diagnosis may be evident on the basis of magnetic resonance imaging (MRI) alone
b	*	Massive edema in the temporal lobe may make herniation imminent
с		The computed tomography (CT) picture may determine whether a brain biopsy should be obtained
d		It may establish what pathology is responsible
e		It may establish what pathology is responsible
See	e qu	testion CSF testing establishes this case as being the commonest form of acute encephalitis. The CSF
cha	inge	es late in the course of this disease typically include:
а	*	An increased number of lymphocytes
b		A glucose content of less than two-thirds the serum level
c		A protein content of less than 45 mg/dL
d		A normal opening pressure
e		A predominance of polymorphonuclear white blood cells
Tv	pica	I clinical forms of acute period of lethargic encephalitis:
<u>-</u> ,		Meningeal
b		Bulbar
c		Oculo- lethargic
d		Polyneuritic
e	*	Polymyelitic
Tic	k th	he syndrome which is typical for chronical stage of lethargic encephalitis:
a		Argyll Robertson syndrom
b		Parinaud's Syndrome4
c		Bernard-Horner syndrome
d		Meningeal
e	*	Parkinsonism
Ho	w tł	ne progenic infections reach the intracranial structures?
2110		Hematogenous spread
h		Extension from cranial structures
c		Latrogenic in the course of surgery
d		Nosocomial i e acquired in-hospital
e	*	All mentioned
In	the a	adult the most common nathogenic organisms that causes meningitis are:
a		Pneumococcus (Streptococcus pneumoniae)
h		Meningococcus (Neisseria meningitides)
C	$\left \right $	Haemonhilus influenzae
d		
u o	*	All mentioned
C Th	o m	An included
2111	*	Escherichia coli and group B streptococcus
a h	·	Maningagagagus (Naissaria maningitidas)
0		Heemophilus influenzee
2		
u		All montioned
e TL		All incluoited
11	e ea	Try chinical effects of acute bacterial meninghts are:
а		rever and severe neadacne

b		Stiffness of the neck
с		Generalized convulsions
d		Disorder of consciousness
e	*	All mentioned
Brı	ıdzi	nski sign is:
а	*	Flexion at the hip and knee in response to forward flexion of the neck
b		Inability to completely extend the legs
с		Spastic paraparesis with sensory loss in the lower segments of the body
d		Impairment of consciousness
e		All mentioned
Ke	rnig	sign:
а		Flexion at the hip and knee in response to forward flexion of the neck
b	*	Inability to completely extend the legs
с		Spastic paraparesis with sensory loss in the lower segments of the body
d		Impairment of consciousness
e		All mentioned
All	ho	usehold contacts of patients with meningococcal meningitis should be protected with antibiotic treatment:
a	*	Ciprofloxacin
b		Gentamicin
c		Meropenem
d		Vancomycin
e		Azithromycin
	35-1	vear-old woman who has received a liver transplant develops meningeal signs and fever. Cerebrospinal
flui	id te	esting reveals a fungal infection. The most common cause of fungal meningitis is:
a		Aspergillus
h		Candida
C		Mucor
d	*	Cryptococcus
u A		Toxonlasma gondii
Δ	17_x	rear old right handed how has had infectious maningitis 8 times over the past 3 years. He has otherwise
hee	1/-y >n σ	enerally healthy and developed normally. Recurrent meningitis often develops in persons with:
3		Otitis media
a b		Enilensy
0		Multiple sclerosis
d		Whimple's disease
u	*	Combroaning fluid (CSE) logica
C Th	0 m	celebrospillar fluid (CSF) leaks
110	e m	Dutemon
a h		Thelemus
0		Head of the condete
4	*	Creat white innetion
a	•	Subtedarmus
e Tl		
In		ost sufking neurologic complication of von Economo's encephalitis (encephalitis lethargica), a type of
enc	epr	Dlindness
a 1-		
D		Percentagio
C	4	Parapiegia
d	*	Parkinsonism
e		Hemiparesis
All	ho	usehold contacts of patients with meningococcal meningitis should be protected with antibiotic treatment:
a	*	Ciprofloxacin
b		Gentamicin

с		Meropenem	
d		Vancomycin	
e		Azithromycin	
Α	17-y	ear-old right-handed boy has had infectious meningitis 8 times over the past 3 years. He has otherwise	
bee	en g	enerally healthy and developed normally. Recurrent meningitis often develops in persons with:	
а		Otitis media	
b		Epilepsy	
с		Multiple sclerosis	
d	*	Cerebrospinal fluid (CSF) leaks	
e		Whipple's disease	
A	31-3	ear-old homosexual man has had headache sleepiness and poor balance that have worsened over the	
nas	st w	eek. The patient is known to be HIV-seropositive, but has done well in the past and has not seen a doctor	
in	over	1 year. On examination, his responses are slow and he has some difficulty sustaining attention. He has a	
rig	ht h	emiparesis with increased reflexes on the right. Routine cell counts and chemistries are normal. Of the	
fol	low	ing which is the most appropriate thing to do next?	
a	*	Get a head CT with contrast	
h		Get a noncontrast head CT	
c		Perform a lumbar nuncture	
d		Start antiretroviral therapy	
u A		Start intravenous henerin	
Sec		estion A CT scan reveals several rim-enhancing lesions with minimal mass effect. An appropriate	
inv	e yu Posti	action at this point would be to:	
- miv	CSU	Get a cerebral angiogram	
a h		Order a ventricular cerebrospinal fluid (CSE) aspiration	
0	*	Perform a lumber puncture and include corebrospinal fluid for Enstein Parr virus (EPV) DCP in tests	
C		ordered	
d		Stop all antiratroviral therapy	
u		Treat with intravanous acyclovir	
C Ko	rnia		
Ke 0	Inng	Sign. Elevien at the hin and knee in response to ferward flavion of the neek	
a h	*	Inability to completely extend the lass	
0		Spectic persperses with sensory loss in the lower segments of the body	
С 4		Spasic paraparesis with sensory loss in the lower segments of the body	
a		All mentioned	
e Th		An menuoned	
In	e ea	rly clinical effects of acute bacterial meningitis are:	
a 1		Fever and severe headache	
b		Stiffness of the neck	
C	$\left \right $	Generalized convulsions	
d	ىلە	Disorder of consciousness	
e	*	All mentioned	
In	the a	adult the most common pathogenic organisms that causes meningitis are:	
a		Pneumococcus (Streptococcus pneumonia)	
b		Meningococcus (Neisseria meningitides)	
С		Haemophilus influenzae	
d		Listeria monocytogenes	
e	*	All mentioned	
A	A 13-year-old boy is brought into the emergency room lethargic with a stiff neck and fever. Despite aggressive		
therapy, the child dies. Postmortem evaluation reveals that the child had primary amebic			
me	ning	goencephalitis. This condition is usually acquired through:	
a	*	Freshwater swimming	
b		Eating contaminated meat	
c		Eating calves' brains	

d		Anal intercourse
e		Animal bites
Α	13-y	rear-old boy is brought into the emergency room lethargic with a stiff neck and fever. Despite aggressive
the	rap	y, the child dies. Postmortem evaluation reveals that the child had primary amebic meningoencephalitis.
Bo	th H	IIV and cytomegalovirus infections in the brain characteristically produce:
а		Senile plaques
b		Intraneuronal amyloid
c		Intranuclear inclusions
d		Intracytoplasmic inclusions
e	*	Microglial nodules
So	mate	oneurology can be sectioned into:
3	mau	Cardioneurology
u h		Stomatoneurology
0		Visceroneurology
4		Visceroneurology
u	*	All mentioned
e	. 11	
Ca	raio	neurology is sciense studying:
a 1	Ŷ	Changes in the nervous system due to cardiovascular diseases
b		Comorbid changes in the nervous system due to the maxillofacial diseases
С		Comorbid changes in the nervous system due to the dysfunction of visceral organs
d		Diseases of bones & joints
e		All mentioned
Sto	oma	toneurology is sciense studying:
a		Changes in the nervous system due to cardiovascular diseases
b	*	Comorbid changes in the nervous system due to the maxillofacial diseases
с		Comorbid changes in the nervous system due to the dysfunction of visceral organs
d		Diseases of bones & joints
e		All mentioned
Th	e so	omatoneuroortopedic syndromes include - viscero-vertebral and/or vertebro-visceral symptoms. When
col	llect	ing patients anamnesis special attention should be paid to:
a		The presence of factors contributing in the development of the disease
b		Factors causing exacerbations
с		Symptoms that preceded the aggravation of the disease
d		Past illnesses, injuries and surgeries
e	*	All mentioned
It i	s be	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and
the	e sev	verity of vertebral lesion. Localization of viscera-cutaneous projections of the heart:
a	*	Region of Th3-Th4 on left
h		Region of The Th on left
c		Region of Th2-Th3 on right
d		Region of Th2-Th2 on right
u A		Region of Th1-Th2 on left
	coli	region of viscore, outencous projections of the smaller ourseture of the pylorus:
	Call	Passion of Th2
a h		Design of Th4
U C	*	Negloii 01 1114
С -1	-,-	Region of The
a		
e		Kegion of 1h/
Lo	caliz	zation of viscera-cutaneous projections of the smaller curvature of the fundus of kidneys:
a	*	Region of Th10-Th12
b		Region of Th4-Th5
С		Region of Th5-Th6

d	Region of Th6-Th7		
e	Region of Th6-Th7		
A 67-	A 67-year-old woman with a history of type II diabetes mellitus and atrial fibrillation presents to the emergency		
room	with right body weakness and slurred speech. The onset was sudden while she was brushing her teeth 1 h		
ago, a	and she was brought immediately to the emergency room. She has no complaints of word-finding		
difficu	ilties, no dysesthesia, and no headache. She is taking warfarin. Physical exam findings include blood		
pressu	re of 205/90 and irregularly irregular heart beat. There is left side neglect with slurred speech. There is a		
cortico	ospinal pattern of weakness of the right body, with the face and upper extremity worse than the lower		
extren	nity. Routine chemistries and cell counts are normal. Her INR is The patient has an MRI that is consistent		
with a	n acute stroke. The most common cause of stroke is:		
a *	Atherosclerosis		
b	Fibromuscular dysplasia		
с	Mitral valve prolapse		
d	Arterial dissection		
е	Meningovascular inflammation		
A 75-	year-old man with a history of recent memory impairment is admitted with headache, confusion, and a left		
homoi	hymous hemianopsia. He has recently had two episodes of brief unresponsiveness. There is no history of		
hypert	tension. Computed tomography (CT) scan shows a right occipital lobe hemorrhage with some		
subara	chnoid extension of the blood. An MRI scan with gradient echo sequences reveals foci of hemosiderin in		
the rig	the temporal and left frontal cortex. The likely cause of this patient's symptoms and signs is:		
a	Gliomatosis cerebri		
b	Multi-infarct dementia		
с	Mycotic aneurysm		
d *	Amyloid angiopathy		
e	Undiagnosed hypertension		
A 22-	year-old male abuser of intravenous heroin complains of severe headache while having sexual intercourse.		
Within	n a few minutes of that complaint, he develops right-sided weakness and becomes stuporous. His		
neurol	logic examination reveals neck stiffness as well as right arm and face weakness. An unenhanced		
emerg	ency CT scan reveals a lesion of 3 to 4 cm in the cortex of the left parietal lobe. The addition of contrast		
enhan	cement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the		
lesion	in the left parietal lobe. The diagnostic study most likely to establish the basis for this patient's		
neurol	ogic deficits is:		
a *	HIV antibody testing		
b	Cerebrospinal fluid (CSF) examination		
с	Electroencephalography		
d	Nerve conduction studies		
e	Cardiac catheterization		
Somat	oneurology can be sectioned into:		
a	Cardioneurology		
b	Stomatoneurology		
с	Visceroneurology		
d	Vertebroneurology		
e *	All mentioned		
Somat	oneuroorthopedics is sciense studying:		
a	Changes in the nervous system due to cardiovascular diseases		
b	Comorbid changes in the nervous system due to the maxillofacial diseases		
с	Comorbid changes in the nervous system due to the dysfunction of visceral organs		
d *	Diseases of bones & joints		
e	All mentioned		
Viscer	Visceroneurology is sciense studying:		
a	Changes in the nervous system due to cardiovascular diseases		
1.	Changes in the net vous system due to cardiovascular discuses		
D	Comorbid changes in the nervous system due to the maxillofacial diseases		

1	1 1		
a		Diseases of bones & joints	
e TI		All mentioned	
In	The somatoneuroortopedic syndromes include - viscero-vertebral and/or vertebro-visceral symptoms. When		
col	llect	ing patients anamnesis special attention should be paid to:	
a 1		The presence of factors contributing in the development of the disease	
b		Factors causing exacerbations	
C 1		Symptoms that preceded the aggravation of the disease	
d		Past illnesses, injuries and surgeries	
e L	*	All mentioned	
It 1	s be	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and	
the	e sev	verity of vertebral lesion. Localization of viscera-cutaneous projections of the smaller curvature of the	
sto	mac		
a 1	*	Region of 1n3-1n4 on left	
b	Ť	Region of Th4-Th7	
C		Region of Th2-Th3 on right	
d		Region of Th3-Th4	
e		Region of Th1-Th2 on left	
Lo	caliz	zation of viscera-cutaneous projections of the smaller curvature of the fundus of appendix:	
a		Region of Th10-Th12	
b		Region of Th4-Th5	
С		Region of Th5-Th6	
d		Region of Th6-Th7	
e	*	Region of Th8-Th9 or L2 on right	
It i	s be	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and	
the	e sev	verity of vertebral lesion. Localization of viscera-cutaneous projections of the smaller curvature of the	
fur	ıdus	of ovaries:	
a		Region of Th10	
b		Region of Th4	
С		Region of L2	
d		Region of Th6	
e	*	Region of L3	
61	-yea	r-old man with a history of hypertension has been in excellent health until he presents with vertigo and	
un	stead	diness lasting for 2 days. He then develops nausea, vomiting, dysphagia, hoarseness, ataxia, left facial	
pai	in, a	nd right-sided sensory loss. There is no weakness. On examination, he is alert, with a normal mental	
sta	tus.	He vomits with head movement. There is skew deviation of the eyes, left ptosis, clumsiness of the left	
arr	n, ai	nd titubation. He has loss of pin and temperature sensation on the right arm and leg and decreased joint	
po	sitio	n sensation in the left foot. He is unable to walk. Magnetic resonance imaging (MRI) in this patient	
mi	ght l	be expected to show which of the following?	
a	*	Basilar artery tip aneurysm	
b		Right lateral medullary infarction	
С		Left lateral medullary infarction	
d		Left medial medullary infarction	
e		Right medial medullary infarction	
Th	e dy	sphagia in this case is secondary to involvement of which of the following structures?	
a		Nucleus solitaries	
b		Nucleus and descending tract of CN V5	
С	*	Nucleus ambiguous	
d		Lateral spinothalamic tract	
e		Inferior cerebellar peduncle	
A'	75-у	rear-old man with a history of recent memory impairment is admitted with headache, confusion, and a left	
ho	mon	wmous hemianopsia. He has recently had two episodes of brief unresponsiveness. There is no history of	

homonymous hemianopsia. He has recently had two episodes of brief unresponsiveness. There is no history of hypertension. Computed tomography (CT) scan shows a right occipital lobe hemorrhage with some subarachnoid extension of the blood. An MRI scan with gradient echo sequences reveals foci of hemosiderin in

the	rig	ht temporal and left frontal cortex. The likely cause of this patient's symptoms and signs is:
a		Gliomatosis cerebri
b		Multi-infarct dementia
с		Mycotic aneurysm
d	*	Amyloid angiopathy
e		Undiagnosed hypertension
So	mate	oneurology can be sectioned into:
a		Cardioneurology
b		Stomatoneurology
с		Visceroneurology
d		Vertebroneurology
e	*	All mentioned
Vis	scer	oneurology is sciense studying:
а		Changes in the nervous system due to cardiovascular diseases
b		Comorbid changes in the nervous system due to the maxillofacial diseases
с	*	Comorbid changes in the nervous system due to the dysfunction of visceral organs
d		Diseases of bones & joints
e		All mentioned
Sto	mat	toneurology is sciense studying:
a		Changes in the nervous system due to cardiovascular diseases
b	*	Comorbid changes in the nervous system due to the maxillofacial diseases
c		Comorbid changes in the nervous system due to the dysfunction of visceral organs
d		Diseases of hones & joints
e		All mentioned
Th	e sc	matoneuroortopedic syndromes include - viscero-vertebral and/or vertebro-visceral symptoms. When
col	lect	ing nationed synchronics include viscoro vercora and or vercoro viscoral symptoms. When
a		The presence of factors contributing in the development of the disease
h		Factors causing exacerbations
C		Symptoms that preceded the aggravation of the disease
d		Past illnesses injuries and surgeries
e	*	All mentioned
It i	s he	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and
the	SPUC	verity of vertebral lesion. I ocalization of viscera-cutaneous projections of the smaller curvature of the
sto	mac	why or vorcebrar resion. Elecanzation or viscera edualeous projections of the smaller eurvature of the
a 310	mac	Region of Th3-Th4 on left
h	*	Region of Th4-Th7
C		Region of Th2-Th3 on right
d		Region of Th ₂ -Th ₄
a		Pagion of Th1 Th2 on left
	colir	region of viscore outencous projections of the smaller curvature of the fundus of appendix:
		Pagion of Th10 Th12
a h		Region of Th4 Th5
0		Region of Th5 Th6
4		Region of The Th7
u	*	Degion of The The or L2 on right
e 14:	. h.	Region of 1116-1119 of L2 on fight
Il 1	s de	sheved that changes in the sensitivity of skin zones depend on the sevenity of somatic organ impulses and
the sevency of vertebral lesion. Localization of viscera-cutaneous projections of the smaller curvature of the		
run	laus	Di uterus.
d L	*	Region of L4
0		Region of L2
C		Region of L2
a		Kegion of 100

e		Region of Th6	
A	73-1	vear-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and	
sh	slurred speech. On further questioning, he relates three brief episodes in the last month of sudden impairment of		
vis	sion	affecting the right eve. His examination now is normal. Which of the following would be the most	
an	nron	riate next diagnostic test?	
ap a		Creatine phosphokinase (CPK)	
a b		Holter monitor	
0		Visual avokad responses	
C	*	Visual evokeu responses	
a		Carona artery Doppler ultrasound	
e		Conventional cerebral angiography	
A	62-y	year-old man with a history of myocardial infarction awakens with a dense right-sided hemiplegia. His	
ey	es ai	re tonically deviated to the left, and he does not respond to threat on the right side of his visual field. He	
ap	pear	s to be alert and responds to pain on the left side of his body. His speech is unintelligible and nonfluent,	
an	d he	follows no instructions. Efforts to get him to repeat simple phrases consistently fail:	
a		Broca's aphasia	
b		Wernicke's aphasia	
с	*	Global aphasia	
d		Conduction aphasia	
e		Mixed transcortical aphasia	
Α	22-у	vear-old male abuser of intravenous heroin complains of severe headache while having sexual intercourse.	
W	ithin	a few minutes of that complaint, he develops right-sided weakness and becomes stuporous. His	
ne	urol	ogic examination reveals neck stiffness as well as right arm and face weakness. An unenhanced	
em	nerge	ency CT scan reveals a lesion of 3 to 4 cm in the cortex of the left parietal lobe. The addition of contrast	
en	hanc	cement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the	
les	sion	in the left parietal lobe. The diagnostic study most likely to establish the basis for this patient's	
ne	urol	ogic deficits is:	
а	*	HIV antibody testing	
b		Cerebrospinal fluid (CSF) examination	
c		Electroencephalography	
d		Nerve conduction studies	
e		Cardiac catheterization	
So	mat	oneurology can be sectioned into:	
00	linat	Cardioneurology	
a h		Stematoneurology	
0		Viscorerenerale su	
C		Visceroneurology	
d		Vertebroneurology	
e	*	All mentioned	
Vi	scer	oneurology is sciense studying:	
a		Changes in the nervous system due to cardiovascular diseases	
b		Comorbid changes in the nervous system due to the maxillofacial diseases	
С	*	Comorbid changes in the nervous system due to the dysfunction of visceral organs	
d		Diseases of bones & joints	
e		All mentioned	
Ca	ırdio	neurology is sciense studying:	
a	*	Changes in the nervous system due to cardiovascular diseases	
b		Comorbid changes in the nervous system due to the maxillofacial diseases	
с		Comorbid changes in the nervous system due to the dysfunction of visceral organs	
d		Diseases of bones & joints	
e		All mentioned	
Th	ie so	matoneuroortopedic syndromes include - viscero-vertebral and/or vertebro-visceral symptoms. When	
	llect	ing nations anamnesis special attention should be naid to	
20		The presence of factors contributing in the development of the disease	
a L		Factors conving execorbations	
D		racions causing exacerdations	

с		Symptoms that preceded the aggravation of the disease	
d		Past illnesses, injuries and surgeries	
e	*	All mentioned	
It i	is be	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and	
the	e sev	verity of vertebral lesion. Localization of viscera-cutaneous projections of the heart:	
a	*	Region of Th3-Th4 on left	
b		Region of Th6-Th7 on left	
с		Region of Th2-Th3 on right	
d		Region of Th3-Th4 on right	
e		Region of Th1-Th2 on left	
Lo	caliz	zation of viscera-cutaneous projections of the smaller curvature of the fundus of appendix:	
а		Region of Th10-Th12	
b		Region of Th4-Th5	
с		Region of Th5-Th6	
d		Region of Th6-Th7	
е	*	Region of Th8-Th9 or L2 on right	
Lo	caliz	zation of viscera-cutaneous projections of the smaller curvature of the pylorus:	
<u>a</u>		Region of Th3	
b		Region of Th4	
c	*	Region of Th5	
d		Region of The	
e		Region of Th7	
A	73-1	year-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and	
slu	rred	speech On further questioning he relates three brief episodes in the last month of sudden impairment of $\frac{1}{2}$	
vis	sion	affecting the right eve. His examination now is normal. Which of the following would be the most	
an	pron	riate next diagnostic test?	
a		Creatine phosphokinase (CPK)	
h		Holter monitor	
c		Visual evoked responses	
d	*	Carotid artery Doppler ultrasound	
e		Conventional cerebral angiography	
A	45-1	vear-old woman with chronic atrial fibrillation discontinues warfarin treatment and abruptly develops	
pro	oble	ms with language comprehension. She is able to produce some intelligible phrases and produces sound	
au	ite f	luently: however, she is unable to follow simple instructions or to repeat simple phrases. On attempting	
to	writ	e. she becomes very frustrated and agitated. What is the reason of his condition?	
a	*	Ischemic stroke	
b		Hemorragic stroke	
c		Transcortical motor aphasia	
d		Anomic aphasia	
e		Transient ischemic attack	
A	22-v	year-old male abuser of intravenous heroin complains of severe headache while having sexual intercourse	
W	ithin	a few minutes of that complaint he develops right-sided weakness and becomes stuporous. His	
ne	urol	ogic examination reveals neck stiffness as well as right arm and face weakness. An unenhanced	
em	nerge	ency CT scan reveals a lesion of 3 to 4 cm in the cortex of the left parietal lobe. The addition of contrast	
en	hanc	cement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the	
les	lesion in the left parietal lobe. The diagnostic study most likely to establish the basis for this patient's		
ne	neurologic deficits is:		
a	*	HIV antibody testing	
b		Cerebrospinal fluid (CSF) examination	
c		Electroencephalography	
d		Nerve conduction studies	
e		Cardiac catheterization	
So	mate	oneurology can be sectioned into:	
<u> </u>		~*	

а		Cardioneurology	
b		Stomatoneurology	
c		Visceroneurology	
d		Vertebroneurology	
e	*	All mentioned	
So	mate	oneuroorthonedics is sciense studving.	
3	mai	Changes in the nervous system due to cardiovascular diseases	
a b		Comorbid changes in the nervous system due to the maxillofacial diseases	
0		Comorbid changes in the nervous system due to the dysfunction of viscoral organs	
	*	Diseases of hones & joints	
u		All mentioned	
e Vi			
VI	scer	Changes in the nervous system due to cordioussesular diseases	
a 1		Changes in the nervous system due to cardiovascular diseases	
b		Comorbid changes in the nervous system due to the maxillofacial diseases	
c	*	Comorbid changes in the nervous system due to the dysfunction of visceral organs	
d		Diseases of bones & joints	
e		All mentioned	
Th	e so	omatoneuroortopedic syndromes include - viscero-vertebral and/or vertebro-visceral symptoms. When	
col	lect	ing patients anamnesis special attention should be paid to:	
a		The presence of factors contributing in the development of the disease	
b		Factors causing exacerbations	
с		Symptoms that preceded the aggravation of the disease	
d		Past illnesses, injuries and surgeries	
e	*	All mentioned	
It i	s be	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and	
the	sev	verity of vertebral lesion. Localization of viscera-cutaneous projections of the smaller curvature of the	
sto	mac	ch:	
a		Region of Th3-Th4 on left	
b	*	Region of Th4-Th7	
с		Region of Th4-Th7	
d		Region of Th3-Th4	
e		Region of Th1-Th2 on left	
Lo	cali	zation of viscera-cutaneous projections of the smaller curvature of the fundus of appendix:	
а		Region of Th10-Th12	
b		Region of Th4-Th5	
c		Region of Th5-Th6	
d	*	Region of Th4-Th7	
e		Region of Th8-Th9 or L2 on right	
A '	75-v	rear-old man with a history of recent memory impairment is admitted with headache confusion and a left	
ho	mon	when a more than when a mission of recent memory impairment is admitted when neaderice, contrasion, and a ferr	
hv	nerte	ension Computed tomography (CT) scan shows a right occipital lobe hemorrhage with some	
sul	hara	chnoid extension of the blood. An MRI scan with gradient echo sequences reveals foci of hemosiderin in	
the	rio	t temporal and left frontal cortex. The likely cause of this patient's symptoms and signs is:	
a	115	Gliomatosis cerebri	
h		Multi-infarct dementia	
C	$\left - \right $	Mycotic aneurysm	
4	*	Amyloid angionathy	
u A		Undiagnosed hypertension	
	() -	Unulagnosed hypertension	
A tor	u∠-y	to the left, and he does not respond to threat on the right side of his visual field. He appears to	
	be alart and responds to pain on the left side of his body. His sneech is unintelligible and nonfluent, and he		
	aler	and responds to pair on the feat size of his body. This speech is unintenigible and nonindent, and he is no instructions. Efforts to get him to report simple phrases consistently fail. What is the reason of his	
	follows no instructions. Efforts to get min to repeat simple phrases consistently fail. What is the reason of mis		
	ulti		

a	*	Ischemic stroke	
b		Hemorragic stroke	
с		Epylepsy	
d		Repeated myocardial infarction	
е		Transient ischemic attack	
Α	73-1	vear-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and	
slu	rred	speech. On further questioning, he relates three brief episodes in the last month of sudden impairment of	
vis	ion	affecting the right eve. His examination now is normal. The episodes of visual loss are most likely related	
to:			
a		Retinal vein thrombosis	
b		Central retinal artery ischemia	
с		Posterior cerebral artery ischemia	
d	*	Middle cerebral artery ischemia	
e		Posterior ciliary artery ischemia	
A	24-	vear-old woman abruptly loses all speech during the third trimester of an otherwise uncomplicated	
pre	egna	ncy. She has a history of severe migraines during which she occasionally develops a transient right	
hei	minl	legia. Her comprehension is good and she is frustrated by her inability to speak or write. She is unable to	
rer	beat	simple phrases, but she does begin to produce simple words within 5 days of the acute disturbance of	
lan	gua	ge. What is the reason of her symptoms?	
а	8	Gliomatosis cerebri	
b	*	Ischemic stroke	
c		Mycotic aneurysm	
d		Amyloid angiopathy	
e		Undiagnosed hypertension	
So	mate	oneurology can be sectioned into:	
3	mat	Cardioneurology	
h		Stomatoneurology	
C		Visceroneurology	
d		Visceroneurology	
u o	*	All mentioned	
	rdio	An menuoned	
	*	Changes in the nervous system due to cardiovascular diseases	
a h	•	Comorbid abanges in the nervous system due to the maxillefacial diseases	
0		Comorbid changes in the nervous system due to the dysfunction of viscorel organs	
С 4		Diseases of honors & joints	
a		All mentioned	
e			
50	oma	concursion of the studying:	
a 1	*	Changes in the nervous system due to cardiovascular diseases	
b	ŕ	Comorbid changes in the nervous system due to the maxilloracial diseases	
C		Comorbid changes in the nervous system due to the dysfunction of visceral organs	
d		Diseases of bones & joints	
e		All mentioned	
In	e so	omatoneuroortopedic syndromes include - viscero-vertebral and/or vertebro-visceral symptoms. When	
col	llect	ing patients anamnesis special attention should be paid to:	
a 1		The presence of factors contributing in the development of the disease	
b		Factors causing exacerbations	
C		Symptoms that preceded the aggravation of the disease	
d		Past illnesses, injuries and surgeries	
e	*	All mentioned	
It is believed that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and			
the	the severity of vertebral lesion. Localization of viscera-cutaneous projections of the heart:		
a	*	Region of Th3-Th4 on left	

b		Region of Th6-Th7 on left
с		Region of Th2-Th3 on right
d		Region of Th3-Th4 on right
e		Region of Th1-Th2 on left
Lo	cali	zation of viscera-cutaneous projections of the smaller curvature of the pylorus:
a		Region of Th3
b		Region of Th4
с	*	Region of Th5
d		Region of Th6
e		Region of Th7
Lo	cali	zation of viscera-cutaneous projections of the smaller curvature of the fundus of kidneys:
a	*	Region of Th10-Th12
b		Region of Th8-Th9
с		Region of Th5-Th6
d		Region of Th6-Th7
e		Region of Th7-Th8
A	57-y	vear-old woman with a history of type II diabetes mellitus and atrial fibrillation presents to the emergency
roc	om v	with right body weakness and slurred speech. The onset was sudden while she was brushing her teeth 1 h
age	o, a	nd she was brought immediately to the emergency room. She has no complaints of word-finding
dif	ficu	lties, no dysesthesia, and no headache. She is taking warfarin. Physical exam findings include blood
pre	ssu	re of 205/90 and irregularly irregular heart beat. There is left side neglect with slurred speech. There is a
cor	tico	spinal pattern of weakness of the right body, with the face and upper extremity worse than the lower
ext	rem	ity. Routine chemistries and cell counts are normal. Her INR is The patient has an MRI that is consistent
W1	th ai	1 acute stroke. The most common cause of stroke is:
a 1	Ť	
D		Fibromuscular dysplasia
C d		Mitral valve prolapsed
a		Arterial dissection
e	75 -	Meningovascular inflammation
A	/3-y mon	vertou man with a history of recent memory impairment is admitted with headache, comusion, and a left
hv	non	ansion. Computed tomography (CT) scan shows a right occipital lobe hemorrhage with some
sul	veru	chnoid extension of the blood. An MRI scan with gradient echo sequences reveals foci of hemosiderin in
the	rio	t temporal and left frontal cortex. The likely cause of this national's symptoms and signs is:
a	115	Gliomatosis cerebri
h		Multi-infarct dementia
C		Mycotic aneurysm
d	*	Amyloid angiopathy
e		Undiagnosed hypertension
A	22-x	ear-old male abuser of intravenous heroin complains of severe headache while having sexual intercourse
Wi	thin	a few minutes of that complaint, he develops right-sided weakness and becomes stuporous. His
nei	irol	ogic examination reveals neck stiffness as well as right arm and face weakness. An unenhanced
em	erge	ency CT scan reveals a lesion of 3 to 4 cm in the cortex of the left parietal lobe. The addition of contrast
enł	nanc	ement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the
les	ion	in the left parietal lobe. The diagnostic study most likely to establish the basis for this patient's
neu	irol	ogic deficits is:
a	*	HIV antibody testing
b		Cerebrospinal fluid (CSF) examination
c		Electroencephalography
d		Nerve conduction studies
e		Cardiac catheterization
So	mat	oneurology can be sectioned into:
a		Cardioneurology
		204

b		Stomatoneurology	
с		Visceroneurology	
d		Vertebroneurology	
e	*	All mentioned	
So	mate	oneuroorthopedics is sciense studying:	
а		Changes in the nervous system due to cardiovascular diseases	
b		Changes in the nervous system due to cardiovascular diseases	
с		Comorbid changes in the nervous system due to the dysfunction of visceral organs	
d	*	Diseases of bones & joints	
e		All mentioned	
Vi	scer	oneurology is sciense studying:	
- V I.		Changes in the nervous system due to cardiovascular diseases	
a h		Comorbid changes in the nervous system due to the maxillofacial diseases	
0	*	Comorbid changes in the nervous system due to the dusfunction of viscoral organs	
4		Diseases of honors & joints	
a		All wentiened	
e TI			
In	e so	omatoneuroortopedic syndromes include - viscero-vertebral and/or vertebro-visceral symptoms. When	
col	lect	ing patients anamnesis special attention should be paid to:	
a		The presence of factors contributing in the development of the disease	
b		Factors causing exacerbations	
С		Symptoms that preceded the aggravation of the disease	
d		Past illnesses, injuries and surgeries	
e	*	All mentioned	
It i	s be	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and	
the	sev	verity of vertebral lesion. Localization of viscera-cutaneous projections of the smaller curvature of the	
sto	mac	eh:	
a		Region of Th3-Th4 on left	
b	*	Region of Th4-Th7	
с		Region of Th2-Th3 on right	
d		Region of Th3-Th4	
e		Region of Th1-Th2 on left	
Lo	caliz	zation of viscera-cutaneous projections of the smaller curvature of the fundus of appendix:	
а		Region of Th10-Th12	
b		Region of Th4-Th5	
с		Region of Th5-Th6	
d		Region of Th6-Th7	
e	*	Region of Th8-Th9 or L2 on right	
It i	s he	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and	
the	sev	verity of vertebral lesion. Localization of viscera-cutaneous projections of the smaller curvature of the	
fur	ndus	of ovaries.	
2		Region of Th10	
h		Region of Th4	
C		Region of L2	
с 		Region of The	
u	*	Region of L3	
C 61	L'	Region of human has been in excellent health until he presents with metics and	
01	or-year-old man with a history of hypertension has been in excellent health until he presents with vertigo and		
	siea	uness fasting for 2 days. The men develops hausea, volinting, dysphagia, noarseness, ataxia, left factal	
pai	m, a	He register with bood movement. There is show deviation of the case, left stagic, share in a first left	
sta	ius.	nd titubation. He has loss of nin and temperature consistion on the right arm and loss and decreased is int	
arr	u, al	no nuovation. The has loss of pin and temperature sensation on the right arm and leg and decreased joint	
pos	s1t10	in sensation in the left root. He is unable to walk. Magnetic resonance imaging (MRI) in this patient	
mı	gnt	be expected to snow which of the following?	
a		Bashar artery tip aneurysm	

b		Right lateral medullary infarction
с	*	Left lateral medullary infarction
d		Left medial medullary infarction
e		Right medial medullary infarction
See	e qu	estion The dysphagia in this case is secondary to involvement of which of the following structures?
а		Nucleus solitaries
b		Nucleus and descending tract of CN V5
с	*	Nucleus ambiguous
d		Lateral spinothalamic tract
e		Inferior cerebellar peduncle
A	75-y	rear-old man with a history of recent memory impairment is admitted with headache, confusion, and a left
ho	mon	ymous hemianopsia. He has recently had two episodes of brief unresponsiveness. There is no history of
hy	perte	ension. Computed tomography (CT) scan shows a right occipital lobe hemorrhage with some
sut	ara	chnoid extension of the blood. An MRI scan with gradient echo sequences reveals foci of hemosiderin in
the	rig	ht temporal and left frontal cortex. The likely cause of this patient's symptoms and signs is:
a		Gliomatosis cerebri
b		Multi-infarct dementia
с		Mycotic aneurysm
d	*	Amyloid angiopathy
e		Undiagnosed hypertension
So	mate	oneurology can be sectioned into:
а		Cardioneurology
b		Stomatoneurology
с		Visceroneurology
d		Vertebroneurology
e	*	All mentioned
Vi	scer	oneurology is sciense studying:
а		Changes in the nervous system due to cardiovascular diseases
b		Comorbid changes in the nervous system due to the maxillofacial diseases
с	*	Comorbid changes in the nervous system due to the dysfunction of visceral organs
d		Diseases of bones & joints
e		All mentioned
Sto	oma	toneurology is sciense studying:
а		Changes in the nervous system due to cardiovascular diseases
b	*	Comorbid changes in the nervous system due to the maxillofacial diseases
с		Comorbid changes in the nervous system due to the dysfunction of visceral organs
d		Diseases of bones & joints
e		All mentioned
Th	e so	omatoneuroortopedic syndromes include - viscero-vertebral and/or vertebro-visceral symptoms. When
col	llect	ing patients anamnesis special attention should be paid to:
а		The presence of factors contributing in the development of the disease
b		Factors causing exacerbations
с		Symptoms that preceded the aggravation of the disease
d		Past illnesses, injuries and surgeries
e	*	All mentioned
It i	s be	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and
the	sev	verity of vertebral lesion. Localization of viscera-cutaneous projections of the smaller curvature of the
sto	mac	h:
a		Region of Th3-Th4 on left
b	*	Region of Th4-Th7
с		Region of Th5-Th8
d		Region of Th3-Th4

	1	
e	1.	Region of Th1-Th2 on left
Loc	calız	zation of viscera-cutaneous projections of the smaller curvature of the fundus of appendix:
a		Region of Th10-Th12
b		Region of Th4-Th5
С		Region of Th5-Th6
d		Region of Th6-Th7
e	*	Region of Th8-Th9 or L2 on right
It is	s be	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and
the	sev	verity of vertebral lesion. Localization of viscera-cutaneous projections of the smaller curvature of the
fun	dus	of uterus:
a		Region of Th10
b	*	Region of L4
c		Region of L2
d		Region of Th6
e		Region of L3
A 7	/3-y	year-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and
slur	red	speech. On further questioning, he relates three brief episodes in the last month of sudden impairment of
visi	on	affecting the right eye. His examination now is normal. Which of the following would be the most
app	rop	riate next diagnostic test?
a	1	Creatine phosphokinase (CPK)
b		Holter monitor
c		Visual evoked responses
d	*	Carotid artery Doppler ultrasound
e		Conventional cerebral angiography
A	52-v	ear-old man with a history of myocardial infarction awakens with a dense right-sided heminlegia. His
eve	s ar	the topically deviated to the left and he does not respond to threat on the right side of his visual field. He
ann	ear	s to be alert and responds to pain on the left side of his body. His speech is unintelligible and nonfluent
and	he	follows no instructions. Efforts to get him to repeat simple phrases consistently fail:
a	· IIC	Broca's anhasia
h		Wernicke's anhasia
C	*	Global anhasia
d		Conduction aphasia
u e		Mixed transcortical anhacia
	2 1	war old male abuser of intravenous beroin complains of severe beadache while baying sevual intercourse
	,∠-y ∙hin	a few minutes of that complaint he develops right sided weakness and becomes stuporous. His
10 nou	role	a few minutes of that comptaint, he develops right arm and face weakness. An unenhanced
am	arac	ancy CT scan reveals a lesion of 3 to 4 cm in the cortex of the left parietal lobe. The addition of contrast
onh	anc	ement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the
	on	in the left parietal lobe. The diagnostic study most likely to establish the basis for this patient's
nou	on role	and the feft partetal lobe. The diagnostic study most fixery to establish the basis for this patient's
neu	*	UV antibody tasting
a h		Cerebrospinal fluid (CSE) examination
0		
C 1		News exploring the line
a		Nerve conduction studies
e		Carutac cameterization
Sor	nato	oneurology can be sectioned into:
a		Cardioneurology
b		Stomatoneurology
c		Visceroneurology
d		Vertebroneurology
e	*	All mentioned
Vis	cere	oneurology is sciense studying:
a		Changes in the nervous system due to cardiovascular diseases

b		Comorbid changes in the nervous system due to the maxillofacial diseases
с	*	Comorbid changes in the nervous system due to the dysfunction of visceral organs
d		Diseases of bones & joints
e		All mentioned
Ca	rdio	neurology is sciense studying:
a	*	Changes in the nervous system due to cardiovascular diseases
b		Comorbid changes in the nervous system due to the maxillofacial diseases
с		Comorbid changes in the nervous system due to the dysfunction of visceral organs
d		Diseases of bones & joints
e		All mentioned
Th	e so	omatoneuroortopedic syndromes include - viscero-vertebral and/or vertebro-visceral symptoms. When
col	llect	ing patients anamnesis special attention should be paid to:
a		The presence of factors contributing in the development of the disease
b		Factors causing exacerbations
с		Symptoms that preceded the aggravation of the disease
d		Past illnesses, injuries and surgeries
e	*	All mentioned
It i	s be	lieved that changes in the sensitivity of skin zones depend on the severity of somatic organ impulses and
the	e sev	verity of vertebral lesion. Localization of viscera-cutaneous projections of the heart :
a	*	Region of Th3-Th4 on left
b		Region of Th6-Th7 on left
с		Region of Th2-Th3 on right
d		Region of Th3-Th4 on right
e		Region of Th1-Th2 on left
Lo	cali	zation of viscera-cutaneous projections of the smaller curvature of the fundus of appendix.
<u>a</u>		Region of Th10-Th12
b		Region of Th4-Th5
c		Region of Th5-Th6
d		Region of Th6-Th7
e	*	Region of Th8-Th9 or L2 on right
Lo	cali	zation of viscera-cutaneous projections of the smaller curvature of the pylorus:
<u>a</u>		Region of Th3
b		Region of Th4
c	*	Region of Th5
d		Region of Th6
e		Region of Th7
A	73-1	year-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and
slu	rred	speech. On further questioning, he relates three brief episodes in the last month of sudden impairment of
vis	ion	affecting the right eve. His examination now is normal. Which of the following would be the most
api	pron	priate next diagnostic test?
a	<u> </u>	Creatine phosphokinase (CPK)
b		Holter monitor
c		Visual evoked responses
d	*	Carotid artery Doppler ultrasound
e		Conventional cerebral angiography
Ā	45-'	vear-old woman with chronic atrial fibrillation discontinues warfarintreatment and abruptly develops
nro	oble	ms with language comprehension. She is able to produce some intelligible phrases and produces sound
	ite f	luently: however, she is unable to follow simple instructions or to repeat simple phrases. On attempting
to	writ	e. she becomes very frustrated and agitated. What is the reason of his condition?
a	*	Ischemic stroke
h		Hemorragic stroke
c		Transcortical motor aphasia
<u> </u>	1	

d		Anomic aphasia
e		Transient ischemic attack
A	22-у	vear-old male abuser of intravenous heroin complains of severe headache while having sexual intercourse.
Wi	thin	a few minutes of that complaint, he develops right-sided weakness and becomes stuporous. His
neu	ırol	ogic examination reveals neck stiffness as well as right arm and face weakness. An unenhanced
em	erge	ency CT scan reveals a lesion of 3 to 4 cm in the cortex of the left parietal lobe. The addition of contrast
enł	nanc	cement reveals two other smaller lesions in the right frontal lobe but does not alter the appearance of the
les	ion	in the left parietal lobe. The diagnostic study most likely to establish the basis for this patient's
neu	ırol	ogic deficits is:
a	*	HIV antibody testing
b		Cerebrospinal fluid (CSF) examination
с		Electroencephalography
d		Nerve conduction studies
e		Cardiac catheterization
So	mate	oneurology can be sectioned into:
а		Cardioneurology
b		Stomatoneurology
с		Visceroneurology
d		Vertebroneurology
e	*	All mentioned
So	mate	oneuroorthopedics is sciense studying:
a		Changes in the nervous system due to cardiovascular diseases
b		Comorbid changes in the nervous system due to the maxillofacial diseases
c		Comorbid changes in the nervous system due to the dysfunction of visceral organs
d	*	Diseases of bones & joints
e		All mentioned
Vis	scer	oneurology is sciense studying:
2		Changes in the nervous system due to cardiovascular diseases
h		Comorbid changes in the nervous system due to the maxillofacial diseases
C	*	Comorbid changes in the nervous system due to the dysfunction of visceral organs
d		Diseases of hones & joints
e		All mentioned
Th	e sc	matoneuroortopedic syndromes include - viscero-vertebral and/or vertebro-visceral symptoms. When
	lect	ing nations anamnesis special attention should be naid to:
2		The presence of factors contributing in the development of the disease
h		Factors causing exacerbations
C		Symptoms that preceded the aggravation of the disease
d		Past illnesses injuries and surgeries
u A	*	All mentioned
It i	s he	An included
the		verity of vertebral lesion. Localization of viscera-cutaneous projections of the smaller curvature of the
sto	mac	sh.
310	mac	Region of Th3_Th4 on left
a b	*	Region of Th4 Th7
0	-	Region of Th2 Th3 on right
4	$\left \right $	$\mathbf{P}_{\text{agion of Th}2} = \text{Th}3 \text{ Th}4$
u		Region of Th1 Th2 on left
	0.11	Region of viscara cutanaous projections of the smaller curvature of the fundue of annendive
		Pagion of Th10 Th12
a 1-		Region of Th4 Th5
D		Region of Th4-In5
C		
d		Kegion of Tho-Th/

e	*	Region of Th8-Th9 or L2 on right
A	75-v	ear-old man with a history of recent memory impairment is admitted with headache, confusion, and a left
ho	mon	vmous hemianopsia. He has recently had two episodes of brief unresponsiveness. There is no history of
hv	perte	ension. Computed tomography (CT) scan shows a right occipital lobe hemorrhage with some
sul	para	chnoid extension of the blood. An MRI scan with gradient echo sequences reveals foci of hemosiderin in
the	rigl	t temporal and left frontal cortex. The likely cause of this patient's symptoms and signs is:
a	115	Gliomatosis cerebri
u h		Multi_infarct dementia
0		Multi-Infalct dementia
с 	*	Amyloid angiopathy
u	·	Undiagnosed hymertension
e ^	(2)	Undragnosed hypertension
А	02-y	rear-old man with a mistory of myocardial infarction awakens with a dense right-sided nemplegia. His
eye	es ai	e concarry deviated to the feft, and he does not respond to threat on the right side of his visual field. He
ap		s to be alert and responds to pain on the left side of ms body. His speech is uninterligible and nonlinent,
and	i ne	Tonows no instructions. Enoris to get nim to repeat simple phrases consistently fail. What is the reason
OI .	nis c	
a 1	*	Iscnemic stroke
b	$\left \right $	Hemorragic stroke
С		Epylepsy
d		Repeated myocardial infarction
e		Transient ischemic attack
A	73-у	vear-old man with a history of hypertension complains of a 10-min episode of left-sided weakness and
slu	rred	speech. On further questioning, he relates three brief episodes in the last month of sudden impairment of
vis	ion	affecting the right eye. His examination now is normal. The episodes of visual loss are most likely related
to:		
a		Retinal vein thrombosis
b	*	Central retinal artery ischemia
с		Posterior cerebral artery ischemia
d		Middle cerebral artery ischemia
e		Posterior ciliary artery ischemia
Α	24-1	year-old woman abruptly loses all speech during the third trimester of an otherwise uncomplicated
pre	- gna	ncy. She has a history of severe migraines during which she occasionally develops a transient right
hei	nipl	egia. Her comprehension is good, and she is frustrated by her inability to speak or write. She is unable to
rep	eat	simple phrases, but she does begin to produce simple words within 5 days of the acute disturbance of
lan	gua	ge. What is the reason of her symptoms?
а		Gliomatosis cerebri
b	*	Ischemic stroke
c		Mycotic aneurysm
d		Amyloid angionathy
P		Undiagnosed hypertension
In	Hira	changlosed hypertension schenrung's disease neural crest cells fail to migrate normally early in fatal development and produce
not	tenti	ally fatal complications within months of birth because of disturbed:
po	*	Intestinal motility
a h	·	Diaddan control
0	$\left - \right $	Swellowing
С -1	$\left \right $	Swallowing Dile secretion
a	$\left \right $	Dife secretion
e		
A newborn infant has a cystic swelling at the base of the spine that is covered with hyperpigmented skin and		
SOI	ne c	coarse hair. Which of the following is the most likely explanation?
a		Mongolian spot
b		Spina bifida occulta
с		Nevus flammeus
d	*	Meningocele
		210

e		Encephalocele
At	age	5. a child is noted to have the loss of ankle ierks. At age 10, limb ataxia develops, followed by a
per	rinh	eral neuropathy. During adolescence, retinitis pigmentosa develops. Acanthocytosis is present These are
all	cha	racteristic of which of the following?
а		Multiple sclerosis (MS)
b		Sickle cell disease
c	*	Abetalipoproteinemia
d		Progressive multifocal leukoencephalonathy (PML)
e		HIV subacute encephalomyelitis
Th	e se	cond cervical vertebra extends above the level of the foramen magnum and places the patient at high risk
of	havi	ng.
a		A meningoencephalocele
h		A myelomeningocele
c		Svringobulbia
d	*	Syringomyelia
e		Brainstem compression
In	vie	y of the unusually wide separation (double-barbed arrow) of caudal elements of the atlas from the
od	onto	id process one should suspect:
a	*	Instability of the atlantoaxial joint
h		Hemorrhage into the atlantoaxial joint
C		Fusion of C2 to C3
d		Fracture of the adoptoid process
u o		Fracture of the C2 spinous process
	5 1/0	ar old how has montal retardation, homonymous hamianonsia, and haminarasis. He had, infantile snasm
and	J-ye d ati	Il has apilensy. Head CT reveals calcifications in the carebral cortex in a railroad track pattern. Which of
the	u su s fol	lowing does this child most likely have?
0	/ 101	Cliphlastoma multiforma
a h		Oligodendrogliome
0		
с 1		Acoustic scriwalillonia
a	*	Sturge Weber sundrome
e A	25 -	Surge-weber syndrome
A (D)	ээ-у итт	With DKLL serum may exhibit dengerously high levels of:
(P)	NU)	Creating phospholyings (CDK)
a h		Niestinemide
D	*	Dhamallatona
C I	*	
a		Lactate denydrogenase
e		Phenylalanine
A	4-ye	car-old previously healthy girl develops an intermittent red, scaly rash over her face, neck, hands, and
leg	ςs. Ι	inis is followed by developmental delay, emotional lability, and episodic cerebellar ataxia. She is
	igno	Nitemin C
a 1	*	
D	ŕ	INICOURAIMURE This wine
C		1 mamme
d	<u> </u>	Pyridoxine
e		
He	pate	osplenomegaly is most likely with:
a	<u> </u> .	Tay-Sachs disease
b	*	Niemann-Pick disease
С		Alpers' disease
d		Subacute necrotizing encephalopathy
e		Wilson's disease (hepatolenticular degeneration)

A	A 25-year-old woman with epilepsy is taking divalproex sodium during the first trimester of pregnancy. She is		
at	singr	In the reased risk of naving children with which of the following?	
a		Holoprosencephaly	
b	Ť	Defects of neural tube closure	
C		Medulloblastoma	
d		Agenesis of the corpus callosum	
e		Kallmann syndrome	
W	ith a	genesis of the corpus callosum, magnetic resonance imaging (MRI) will reveal:	
a		Atrophy of the frontal lobes	
b	*	Abnormally shaped lateral and third ventricles	
С		Cerebellar aplasia	
d		Schizencephaly	
e		Encephaloclastic porencephaly	
Α	boy	has the onset of difficulty walking at 16 months. Reflexes are decreased. Over the course of sever With	
ag	enes	is of the corpus callosum, magnetic resonance imaging (MRI) will reveal: al months, the patient becomes	
dy	sartł	nric and mental functioning decreases. Testing reveals that the patient has a deficiency of arylsulfatase A.	
W	hich	of the following does this patient most likely have?	
a		Sandhoff's disease	
b		Tay-Sachs disease	
С		Gaucher's disease	
d	*	Metachromatic leukodystrophy	
e		McArdle's disease	
Α	15-y	vear-old boy has moderate mental retardation, attention deficit disorder, a long face, enlarged ears, and	
ma	acro	prchidism. Development has been steady but always at a delayed pace. The most likely cause for this	
pa	tient	's low intelligence is which of the following?	
a		Turner syndrome	
b	*	Klinefelter syndrome	
с		Fragile X syndrome	
d		Reve syndrome	
e		Tuberous sclerosis	
A	35-1	rear-old man complains of stumbling and slurred speech. His problem started several months ago and has	
pro	ogre	seed slowly but consistently. On neurologic examination he is found to have scanning speech	
nv	stag	mus limb dysmetria, and kinetic tremor. His intellectual function is normal The most appropriate initial	
iny	vesti	gation is:	
2		Lumbar puncture	
h		Serum drug screen	
c		Routine urinalysis	
d		Posterior fossa myelogram	
Δ	*	Precontrast CT scan	
Δr	in	fant has a head CT performed because of a large head and failure to thrive. The diagnosis of	
hv	droc	enhalus is made. Congenital hydrocenhalus may develop as a consequence of which first trimester	
m	uroc	al disorder?	
0		Complicated migraine	
a h	*	Viral infaction	
0		Providetumer corebri	
2 1	$\left - \right $	Choree gravidarum	
a	$\left \right $	Unorea gravitalum Internetebral diale harmiation	
e			
Se	e qu	estion Uncorrected congenital hydrocephalus will usually produce which of the following?	
a		Dolicnocepnaly	
b		Brachycephaly	
C	<u> </u>	Holoprosencephaly	
d	*	Macrocephaly	
e	1	Microcephaly	

average A renal cyst b Pulmonary atelectasis c * Spina bifda d Holoprosencephaly e A hepatic cyst A 7-year-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are concerned. The dermatologist tells them that their child has adenoma sebaceum. Adenoma sebaceum of the face is especially common with which of the following diseases? a Neurofibromatosis b Tuberous sclerosis d A taxia telangicetasia e Fragile X syndrome c Tuberous sclerosis d Ataxia telangicetasia e Fragile X syndrome A Less than 3 contins b Less than 5 years c Less than 1 year c Less than 1 year e Variant (Parent) d Less than 1 years e Variant (Parent) d Designer (Tegretol) d Divaligneex sodium (Depakote) e Variant (Parent) d Divalignex sodium (Depakote) <	A	A 6-month-old child is noted to have head lag, tongue fasciculations, and bilateral abducens palsies. MRI scan	
a A Tenta Cyst b Pulmonary atelectasis c * Spina biffda A d Holoprosencephaly e A hepatic cyst A 7-year-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are concerned. The dermatologist tells them that their child has adenoma sebaceum. Adenoma sebaceum of the face is especially common with which of the following diseases? a Neurofbromatosis b Surge-Weber syndrome c * d Ataxia telangitectusia e Fragile X syndrome c. * A S0-year-Old man complaining of dizziness is found to have a cyst occupying 50% of his posterior fossa and incomplete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus. His longevity can be estimated to be: a Less than 1 year c Less than 1 year d Less than 1 year e * Unaffected by this finding See quesion The treatment of choice for children with infantile spasm is: a Carbomazepine (Tegretol) b Phenotarbital c Phenytoin (Dilantin)	100	Cars	A ropel cyct
0 * Sinia bifda 0 * Sinia bifda 1 Holoprosencephaly A 7-year-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are concerned. The dermatologist tells them that their child has adenoma sebaceum. Adenoma sebaceum of the face is especially common with which of the following diseases? a Neurofibromatosis b Sturge-Weber syndrome c * Tuberous sclerosis d Ataxia telangiectasia e Fragile X syndrome c Fragile X syndrome c Fragile X syndrome c Less than 1 year c Less than 3 nonths b Less than 1 year c Weits face of the is finding See question The treatment of choice for children with infantile spasms is: a Carbinazepine (Tegretol) b Phenytoin (Dilantin) c Hypstropk sodium (Depakote) e Y Honobarbial d Divalprock sodium (Depakote) e Spinares	a h		Pulmonery etalogtosis
C → Spina Dilay d Holoprosencephaly e A hepaic cyst A -ryear-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are concerned. The dermatologist tells them that their child has adenoma sebaceum. Adenoma sebaceum of the face is especially common with which of the following diseases? a Neurofibromatosis b Sturge-Weber syndrome c * Tuberous sclerosis d Atasia telangiectusia e Fragile X syndrome c * A topical telangiectusia d Atasia telangiectusia e Less than 5 posterior fossa and incomplete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus. His longevity can be estimated to be: a a Less than 1 year c Less than 1 years d Less than 5 years d Less than 1 year e Phenobarbital c Phenobarbital d Phenobarbital d Phenobarbital	D	*	Pullionary atelectasis
d Holoprosencephay e A hepatic cyst A 7-year-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are concerned. The dermatologist tells them that their child has adenoma sebaceum. Adenoma sebaceum of the face is especially common with which of the following diseases? a Neurofibromatosis b Sturge-Weber syndrome c * c * d Ataxia telangicetasia d Ataxia telangicetasia d Fragile X syndrome A 50-year-old man complaining of dizziness is found to have a cyst occupying 50% of his posterior fossa and incomplete fusion of the cerebelar elements inferiorly. There is no evidence of an obstructive hydrocephalus. His longevity can be estimated to be: a Less than 1 synan d Less than 1 oyears e Vanfected by this finding See question The treatment of choice for children with infantile spasms is: a Carbamazepine (Tegretol) b Psenobarbital c Phenobarbital c Phenobarbital d Divafprox sodium (Depakote) e A dareocorticotropic hormone (ACTH) The newborn infant with motor neuron disease is like	C 1	*	Spina binda
a A hepate cyst A ryear-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are concerned. The dermatologist tells them that their child has adenoma sebaceum. Adenoma sebaceum of the face is especially common with which of the following diseases? a Neurofibromatosis b Sturge-Weber syndrome c * d Ataxia telangicctasia e Fragile X syndrome c * A S0-year-old man complaining of dizziness is found to have a cyst occupying 50% of his posterior fossa and incomplete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus. His longevity can be estimated to be:	d		Holoprosencephaly
A 7-year-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are concerned. The dermatologist tells them that their child has adenoma sebaceum. Adenoma sebaceum of the face is especially common with which of the following diseases? A Neurofibromatosis A Neurofibromatosis A Tuberous sclerosis A Tuberous to the neurologist sclerosis A Tuberous to the sclerosis a	e		A hepatic cyst
 concerned. The dermatologist fells them that their child has adenoma sebaceum. Adenoma sebaceum of the face is especially common with which of the following diseases? a Neurofibromatosis Sturge-Weber syndrome * Tuberous sclerosis Ataxia telangiectasia Fragile X syndrome A taxia telangiectasia Fragile X syndrome Ataxia telangiectasia Fragile X syndrome A taxia telangiectasia Fragile X syndrome A taxia telangiectasia Fragile X syndrome A taxia telangiectasia Less than 3 months Less than 1 year Less than 1 years Less than 1 years Less than 1 years Less than 1 year Less than 1 year Less than 1 years Carbamazepine (Tegretol) Phenobarbial Phenobarbial Phenobarbial Phenobarbial Divalprocex sodium (Depakote) Yadprocex sodium (Depakote) Yadprocex sodium (Depakote) Adrenocorticotropic hormone (ACTH) The newborn infant with motor neuron disease is likely to exhibit: Seizures Spina bifda Moro reflexes Spina bifda Chorry red spots Chorizentitis Chorizentitis Chorizentitis Chorizentitis Chorizentitis Chorizentitis Chorizentitis Chorizentitis Affected persons have resting tremoses 	Α	7-ye	ar-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are
is especially common with which of the following diseases? A local local set of the following diseases? Sturge-Weber syndrome local local local set of the following diseases? Sturge-Weber syndrome local local local set of the following diseases and incomplete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus. His longevity can be estimated to be: local local local set of the following diseases and incomplete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus. His longevity can be estimated to be: local local loc	COI	ncer	ned. The dermatologist tells them that their child has adenoma sebaceum. Adenoma sebaceum of the face
a Neurofibromatosis b Sturge-Weber syndrome c * d Ataxia telangiectasia e Fragile X syndrome A SO-year-old man complaining of dizziness is found to have a cyst occupying 50% of his posterior fossa and incomplete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus. His longevity can be estimated to be: a Less than 3 months b Less than 1 years c Less than 1 years d Less than 1 years c Less than 1 years c Less than 1 years c Less than 1 years d Less than 1 years c Less than 1 years c Less than 1 years c Less than 1 years d Less than 1 years c Verstrained for by this finding Sec querter of choice for children with infantile spasms is: e Wardencotricotropic hormone (ACTH) r> r> restrues Verstrained with motor neuron disease is likely to exhibit: a Seizures Verstrained disease develop blindness before they die, with retinal accumulation of they div	is e	espe	cially common with which of the following diseases?
b Sturge-Weber syndrome c * c * Tuberous sclerosis	a		Neurofibromatosis
c * Tuberous sclerosis d Ataxia telangiectasia d Ataxia telangiectasia d Sol-year-old man complaining of dizziness is found to have a cyst occupying 50% of his posterior fossa and incomplete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus. His longevity can be estimated to be: a Less than 3 months b Less than 1 year c Less than 1 years e Vast the finding Soe question The treatment of choice for children with infantile spasms is: a Carbamazepine (Tegretol) b Phenotonin (Dilantin) d Divalproex sodium (Depakote) e * a Seizures b Seizures c Hypotonia c Hypotonia c Hypotonia c Spina bifda d Moro reflexes e Spina bifda d Moro reflexes e Spina bifda d Way exulates e Optic neuritis c Retinal detachments	b		Sturge-Weber syndrome
d Atxia telangiectasia e Fragile X syndrome A SU-year-old man complaining of dizziness is found to have a cyst occupying 50% of his posterior fossa and incompetitie fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus. His Iongevity can be estimated to be: I Less than 1 year I I I I Less than 1 year I I Carbamazepine (Tegretol) I I Carbamazepine (Tegretol) I I Phenobarbital I I Vialproex solium (Depakote) I I Noro reflexes I I Noro reflexes I I Noro reflexes	c	*	Tuberous sclerosis
e i Fragile X syndrome A 50-year-old man complaining of dizziness is found to have a cyst occupying 50% of his posterior fossa and incomplete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus. His longevity can be estimated to be: a Less than 3 months b Less than 1 year c Less than 1 years e Values than 1 years d Phenobarbital c Phenobarbital d Divalproex soliun (Depakote) e Phenobarbital d More releves e Hypotonia d Hypotonia	d		Ataxia telangiectasia
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A 6-year-old child is brought to the neurologist because of developmental delay. Her morphological features	e		The EEG exhibits a disorganized background rhythm
	A 6-year-old child is brought to the neurologist because of developmental delay. Her morphological features		
are typical and chromosome analysis confirms a diagnosis of Down syndrome (trisomy 21). The brain of this	are	e tvn	ical and chromosome analysis confirms a diagnosis of Down syndrome (trisomy 21). The brain of this

pat	tient	is expected to be:
a	*	Smaller than normal for age and body size
b		Larger than normal for age and body size
с		Abnormally long in anteroposterior measurements
d		Excessively convoluted
e		None of the above
Po	renc	rephaly usually develops as a consequence of:
a		Fetal alcohol syndrome
b	*	Vascular or other destructive injuries to the fetal brain
с		Trisomy 13
d		Trisomy 21
e		Dandy-Walker syndrome
W	hat r	percentage of patients with tuberous sclerosis have mental retardation?
а	1	1
b		10
c		25
d	*	65
e		99
A	chil	d is born to a 19-year-old woman who has had two to eight drinks per day throughout her pregnancy
W	hat i	s the major nathologic effect of alcohol on the central nervous system of the developing fetus?
3		Cerebral ischemia
h		Periventricular hemorrhage
C		Macrocenhaly
d	*	Impaired neuronal migration
u o		Holoprosencephaly
	37 .	rear old man has an MPI performed by his primary care doctor because of a long history of headaches. It
ie i	onta	ble only for the finding of a type 1 Chiari malformation. He is sent to a neurologist for further evaluation
	type	1 Chiari malformation usually becomes symptomatic as which of the following in adults?
2	lype	Enjlensy
a h		Hydrocenhalus
0	*	Atavia
с 1		Domontio
u o		Dementia
е л	25 .	rsychosis
	23-y mod	a by serology Proposal CMV infections may produce which ratingl disturbance?
15 1	nau *	Chorierstinitie
a h		Chomy red anot
D		Miene en europeane
C d		
a		Hypervascularity
e	11.	
In	Hirs	schsprung's disease, neural crest cells fail to migrate normally early in fetal development and produce
po	tent	ally fatal complications within months of birth because of disturbed:
a 1	ŕ	Intestinal motility
b		Bladder control
c		Swallowing
d		Bile secretion
e		Cardiac rhythms
ln	Hir	schsprung's disease, neural crest cells fail to migrate normally early in fetal development and produce
po	tenti	ally tatal complications within months of birth because of disturbed:
a	*	Intestinal motility
b		Bladder control
С		Swallowing

d		Bile secretion
e		Cardiac rhythms
А	new	born infant has a cystic swelling at the base of the spine that is covered with hyperpigmented skin and
SOI	me c	coarse hair. Which of the following is the most likely explanation?
а		Mongolian spot
b		Spina bifida occulta
с		Nevus flammeus
d	*	Meningocele
e		Encephalocele
At	age	5 a child is noted to have the loss of ankle jerks. At age 10 limb ataxia develops followed by a
pe	rinhe	eral neuropathy. During adolescence, retinitis pigmentosa develops. Acanthocytosis is present. In this
dis	orde	er, chylomicrons, very-low-density lipoprotein (VLDL), and low-density lipoprotein (LDL) are largely
ab	sent	in the serum as a consequence of a mutation in which gene?
а	*	Microsomal triglyceride transfer protein (MTP)
b		Huntingtin
c		Amyloid precursor protein
d		Dystrophin
e		Transfer RNA (tRNA)
Th	e se	cond cervical vertebra extends above the level of the foramen magnum and places the patient at high risk
of	havi	ng.
a		A meningoencephalocele
b		A myelomeningocele
c		Svringobulbia
d	*	Syringomyelia
e		Brainstem compression
A	$4 - v \epsilon$	par-old previously healthy girl develops an intermittent red scaly rash over her face neck hands and
leo	rs T	This is followed by developmental delay emotional lability and episodic cerebellar ataxia. She is
dia	igno	sed with Hartnup's disease. Her condition may respond to large supplementary doses of:
а		Vitamin C
b	*	Nicotinamide
с		Thiamine
d		Pyridoxine
e		a tocopherol
W	ith a	genesis of the corpus callosum, magnetic resonance imaging (MRI) will reveal:
а		Atrophy of the frontal lobes
b	*	Abnormally shaped lateral and third ventricles
c		Cerebellar aplasia
d		Schizencephaly
e		Encephaloclastic porencephaly
A	15-3	rear-old box has moderate mental retardation attention deficit disorder a long face enlarged ears and
ma	ncroo	prchidism. Development has been steady but always at a delayed pace. Women carrying chromosomes
for	this	s disorder:
a	*	Are invariably normal
b		Have mild retardation in about one-half of cases
c		Have high-arched palates and hypotelorism
d		Have hyperextensible joints
e		Have prominent thumbs
A	35-v	ear-old man complains of stumbling and slurred speech. His problem started several months ago and has
pro)gre	ssed slowly but consistently. On neurologic examination, he is found to have scanning speech
nv	stag	mus, limb dysmetria, and kinetic tremor. His intellectual function is normal. Admission studies include a
1	moto	parties of 55% and a routing uringly sign which reveals excess protain and some PBCs in the uring Uring

nematorit of 55% and a routine urinalysis, which reveals excess protein and some RBCs in the urine. Urine culture is negative. The initial physical examination reveals an enlarged liver and spleen. Additional physical findings will most likely include:

a	*	A Kayser-Fleischer ring around the cornea
b		Hypopigmented (ash leaf) spots on the trunk
с		Telangiectasias in the fundi on retinal examination
d		Bilateral hearing loss
e		Generalized hyporeflexia
Se	e qu	estion Within 6 years of his initial visit, the patient returns with a pathologic fracture of his spine. Biopsy
rev	veals	s metastatic cancer. The source of the tumor is most likely the:
a		Cerebral hemisphere
b		Cerebellar hemisphere
с		Liver
d	*	Kidney
e		Spleen
А	6-m	onth-old child is noted to have head lag, tongue fasciculations, and bilateral abducens palsies. MRI scan
rev	veals	s a type 2 Chiari malformation. Which of the following defects would this child be likely to have?
a		A renal cyst
b		Pulmonary atelectasis
с	*	Spina bifida
d		Holoprosencephaly
e		A hepatic cyst
Α	7-ye	ear-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are
co	ncer	ned. The dermatologist tells them that their child has adenoma sebaceum. This disease is inherited in:
a		A sex-linked recessive pattern
b	*	An autosomal dominant pattern
с		An autosomal recessive pattern
d		A pattern most consistent with newly arising mutations
e		A pattern suggesting a mitochondrial gene defect
Se	e qu	uestion Calcifications evident on the skull x-ray or CT scan of a patient with this disease usually
rep	orese	ent:
a		Calcified subependymal glial nodules
b		Calcified meningeal adhesions
с		Meningeal psammoma bodies
d		Calcified astrocytomas
e	*	Calcified granulomas
Α	50-у	year-old man complaining of dizziness is found to have a cyst occupying 50% of his posterior fossa and
inc	comp	plete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus.
Hi	s lor	ngevity can be estimated to be:
a		Less than 3 months
b		Less than 1 year
С		Less than 5 years
d		Less than 10 years
e	*	Unaffected by this finding
Ma	any	children with Tay-Sachs disease develop blindness before they die, with retinal accumulation of
ga	nglio	osides that produces:
a	*	Cherry red spots
b		Chorioretinitis
c		Retinal detachments
d		Waxy exudates
e		Optic neuritis
Po	renc	cephaly usually develops as a consequence of:
a		Fetal alcohol syndrome
b	*	Vascular or other destructive injuries to the fetal brain
-	+ +	
d		Trisomy 21
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e		Dandy-Walker syndrome
In	Hirs	schenrung's disease neural crest cells fail to migrate normally early in fetal development and produce
not	tenti	ally fatal complications within months of birth because of disturbed:
2	*	Intestinal motility
a h		Pladder control
0		
C 1		Swallowing
a		Bile secretion
e		Cardiac rhythms
A	new	born infant has a cystic swelling at the base of the spine that is covered with hyperpigmented skin and
sor	ne c	coarse hair. Which of the following is the most likely explanation?
a		Mongolian spot
b		Spina bifida occulta
с		Nevus flammeus
d	*	Meningocele
e		Encephalocele
He	pato	osplenomegaly is most likely with:
a		Tay-Sachs disease
b	*	Niemann-Pick disease
С		Alpers' disease
d		Subacute necrotizing encephalopathy
е		Wilson's disease (hepatolenticular degeneration)
А	15-1	rear-old boy has moderate mental retardation, attention deficit disorder, a long face, enlarged ears, and
ma	cro	prchidism. Development has been steady but always at a delayed pace. The most likely cause for this
pat	ient	's low intelligence is which of the following?
<u>г</u>		Turner syndrome
b	*	Klinefelter syndrome
c		Fragile X syndrome
d		Reve syndrome
e		Tuberous sclerosis
W	ome	n carrying chromosomes for this disorder:
3	*	Are invariably normal
h h		Have mild retardation in about one-balf of cases
C C		Have high-arched palates and hypotelorism
d		Have huperextensible joints
u		Have prominent thumbs
e In	ILing	Have prominent munities
m		schispfung's disease, neural crest cens fan to inigrate normany early in fetal development and produce
poi	lenti	Interstinal meetiliter
a 1	*	
b	$\left \right $	Bladder control
C		Swallowing
d		Bile secretion
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sor	ne c	oarse hair. Which of the following is the most likely explanation?
a		Mongolian spot
b		Spina bifida occulta
с		Nevus flammeus
d	*	Meningocele
e		Encephalocele
At	age	5, a child is noted to have the loss of ankle jerks. At age 10, limb ataxia develops, followed by a
per	riphe	eral neuropathy. During adolescence, retinitis pigmentosa develops. Acanthocytosis is present. These are

all	cha	racteristic of which of the following?
a		Multiple sclerosis (MS)
b		Sickle cell disease
с	*	Abetalipoproteinemia
d		Progressive multifocal leukoencephalopathy (PML)
e		HIV subacute encephalomyelitis
Th	e se	cond cervical vertebra extends above the level of the foramen magnum and places the patient at high risk
of	havi	ing:
а		A meningoencephalocele
b		A myelomeningocele
с		Syringobulbia
d	*	Syringomyelia
e		Brainstem compression
In	viev	w of the unusually wide separation (double-barbed arrow) of caudal elements of the atlas from the
od	onto	id process, one should suspect:
а	*	Instability of the atlantoaxial joint
b		Hemorrhage into the atlantoaxial joint
с		Fusion of C2 to C3
d		Fracture of the odontoid process
e		Fracture of the C2 spinous process
Α	5-ve	ear-old boy has mental retardation, homonymous hemianopsia, and hemiparesis. He had infantile spasm
and	d sti	Il has epilepsy. Head CT reveals calcifications in the cerebral cortex in a railroad track pattern. Which of
the	fol	lowing does this child most likely have?
а		Glioblastoma multiforme
b		Oligodendroglioma
с		Acoustic schwannoma
d		Craniopharyngioma
e	*	Sturge-Weber syndrome
А	35-1	year-old woman has prenatal testing done. The testing reveals that her child will have phenylketonuria
(Pl	KU)	. With PKU, serum may exhibit dangerously high levels of:
a		Creatine phosphokinase (CPK)
b		Nicotinamide
с	*	Phenylketone
d		Lactate dehydrogenase
е		Phenylalanine
А	4-ye	ear-old previously healthy girl develops an intermittent red, scaly rash over her face, neck, hands, and
leg	s. 7	This is followed by developmental delay, emotional lability, and episodic cerebellar ataxia. She is
dia	Igno	sed with Hartnup's disease. Her condition may respond to large supplementary doses of:
a		Vitamin C
b	*	Nicotinamide
с		Thiamine
d		Pyridoxine
e		α tocopherol
He	pato	osplenomegaly is most likely with:
а	Î	Tay-Sachs disease
b	*	Niemann-Pick disease
с		Alpers' disease
d		Subacute necrotizing encephalopathy
e		Wilson's disease (hepatolenticular degeneration)
A	25-1	rear-old woman with epilepsy is taking divalproex sodium during the first trimester of pregnancy. She is
at slightly increased risk of having children with which of the following?		
a		Holoprosencephaly
L		

b	*	Defects of neural tube closure
с		Medulloblastoma
d		Agenesis of the corpus callosum
e		Kallmann syndrome
W	ith a	genesis of the corpus callosum, magnetic resonance imaging (MRI) will reveal:
a		Atrophy of the frontal lobes
b	*	Abnormally shaped lateral and third ventricles
c		Cerebellar aplasia
d		Schizencephaly
e		Encephaloclastic porencephaly
A	bov	has the onset of difficulty walking at 16 months. Reflexes are decreased. Over the course of several
ma	onthe	s, the patient becomes dysarthric and mental functioning decreases. Testing reveals that the patient has a
de	ficie	ncy of arylsulfatase A. Which of the following does this patient most likely have?
a		Sandhoff's disease
b		Tay-Sachs disease
c		Gaucher's disease
d	*	Metachromatic leukodystrophy
e	1 1	McArdle's disease
A	15-1	year-old box has moderate mental retardation attention deficit disorder a long face enlarged ears and
m	acro	precision by his moderate mental retardation, attention denote disorder, a long race, emarged cars, and precision precision of the precision o
na	tient	's low intelligence is which of the following?
pu a		Turner syndrome
h	*	Klinefelter syndrome
c		Fragile X syndrome
d		Reve syndrome
u e		Tuberous sclerosis
Δ	35-v	rear-old man complains of stumbling and slurred speech. His problem started several months ago and has
nr	ogreg	seed slowly but consistently. On neurologic examination he is found to have scanning speech
nv	stag	mus limb dysmetria, and kinetic tremor. His intellectual function is normal The most appropriate initial
inv	vesti	gation is:
a		Lumbar puncture
b		Serum drug screen
c		Routine urinalysis
d	1 1	Posterior fossa myelogram
e	*	Precontrast CT scan
Ar	int	fant has a head CT performed because of a large head and failure to thrive. The diagnosis of
hv	droc	rephalus is made. Congenital hydrocephalus may develop as a consequence of which first-trimester
ma	atern	al disorder?
а		Complicated migraine
b	*	Viral infection
c		Pseudotumor cerebri
d		Chorea gravidarum
e		Intervertebral disk herniation
Se	e au	estion Uncorrected congenital hydrocenhalus will usually produce which of the following?
3		Dolichocenhaly
h		Brachycenhaly
C		Holoprosencenhaly
4	*	Macrocenhaly
u o	$\left \right $	Microcenhaly
Δ	6.m	onth-old child is noted to have head lag tongue fasciculations, and hilateral abducans palsies. MPI scen
	0-1110 مادمر	a type 2 Chiari malformation. Which of the following defacts would this child be likely to have?
101		A repel evet
я		

b		Pulmonary atelectasis
с	*	Spina bifida
d		Holoprosencephaly
e		A hepatic cyst
Α	7-ye	ar-old boy is taken by his parents to see a dermatologist. They have noticed nodules on his face and are
coi	ncer	ned. The dermatologist tells them that their child has adenoma sebaceum. Adenoma sebaceum of the face
is e	espe	cially common with which of the following diseases?
а		Neurofibromatosis
b		Sturge-Weber syndrome
с	*	Tuberous sclerosis
d		Ataxia telangiectasia
e		Fragile X syndrome
A	50-v	rear-old man complaining of dizziness is found to have a cyst occupying 50% of his posterior fossa and
inc	com	blete fusion of the cerebellar elements inferiorly. There is no evidence of an obstructive hydrocephalus.
His	s lor	agevity can be estimated to be:
а		Less than 3 months
b		Less than 1 year
c		Less than 5 years
d		Less than 10 years
e	*	Unaffected by this finding
See	e au	estion The treatment of choice for children with infantile spasms is:
a	e qu	Carbamazenine (Tegretol)
h		Phenobarbital
c		Phenytoin (Dilantin)
d		Divalproex sodium (Denakote)
u e	*	Adrenocorticotropic hormone (ACTH)
Th	e ne	where infant with motor neuron disease is likely to exhibit:
2111		Seizures
a h	*	Hypotonia
0		Hypotoma
d		Moro reflexes
u o		Spine bifide
	nv	spilla official second discusses develop blindness before they die with ratingle accumulation of
	any aglie	conducts with Tay-Sachs disease develop bindiness before they die, with retinal accumulation of
gai	igne	Cherry red spots
a h		Cherioretinitie
0		Detinel detechments
C d		Were evidence
a		Ontia nouvritia
e Th		Optic neuritis
111 no1	e pa	and the parents do not really understand what this many. As part of your explanation, you tall them that
	isy, i	and the parents do not rearry understand what this means. As part of your explanation, you ten them that
cer	eora	Deficite de not enneer ofter hirth
a h	*	The injury to the brain does not measured
D		Affected nervous fail to reach any developmental milestones on time
с 1		Affected persons have resting tramers
a	$\left \right $	The EEC symbols have resulting trentions
e		The EEG exhibits a disorganized background mythin
A	o-ye	car-old child is brought to the neurologist because of developmental delay. Her morphological features
are typical and chromosome analysis confirms a diagnosis of Down syndrome (trisomy 21). The brain of this		
pat	uent	Is expected to be:
a 1.	-1-	Smaller man normal for age and body size
D		Larger than normal for age and body size

d Hydrocephalic e Excessively convoluted Porencephaly usually develops as a consequence of: a a Fetal alcohol syndrome b * Vascular or other destructive injuries to the fetal brain c Trisomy 13 d Trisomy 21 e Dandy-Walker syndrome What percentage of patients with tuberous sclerosis have mental retardation? a 1 b 10 c 25 d *
e Excessively convoluted Porencephaly usually develops as a consequence of: a Fetal alcohol syndrome b * Vascular or other destructive injuries to the fetal brain c Trisomy 13 d Trisomy 21 e Dandy-Walker syndrome What percentage of patients with tuberous sclerosis have mental retardation? a 1 b 10 c 25 d * 5
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b * Vascular or other destructive injuries to the fetal brain c Trisomy 13 d Trisomy 21 e Dandy-Walker syndrome What percentage of patients with tuberous sclerosis have mental retardation? a 1 b 10 c 25 d * 65
c Trisomy 13 d Trisomy 21 e Dandy-Walker syndrome What percentage of patients with tuberous sclerosis have mental retardation? a 1 b 10 c 25 d *
d Trisomy 15 d Trisomy 21 e Dandy-Walker syndrome What percentage of patients with tuberous sclerosis have mental retardation? a 1 b 10 c 25 d *
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What percentage of patients with tuberous sclerosis have mental retardation? a 1 b 10 c 25
a 1 b 10 c 25
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
$\begin{array}{c c} c & 25 \\ \hline \end{array}$
C = 23
e 99
A child is born to a 19-year-old woman who has had two to eight drinks per day throughout her pregnancy
What is the major pathologic effect of alcohol on the central nervous system of the developing fetus?
a Cerebral ischemia
b Periventricular hemorrhage
c Macrocephaly
d * Impaired neuronal migration
e Holoprosencephaly
A 37-year-old man has an MRI performed by his primary care doctor because of a long history of headaches. I
is notable only for the finding of a type 1 Chiari malformation. He is sent to a neurologist for further evaluation
A type 1 Chiari malformation usually becomes symptomatic as which of the following in adults?
a Epilepsy
b Hydrocephalus
c * Ataxia
d Dementia
e Psychosis
A 25-year-old mother develops an illness during pregnancy. A diagnosis of cytomegalovirus (CMV) infection
is made by serology. Prenatal CMV infections may produce which retinal disturbance?
a * Chorioretinitis
b Cherry red spot
c Microaneurysms
d Hypervascularity
In Uirschammung's discosed neural areat calls foil to migrate normally early in fatal development and produce
In Hischsprung's disease, neural crest cens fail to migrate normany early in retai development and produce
potentiarly fatal complications within months of birth because of disturbed.
a * Intestinal mounty
b Bladder control
c Swallowing
d Bile secretion
e Cardiac rhythms
In Hirschsprung's disease, neural crest cells fail to migrate normally early in fetal development and produce
potentially fatal complications within months of birth because of disturbed:
a * Intestinal motility
b Bladder control
c Swallowing
d Bile secretion
e Cardiac rhythms
A newborn infant has a cystic swelling at the base of the spine that is covered with hyperpigmented skin and

som	le c	oarse hair. Which of the following is the most likely explanation?
а		Mongolian spot
b		Spina bifida occulta
с		Nevus flammeus
d	*	Meningocele
e		Encephalocele
At a	age	5, a child is noted to have the loss of ankle jerks. At age 10, limb ataxia develops, followed by a
peri	phe	eral neuropathy. During adolescence, retinitis pigmentosa develops. Acanthocytosis is present. In this
diso	orde	er, chylomicrons, very-low-density lipoprotein (VLDL), and low-density lipoprotein (LDL) are largely
abse	ent	in the serum as a consequence of a mutation in which gene?
a	*	Microsomal triglyceride transfer protein (MTP)
b		Huntingtin
c		Amyloid precursor protein
d		Dystrophin
e		Transfer RNA (tRNA)
The	se	cond cervical vertebra extends above the level of the foramen magnum and places the patient at high risk
of h	avi	ng:
a		A meningoencephalocele
b		A myelomeningocele
с		Syringobulbia
d	*	Syringomyelia
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A 4	-ye	ear-old previously healthy girl develops an intermittent red, scaly rash over her face, neck, hands, and
legs	. Т	This is followed by developmental delay, emotional lability, and episodic cerebellar ataxia. She is
diag	gno	sed with Hartnup's disease. Her condition may respond to large supplementary doses of:
a		Vitamin C
b	*	Nicotinamide
c		Thiamine
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Wit	h a	genesis of the corpus callosum, magnetic resonance imaging (MRI) will reveal:
a		Atrophy of the frontal lobes
b	*	Abnormally shaped lateral and third ventricles
с		Cerebellar aplasia
d		Schizencephaly
e		Encephaloclastic porencephaly
A 1	5-v	vear-old boy has moderate mental retardation, attention deficit disorder, a long face, enlarged ears, and
mac	roc	prchidism. Development has been steady but always at a delayed pace. Women carrying chromosomes
for t	this	disorder:
a	*	Are invariably normal
b		Have mild retardation in about one-half of cases
c		Have high-arched palates and hypotelorism
d		Have hyperextensible joints
e		Have prominent thumbs
A 3	5-v	ear-old man complains of stumbling and slurred speech. His problem started several months ago and has
prog	gres	ssed slowly but consistently. On neurologic examination, he is found to have scanning speech.
nyst	tagi	mus, limb dysmetria, and kinetic tremor. His intellectual function is normal. Admission studies include a
hem	ato	porties of 55% and a routine urinalysis, which reveals excess protein and some RBCs in the urine. Urine
culture is negative. The initial physical examination reveals an enlarged liver and spleen. Additional physical		
find	ing	s will most likely include:
a	*	A Kayser-Fleischer ring around the cornea
b		Hypopigmented (ash leaf) spots on the trunk
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ee question Within 6 years of his initial visit, the patient returns with a pathologic fracture of his spine. Biops
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Cerebellar hemisphere
Liver
* Kidney
Spleen
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* Spina
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A hepatic cvst
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* An autosomal dominant pattern
An autosomal recessive pattern
A pattern most consistent with newly arising mutations
A pattern suggesting a mitochondrial gene defect
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Trisomy 13
Trisomy 21
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pot	tenti	ally fatal complications within months of birth because of disturbed:
а	*	Intestinal motility
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с		Swallowing
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A	new	born infant has a cystic swelling at the base of the spine that is covered with hyperpigmented skin and
sor	ne c	coarse hair. Which of the following is the most likely explanation?
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He	pato	osplenomegaly is most likely with:
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d		Subacute necrotizing encephalopathy
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Α	15-y	year-old boy has moderate mental retardation, attention deficit disorder, a long face, enlarged ears, and
ma	cro	orchidism. Development has been steady but always at a delayed pace. The most likely cause for this
pat	ient	's low intelligence is which of the following?
a		Turner syndrome
b	*	Klinefelter syndrome
с		Fragile X syndrome
d		Reye syndrome
е		Tuberous sclerosis
We	ome	n carrying chromosomes for this disorder:
а	*	Are invariably normal
b		Have mild retardation in about one-half of cases
с		Have high-arched palates and hypotelorism
d		Have hyperextensible joints
e		Have prominent thumbs
Th	e di	encephalon consists of all of the following structures except:
а		Thalamus
b		Subthalamus
c	*	Pons
d		Putamen
e		All of the above
WI	nich	subclavian artery would you inject with contrast to demonstrate both the carotid and vertebral
cir	cula	tion?
a		Left subclavian
b	*	Right subclavian
c		Neither, you cannot see both the carotid and vertebral circulation
d		Either, you can see both the carotid and vertebral circulation with either subclavian artery
e		All of the above
An	eni	dural hemorrhage results in a tear in what vessel?
8	-1	Bridging veins
h	*	Middle meningeal artery
c	$\left \right $	Anterior choroidal artery
d	$\left \right $	None of the above
P		All of the above
Č		

Occl	lusi	ion of which area of the circle of Willis will result in total unilateral blindness?
a '	*	Ophthalmic artery
b		Anterior choroidal artery
с		Vertebral artery
d		Anterior spinal artery
e		All of the above
Hem	nise	ection of the spinal cord at the level of T1 actually produces contralateral loss of pain/temperature
sensa	atio	on at what level?
a		T1
b		T2
c *	*	T3
d		C7
e		All of the above
A 35	5-ye	ear-old male presents with bilateral paralysis, fasciculations, and muscle atrophy at and below T1 along
with	bil	lateral pain and temperature loss at the level of TWhat is the cause of his symptoms?
a		Middle cerebral artery (MCA) stroke
b		Carbon monoxide poisoning
c *	*	Syringomyelia
d		Amyotrophic lateral sclerosis (ALS)
e		None of the above
Com	nmo	on causes of carpal tunnel syndrome include all of the following except:
a		Rheumatoid arthritis
b		Diabetes mellitus
с		Acromegaly
d		Pregnancy
e '	*	All of the above are possible causes of carpal tunnel syndrome
Whie	ch	one of the following carries the majority of the information from the outside into the cerebellum?
a		Granule cells
b		Basket cells
c '	*	Mossy fibers
d		Dentate nucleus
e		All of the above
Deje	erin	e-Roussy syndrome can be associated with?
a		Lesion in the oculomotor nerve
b		Lesion in the left occipital lobe
c '	*	Lesion in the ventral posterior area of the thalamus
d		Lesion in the lateral geniculate nucleus
e		All of the above
Klüv	ver-	-Bucy syndrome is associated with which disease?
a '	*	Pick's disease
b		Guillain-Barré syndrome
с		Grave's disease
d		Lambert-Eaton syndrome
e	T	None of the above
A 4	2-1	year-old male with a history of alcoholism presents to the hospital with confusion, diplopia
(oph	tha	almoparesis), unsteady gait, and nystagmus. The most likely cause for these symptoms is thiamine
defic	cier	ncy.Where is the lesion?
a		Edinger-Westphal nucleus
b *	*	Mamillary bodies
b '	*	Mamillary bodies Left parietal lobe
b * c d	*	Mamillary bodies Left parietal lobe Nucleus solitarius

W	hich	of the following is true regarding a lesion of the right vestibular nuclei?
a		The left paramedian pontine reticular formation (PPRF) is more active than the right PPRF
b		The fast phase of nystagmus is to the right
с		Stumbling to the left
d	*	The left lateral vestibulospinal tract is more active than the right
e		Slow phase of nystagmus to the left
W	hich	of the following statements is not true?
a		Weakness is the least common sign of a cerebellar lesion
b		Golgi cells in the cerebellum lie in the granule cell layer and are excitatory
с	*	Basket cells in the cerebellum excite Purkinje cell firing
d		Fastigial nucleus receives input from Purkinje cells in the cerebellum
e		All of the above
W	hich	of the following statements is TRUE?
а		Nerve root C3 exits above vertebra C3
b		A C6 radiculopathy results in pain from the dorsal aspect of the thumb and index finger
с		A C7 radiculopathy results in pain in the middle finger
d		Spinal nerve C7 exits below vertebra C6
e	*	All are true statements
A	com	plete transection of the spinal cord at C2 results in a spastic bladder immediately after the injury (during
spi	inal	shock).
a		True
b	*	False
W	hich	of the following statement(s) is true?
a		The supplementary motor area (SMA) and premotor cortex (PM) are both in Brodmann's area 6
b		The SMA and PM are both involved in premotor planning
c		Primary motor cortex is involved in the execution of a movement
d		Pyramidal tract neurons fire before the muscles contract in an intended movement
e	*	All of the above are true
W	hich	of the following statements is false?
a		The SMA becomes active when thinking of a complex motor task even when the task is not actually
		performed
b		The neurons in the SMA and primary motor cortex fire prior to a given movement
c		Lesions in the SMA result in apraxias, whereas lesions in primary motor cortex result in contralateral
-		paresis and upper motor neuron signs
d	*	Both the SMA and primary motor cortex code for the force of a movement
e		All of the above
A	60-	vear-old male presents with a stroke in the left occipital lobe, and a 72-vear-old male presents with
co	ntro	led glaucoma for 1 year. Which patient will have worse visual acuity?
a		The stroke patient
b		The glaucoma patient
с	*	Neither
d	1	Both
e		All of the above
W	hich	of the following structures is not paired correctly with all or part of its blood supply?
а		Anterior limb of internal capsule—medial striates
b		Dorsal part of the posterior limb of internal capsule—middle cerebral
с	1	Visual cortex—posterior cerebral
d		Broca's motor speech area—middle cerebral
e	*	Hippocampus—anterior cerebral
A	lesic	on in the frontal association cortex on the left would most likely result in:
2		Ipsilateral homonymous hemianopsia
h	-	Resting tremor
	1	

a Project's sphasia c Diplopia A lesion of the ventromedial nucleus of the hypothalamus (which lies in the tuberal level) has been shown (in experimental animals) to produce: a Diabetes insipidus b * b * c Loss of appetite d Memory loss and aphasia e Loss of appetite d Memory loss and aphasia e Lack of prolactin production Bilateral lesions of the ventral portion of the temporal lobes involving the hippocampal formation would most likely result in patients exhibiting which of the following signs and symptoms? c Loss of the sensation of pain, without loss of pain sensitivity or discrimination d Long-term memory loss The mannilary bodies: - a Are damaged in korsakoff's syndrome b Receive input from the formix c Project to the medial dorsal nucleus of the thalamus d Ar anage in korsakoff's syndrome b Receive input from the formix c Project to the medial dorsal nucleus of the thalamus d Are involved in tengulating cir	с		Wernicke's aphasia
e Diplopia A lesion of the ventromedial nucleus of the hypothalamus (which lies in the tuberal level) has been shown (in experimental animals) to produce: a Diabetes insipidus b* Increased appetite (hyperphagia) and rage c Loss of appetite d Memory loss and aphasia e Lack of prolactin production Bilateral lesions of the ventral portion of the temporal lobes involving the hippocampal formation would most likely result in patients exhibiting which of the following signs and symptoms? a Difficulty expressing their thoughts b Trouble understanding speech and also trouble with verbal expression c Loss of the sensation of pain, without loss of pain sensitivity or discrimination d Long-term memory loss a Are damaged in korsakoff's syndrome h Receive input from the fornix c Project to the medial dorsal nucleus of the thalamus d Are damaged in korsakoff's syndrome h Receive input from the fornix c Project to the medial dorsal nucleus of the thalamus d Are involved in temperature regulation i It is involved in regulating of wat	d	*	Broca's aphasia
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b Thalamus c * Suprachiasmatic nucleus d Pons	a		Reticular activating system
c * Suprachiasmatic nucleus d Pons	b		Thalamus
d Pons	с	*	Suprachiasmatic nucleus
	d		Pons

0		All of the shows
	hich	All of the following statements is not true recording service in?
VV I		Call badies lie in the substantic right and innersute the sorten and limbic system
a 1	Ť	Cell bodies lie in the substantia nigra and innervate the cortex and limbic system
b		It is increased by monoamine oxidase inhibitors and tricyclics
С		It is likely decreased in impulsive individuals
d		It is kept in synaptic cleft longer by fluoxetine
e		It is produced in raphe nuclei
Th	e tul	beromammillary nucleus is the only location in the brain that produces histamine
а	*	True
b		False
Th	e se	vere short-term (explicit) memory deficits characteristic of Alzheimer's disease would most likely be due
to:		
а	*	Plaques and tangles in the hippocampal regions
b		Neurofilaments and tau protein in basal ganglia
с		Degeneration of the ventral tegmental area
d		Loss of norepinephrine in the amygdala
е		All of the above
Α	65-1	year-old female presents with headache, fever, and occasional jaw claudication. What is the most likely
cai	ise?	
а		Left MCA stroke
b		Tension headache
c		Trigeminal neuralgia
d	*	Temporal arteritis
u A		All of the above
	hich	cranial nerve is affected in the syndrome known as tic doulourous?
•••		CN II
a h	*	
0		
с 4		
a		
e II-		UNIV
HC	rner	s syndrome is often associated with which one of the following?
a 1	Ŷ	Cluster headache
b		Multiple sclerosis
С		Lyme disease
d		Anton's syndrome
e		All of the above
Α	73-у	year-old female presents with symptoms consistent with amaurosis fugax. Which vessel is most likely
inv	olve	ed?
a		Vertebral artery
b		PCA
с	*	Ophthalmic artery
d		Central retinal vein
e		Lenticulostriate artery
A	93-y	year-old male presents with left leg weakness, irritability, and mood disturbance that occurred suddenly
thi	s mo	orning. Which artery is most likely involved?
a		Right anterior choroidal artery
b		Left anterior cerebral artery
с		Left middle cerebral artery (MCA)
d		Right posterior cerebral artery
e	*	None of the above
Ā	67-1	vear-old right-handed male presents to the emergency department (ED) with decreased consciousness
on	btha	Imoplegia, pupillary constriction, and bilateral paralysis. Which artery or arteries would most likely be

inv	olv	ed?
a		Left posterior cerebral artery
b	*	Basilar artery
С		Bilateral anterior cerebral arteries
d		Bilateral external carotid arteries
e		All of the arteries above could cause these symptoms
Α	36-י	vear-old female with a congenital berry aneurysm of the circle of Willis may also have one of the
fol	low	ing?
а		Ulcerative colitis
b		Polycystic ovarian syndrome
С		Turner's syndrome
d	*	Polycystic kidney disease
e		Abdominal aortic aneurysm
A	54-1	year-old male with a history of hypertension presents with sudden onset of hemiballistic movements of
his	rig	the upper extremity. If these symptoms were due to a stroke, the most likely location and artery involved
wo	uld	be?
а		Thalamus: MCA
b	*	Subthalamic nucleus: posterior cerebral artery
c		Genu of the internal capsule: anterior choroidal artery
d		Caudate: MCA
e		None of the above
Δ	28-v	rear-old right-handed male presents to the FD with confusion and headache. A computed tomography
(C')	20 ς Γ) ς	ican of the head is performed and reveals hydrocenhalus. This condition may be associated with an
	-rnr	oduction of cerebrospinal fluid (CSF) which would be associated with which structure?
2	- ipi	Meninges
h	*	Choroid plexus
0		Environ piezus
d		Foramen of Magendia
u o		All of the above
	35 .	An of the above
A .	n of	f his head an enjoyral hemorrhage is noted. What is the most likely vessel involved?
300		External carotid artery
a h	*	Middle meningeal artery
0		Antonion chonoidal arteny
C J		Dridaina usin
a		
e	0.4	
An Th	. 84-	year-old male with a history of a right MCA territory stroke about 6 months ago presents to your office.
In	e na	Substitutes on ms examination could include all of the following except?
a 1	4	Spastic paralysis
D	Ť	rasciculations
C		Hyperreilex1a
d		No significant muscle atrophy
e		All of the above
A	78- <u>y</u>	year-old female presents with a history of polio and has residual lower extremity weakness, atrophy,
tas	cicu	llations, and hyporeflexia. Where did the polio virus cause the damage?
a		Dorsal root ganglion
b	*	Anterior horn cells
С		C2 spinal root
d		Lumbosacral plexus
e		None of the above
An	18-	year-old male presented to the ED after a recent MVA and hemisection of his spinal cord at TAt what
lev	el w	vould he have pain and temperature loss?

а		T1
b		T2
с	*	T4
d		C7
e		None of the above; pain and temperature would be preserved
A	54-y	year-old male presented to the clinic with recent damage to his S2 and S3 nerve root. What is the most
lik	ely a	autonomic system that is involved?
а		Sympathetic
b	*	Parasympathetic
с		Both are involved
d		Neither are involved
e		All of the above
W	hich	pathway connects the hippocampus, hypothalamus, thalamus, and the cortex?
а		Gatz pathway
b	*	Papez circuit
с		Mendel circuit
d		Klüver-Bucy pathway
e		All of the above
Th	e pa	rasympathetic system has what kind of effect on the adrenal medulla?
а		It stimulates the secretion of adrenaline via cholinergic fibers
b		It stimulates the secretion of the rennin-angiotensin system
с	*	It has no significant effect
d		It increases aldosterone production
e		All of the above
Th	e sy	mpathetic system exerts its affects on the lungs by:
а		Constricting the bronchial tubes
b		Stimulating bronchial gland secretion
с		Increasing carbon dioxide production
d	*	Dilating the bronchial tubes
e		All of the above
Α	32-y	year-old female presents with episodes of high blood pressure, sudden fevers, and vomiting without an
inf	ectio	ous etiology. She also states her eyes are dry, and she has decreased ability to form tears. She is very
anz	xiou	s and occasionally irritable. She states there may be someone in the family with similar complaints but is
no	t sur	e. What is the most likely diagnosis?
а		A variant of Guillain-Barré syndrome
b		Charcot-Marie-Tooth disease type Va
с	*	Riley-Day syndrome
d		Korsakoff's syndrome
e		None of the above
Co	nge	nital central hypoventilation syndrome (CCHS) is sometimes associated with what abnormality?
а		Shoulder dystocia
b	*	Absence of parasympathetic ganglion cells in the colon
с		Diabetes insipidus
d		Horner's syndrome
e		All of the above
А	72-у	year-old male presents with weakness and decreased sensation in his left leg up to his hip as well as
hy	perr	eflexia. What is the most likely cause?
a	*	Right anterior cerebral artery occlusion
b		Left MCA occlusion
c		Left posterior cerebral artery occlusion
d		Right superior cerebellar artery occlusion
e		None of the above

A 64-year-old female presents with bilateral upper and lower extremity muscle atrophy, fasciculations, and hyperreflexia. What is the most likely etiology? Guillain-Barré syndrome a * b ALS с Tertiary syphilis d Brown- Séquard syndrome Syringomyelia e A 57-year-old male veteran presents with a history of severe pain in both lower extremities, decreased proprioception up to the hip, and a positive Romberg's sign. What is the most likely cause of his symptoms? Left thalamic infarct a Polio b с Diabetic polyneuropathy * Tertiary syphilis d Cerebellar infarct e A 39-year-old female presents after an MVA with bilateral shoulder and arm numbness. She has decreased pain and temperature in the shoulder and arms, but light touch and proprioception is intact. What is likely the cause? Pernicious anemia a Copper metabolism defect b Cytomegalovirus (CMV) radiculitis с * Syringomyelia d Brown-Séquard syndrome e A 23-year-old female presented with a rapid onset of weakness that started in her feet and moved up her body. She complained of having diarrhea about 2 weeks ago. Which one of the following is associated with this condition? a Anti-GAD ab b Anti-Hu ab * Campylobacter jejuni с d Anti-Ma ab Clostridium difficile e A 72-year-old male presented with onset of pain, numbness, and tingling around both gluteal regions and atrophy. The patient also stated that he had become impotent. What is the likely location of his lesion? L1-L4 a * S2–S4 b C3–C5 с d Lumbosacral plexus None of the above e A 56-year-old female suddenly developed left severe neck pain, tongue deviation to the left, right-sided paralysis, loss of proprioception on the right side, and hyperreflexia. Pain and temperature were intact throughout. What is the likely location of the lesion? Left C5 nerve root a * Left medulla b **Right thalamus** с Left globus pallidus d All of the above e A 45-year-old male with chronic alcohol use presented with a seizure. In the ED, he was given D5NaCl solution and lorazepam. A head CT scan was performed, which was negative for any acute pathology. The patient then progressed and started to have amnesia of his current visit but had retained all his previous memory. He also started making up answers to questions that were not true. What is the most likely location of his lesion and what is the cause? Occipital lobe; B12 deficiency a b Left temporal lobe; lorazepam * Bilateral mamillary body; thiamine deficiency с d Reticular activating system; niacin deficiency

e		None of the above
Wl	hich	of the following groups is paired incorrectly?
a		CN XII lesion; tongue deviates toward the side of the lesion
b	*	CN V motor lesion; the jaw deviates away from the side of the lesion
с		Cerebellar lesion; falls toward the side of the lesion
d		CN X lesion; uvula deviates away from the side of the lesion
e		CN XI lesion; head turns to the same side of the lesion
WI	hat r	oath connects Wernicke's to Broca's area?
а		Longitudinal fasciculus
b	*	Arcuate fasciculus
с		Cingulate gyrus
d		Brodmann's area 44
e		Splenium of the corpus callosum
Α	63-1	vear-old female presents to her ophthalmologist with complaints of being unable to see anything in her
lef	t up	per quadrant. Where is the lesion located?
a	r	Right optic tract
h		Left lateral geniculate body
c		Right calcarine fissure
d	*	Right Mever's loon
e		Ontic chiasm
W	hich	artery occlusion would cause the classic "lacunar" syndromes?
3		Anterior inferior cerebellar artery
a h		PCA
C C	*	Lenticulo-striate artery
d		Vertebral artery
u o		None of the above
	hich	of the following is the most important risk factor for Alzheimer's Disease?
0	*	A ge
a h		Age Down syndrome
0		Eamily history
с 		Family instory
u o		None of the showe
	hiah	of the following is associated with "locked in syndrome"?
VV I	Inch	AT S
a h		ALS Control monting myslinglygic
D		Ventral pontine myelinolysis
C d		Vertebrai artery dissection
a	*	A D and C
e Nu	- 1 - I	A, B and C
Ine	0108	gisms are part of which of the following?
a 1	*	Motor apnasia
b	ŕ	Receptive aphasia
C 1		I ranscortical motor aphasia
d		Lewy body dementia
e		All of the above
A	34-y	year-old male presents with intermittent dizziness, nausea, vomiting, and hearing loss. The patient also
COI	mpla	ains of ear fullness and ringing in his ear. What is the most likely etiology?
a		Irauma
b		Syphilis
C	<u> </u>	Idiopathic
d	*	All of the above
e		None of the above
Wl	hat i	s the most common cranial neuropathy associated with berry aneurysm?

a		CN II
b	*	CN III
с		CN IV
d		CN X
e		All of the above
W	hat i	s the major difference between a subdural hematoma and an epidural hematoma on CT scan?
а		The subdural hematoma will look isodense
b	*	The epidural will have a lens-shaped convex hyperdensity
с		The subdural will have a crescent-shaped concave hypodensity
d		There is no difference shown by CT scan to distinguish the two
е		None of the above
An	87	-year-old male presents to your clinic with resting tremor in both hands, stooped posture, and masked
fac	eies.	What is the most likely cause of his symptoms?
а		Serotonin depletion in the raphe nucleus
b	*	Dopamine depletion in the substantia nigra
с		Copper depletion in the reticular activating system
d		B12 deficiency
e		None of the above
Α	56-1	year-old male presents with hearing loss, tinnitus, vertigo, and disequilibrium. Which of the following
col	uld ł	be a potential cause?
а		Excessive growth of astrocytes
b	*	Excessive growth of Schwann cells
с		Acetazolamide therapy
d		Cavernous sinus thrombosis
e		None of the above
А	34-v	year-old male presents with a long-standing history of abnormal movements, aggressive behavior, and
me	emoi	y difficulties. There is a strong family history of similar symptoms, and his father had committed suicide
at	age	The patient is extremely irritable and demonstrates antisocial behavior. What would be the most likely
fin	ding	g on magnetic resonance imaging (MRI)?
a		Hydrocephalus
b		Frontal lobe infarct
c		Arnold-Chiari malformation
d	*	Diffuse atrophy; more prominent in the caudate and putamen
e		None of the above
A	74-y	year-old male with a history of cancer presents with new-onset seizures and focal deficits on his left side
tha	it ha	ve gradually worsened. His cancer had been in remission but has spread to his liver and bone. He had an
M	RI o	f his brain, which demonstrated multiple lesions consistent with metastatic disease. They were primarily
loc	atec	at the gray-white junction. What type of cancer does the patient most likely have?
а		Squamous cell carcinoma
b	*	Small cell carcinoma of the lung
c		Meningioma
d		Prostate carcinoma
e		Leukemia
A	54-y	year-old male presents in a coma. He is found to have a severe subarachnoid bleed with left-sided uncal
her	rniat	ion. What is the most likely examination finding to confirm this?
a		Right-sided paralysis
b		Left-sided paralysis
c	*	Left mydriatic pupil; this is nonreactive
d		Right miotic pupil
e		Tongue deviation to the right
A	74-y	rear-old male presented with a history of resting tremor in his right hand, rigidity of his lower extremities,
slo	wg	ait, and occasional falls. Which of the following could not have caused this man's symptoms?

a		History of encephalitis
b		Manganese ingestion
с	*	Ethylene glycol
d		History of anoxic brain injury
e		Metoclopramide
A	67-v	vear-old female presents with a 3-week history of headaches and low-grade fever. She states she has had
sca	ln te	enderness over her left eve and occasional jaw claudication. The reason she came into the hospital now is
tha	t sh	e has lost vision in her left eve. Which vessel is the cause of her symptoms?
a		Left ophthalmic artery
b		Right carotid artery
C	*	Left central retinal artery
d		Left central retinal vein
e		Left MCA
	34-v	ear-old male presents with rapid onset of diplopia difficulty swallowing and weakness that started in his
arn	ne ai	nd progressed downward. His pupils are dilated and non-reactive. You find out that he had recently eaten
an	an o	f soup that caused some diarrhea the day prior. What is the most likely cause of his symptoms?
ac	*	Difficulty for acetylcholine to be released
h		Difficulty for acetylcholine to bind to the postsynaptic area
C		Difficulty for norepipephrine reuntake
d		Poor ATP release
u o		Defactive glucose metabolism
	60 t	ver old male presented with a 5 year history of progressive anothy emotional lability inappropriate
A bal	09-y	or and difficulty balancing his checkbook. He also stopped playing golf which was his favorite bobby
	M	RI demonstrated atrophy marked in the temporal region and frontal region. What is the pathologic
hal	lma	rk for this disease?
1141	1111a *	Argentophilic nick bodies
a h		Neurofibrillary tangles
0		Spongiform changes to the gray matter
d		Loss of donamine cells in the substantia nigra
u A		Hippocempal atrophy bilaterally
Δ	82-1	rappocality and all one-standing history of dementia has been placed on an acetylcholinesterase.
inh	02- ibit	or with some improvement of his symptoms. The area of the brain most likely involved is:
1111 9		Caudate
a b		Papha nucleus
0	*	Nucleus basalis of Maynert
с 		Prodmann's area 41
u o		Edinger Westphal nucleus
	10 v	Eulinger-westpliat nucleus
A 4	+>-y	an evamination, she has a vasicular rash on her left as and sensoring less, included left, as well
uay	ys. C Ioft	face weakness. What is the most likely diagnosis?
as.		Carcinomatous maningitis
a h	*	Ramsay Hunt syndrome
0		HHV_6
d		HTI V-1
u A		None of the above
Δ	<u>77</u>	vear-old man with a history of HIV presents with 3 weeks of dysarthria and progressive left sided
	∠/-j akn/	ass. He has been noncompliant with his antiretroviral medications. His last CD4 count was An MPI brain
we	an d	emonstrated large confluent areas of T2 hyperintensities in the subcortical white matter bilatorally
sca	ur u neiot	ent with severe demyelination Diffusion weighted images were negative. An LD was performed and
der	1515l	strated normal opening pressure normal cell count glucose and protein CSE polymerase chain reaction
	ווטוו קר	for John Cunningham (IC) virus was positive. What is the most likely location of this virus?
21)		A strocytes
a h	$\left \right $	Macrophages
υ		Macrophages

с		Schwann cells
d	*	Oligodendrocytes
e		Basket cells
A	60-1	vear-old man with a history of untreated venereal disease complains of sudden lancinating pain in both
leg	is. C	On examination, the patient has unequal pupils. The involved pupil does not react to light but constricts
du	ring	accommodation. Sensory examination reveals decreased vibration and joint position sense. The patient
exl	hibit	ted a mild decrease in sensation to pinprick and temperature. Absent reflexes and a wide-based gait were
der	mon	strated. Laboratory findings showed that his rapid plasma regain was positive and FTA-ABS was also
pos	sitiv	e. An LP demonstrated increased lymphocytes, elevated protein, and positive Venereal Disease Research
La	bora	atory results (VDRL) in the CSF. The patient's eye findings are known as:
a		Marcus-Gunn pupil
b		Adie's pupil
с	*	Argyll-Robertson pupil
d		tonic pupil
e		There is no known name for his eye findings
A 4	43-1	rear-old right-handed woman presents with a 6-month history of numbress and tingling in her right hand
(pa	artic	ularly in her first three digits). She denies any symptoms in her palm or her fourth or fifth digit. She types
all	dav	at a computer and states her symptoms are worse at night and when she wakes up in the morning. What
is t	he r	nost likely location of her problem?
a		Anterior cruciate ligament
b	*	Flexor retinaculum
с		Antecubital fossa
d		Right brachial plexus
e		C6 root
A	75-1	rear-old woman presents with an unsteady gait, generalized weakness, fatigue, and a burning sensation in
her	tor	ngue. On examination, she is found to have bilateral weakness and decreased positional sense in her legs
mc	ore t	than her arms. She has diminished reflexes and a positive Babinski reflex. She also has a positive
Ro	mbe	erg's test. Which of the following conditions is associated with her problem?
a	*	Atrophic gastritis
b		Decreased ferritin
c		Abnormal copper metabolism
d		Niacin deficiency
e		Elevated homocysteine
W	hat i	s the most common cranial nerve palsy associated with subarachnoid hemorrhage?
a		CN II
h		CN IV
C		CN VI
d	*	CN III
e		All cranial nerves can be equally involved
Δ	34-3	ver-old woman presents with an acute onset of vertigo nausea, and vomiting. She also complains of pain
and	J – y 1 nu	umbress on the right side of her face as well as difficulty with swallowing. On examination, she falls to
the	rio	ht and has decreased nain and a decrease in the left hand's skin temperature. She has nystagmus in all
dir	ecti	ons which is worse when looking to the right. The national also has provide the right evelid and her
rio	ht n	unil is smaller in diameter than her left along with decreased sweating on the right side. What is the most
lik	elv i	involved artery?
a		PCA
b		MCA
c		Anterior cerebral artery (ACA)
d	*	Posterior inferior cerebellar artery (PICA)
e	\vdash	Anterior inferior cerebellar artery (AICA)
WI	l hat i	s the characteristic lesion seen in the arteries in amyloid angionathy?
2	Int I	Silver stain amyloid
h		Congo-red positive amyloid
the dirv rigi lika a b c d e WI a b	e riggection riggection ht pely is a second	ht and has decreased pain and a decrease in the left hand's skin temperature. She has nystagmus in all ons, which is worse when looking to the right. The patient also has ptosis on the right eyelid, and her upil is smaller in diameter than her left along with decreased sweating on the right side. What is the most involved artery? PCA MCA Anterior cerebral artery (ACA) Posterior inferior cerebellar artery (PICA) Anterior inferior cerebellar artery (AICA) s the characteristic lesion seen in the arteries in amyloid angiopathy? Silver stain amyloid Congo-red positive amyloid

с		Apple-green birefringence under polarized light
d	*	B and C
e		A and C
Wl	hat t	wo structures make up the lentiform nucleus?
a		Caudate and thalamus
b	*	Globus pallidus and putamen
с		Globus pallidus interna and externa
d		Substantia nigra and putamen
e		None of the above
Wl	hat i	s the most common cause of basal ganglia calcifications?
a	*	Fahr's disease
b		Huntington's disease
c		Wilson's disease
d		Carbon dioxide poisoning
e		None of the above
Th	e pa	rasympathetic fibers that control papillary constriction arise from?
a	*	CN III
b		CN IV
с		Superior cervical chain
d		Vagus nerve
e		None of the above
A ′	76-y	ear-old man presents with sudden onset of monocular blindness in his left eye as well as difficulty seeing
obj	jects	s in his right lateral field. What is the most likely location of his lesion?
a		Right optic nerve
b		Left distal optic nerve
С		Optic chiasm
d	*	Left proximal optic nerve
e		Right temporal lobe
Wl	hich	of the following cranial nerves is the smallest?
a		CN I
b	*	CN IV
с		CN XII
d		CN V
e		All of the above
An	87	-year-old male presents with a sudden onset of unresponsiveness. During examination, he is found to
hav	ve al	bsent corneal reflex. What are the most likely nerves involved?
a		CN II and III
b		CN IV and VI
с	*	CN V and VII
d		CN VII and III
e		None of the above
Α:	54-y	vear-old female presents with left facial weakness (both upper and lower), a change in her taste sensation,
and	d inc	creased auditory sensitivity. What is the most likely cause of these symptoms?
a		Idiopathic
b		Herpes zoster
с		JC virus
d	*	A and B
e		B and C
A	34-y	year-old female with refractory seizures was recently treated with a vagus nerve stimulator. The patient
ret	urns	to the office with continued complaints of hoarseness in her voice. She denies any problems with
sw	allo	wing. On examination, she does not have difficulty elevating her uvula or soft palate. What is the most

likely nerve involved?

a		Glossopharyngeal n.
b	*	Recurrent laryngeal n.
с		Accessory n.
d		Hypoglossal n.
e		Trochlear n.
A 4	15-y	rear-old male presents with weakness. On examination, there is winging of his scapula. What is the most
like	ely i	nerve involved?
a		Pectoral n.
b		Anterior thoracic n.
с	*	Long thoracic n.
d		Dorsal scapular n.
e		Axillary n.
A	78-y	vear-old female with left hand numbness is sent for electromyography/ nerve conduction studies. She is
not	ed t	o have a Martin-Gruber anastomosis. What nerves are involved?
a	*	Ulnar n. and median n.
b		Radial n. and brachial n.
с		Axillary n. and ulnar n.
d		None of the above
e		All of the above
A	23-v	ear-old man presents with severe pain in his left shoulder. He had a recent viral infection. His left arm is
nur	nb.	weak, and has severe pain with movement. What is the most likely cause of his symptoms?
а	*	Parsonage-Turner syndrome
b		Erb-Duchenne syndrome
c		Guillain-Barré syndrome
d		Lambert-Eaton myasthenic syndrome
e		All of the above
Mu	iscle	contraction is a complex phenomenon. The electrolyte mostly involved and stored in the sarcoplasmic
reti	cult	im is:
a		Sodium
h		Potassium
c	*	Calcium
d		Magnesium
e		None of the above
The	e Go	olgi tendon organ is in a series in the muscle in contrast to muscle spindles that are in parallel. True or
fals	se?	organitis in a series in the masere in contrast to masere spinales that are in paraller. The or
a	*	Тпіе
h		False
In	a le	sion of CN XII the way to differentiate an upper motor neuron (UMN) lesion versus a lower motor
ner	a ic	(LMN) lesion is
a	*	The tongue deviates away from the lesion in the UMN
h		The tongue deviates toward the side of the lesion in the UMN
C		The tongue deviates away from the lesion in the LMN
d		It is impossible to tell without an MRI
u e		All of the above
Δn	18-	vert-old male comes to the office with his caretaker. He has a history of perinatal damage to his basal
σar	nalis	resulting in glial scars that resembles "marbles" What is the name of this disorder?
<u>5</u> ur		Striatonigral degeneration
a h	*	Status marmoratus
U C		Hallervorden-Snatz disease
с d		Status Jacuparis
u		None of the above
е wn		The alossic symptoms associated with migrains has deches?
vv r	iat a	ne me crassie symptoms associated with migrame neadacties?

a		Anxiety
b		Numbness
с	*	Throbbing
d		None of the above
e		All of the above
A	23-y	rear-old female presents with onset of headache on one side, which spreads to involve the whole side of
her	: hea	ad. She describes it as pulsatile, and it stays on one side. The headache is usually self-limiting lasting 30
mi	nute	s to a few hours. What is the most likely diagnosis?
а		Occipital migraine
b		Cluster headache
с	*	Classic migraine
d		Tension headache
e		None of the above
W	nat i	s the most common headache type?
a	*	Tension headache
b		Classic headache
c		Vasospastic migraine
d		Low pressure headache
e		All of the above
W	nat i	s the ratio of men to women affected by cluster headaches?
2		1.1
h		2.1
c	*	5:1
d		3.2
u e		1:4
W	hat r	1.7 percentage of migraine sufferers are women?
9 1	lai j	10%
a h		25%
0		50%
4	*	75%
u		15% None of the shove
	aiah	of the following is not a type of yescalar headache?
VV I	Inch	Migrating
a h		Toxic
0	*	Tension
C d		Telision Chuster
a		
e	24 -	All of the above are vascular headacnes
A.	34-y	ear-old female presents with daily neadache. She has been taking ibuprofen 800 mg three to four times a
day	y. 31 	the also drinks four cups of coffee per day. She states she used to have headaches on the feft side of her
nea		Trinten
a h		
0	*	Stop ibuprofon
2		Juproses her soffsing inteles
u		Cet more sloop
e	10 -	Use more steep
A 4	+0-9 5da-	be He describes the point of piercing and unbescable. He also describes a many race on the same side
nea his	uac hai	ne. ne describes the pain as plercing and undearable. He also describes a runny nose on the same side as
ms	nea	inten, which provided pain relief. What is the most likely neuronentide involved?
sur	natr	A sotulabeline
d L		Denemine
0	*	
С		nistanine

d		Aldosterone
e		Melatonin
Wł	nich	of the following is the most common aura associated with tension headaches?
a		Zig-zag lines
b		Blurry vision
с		Taste change
d		Strange smell
e	*	None of the above
A	35-y	vear-old female presents with chronic daily headache and depression. She reports severe tenderness on her
sca	lp a	nd neck. She also complains of pain with neck flexion. She denied any visual changes, and the rest of her
neu	ırol	ogic examination was normal. She works in an office and sits in front of a computer all day. She does
dri	nk c	one cup of coffee per day but does not associate her headaches with this. She also states her son recently
wa	s ev	ricted out of his apartment. She denies taking any over-thecounter medications for this pain. Which of the
fol	low	ing is not a cause of her headache?
a		Stress or anxiety
b		Depression
с		Poor posture
d	*	Caffeine
e		All of the above
Int	the j	patient above, what is the best first-line treatment?
a		Exercise
b		Adequate sleep
с		Cognitive behavioral therapy
d		Nonsteroidal anti-inflammatory drugs (NSAIDs)
e	*	All of the above
A 4	45-y	year-old tall, rugged man presents with severe headaches that debilitate him once a year. He states that
oxy	yger	n is the only treatment that helps. He is diagnosed with cluster headaches. What is the most likely mode
of	inhe	pritance?
a		Autosomal recessive
b		X-linked dominant
с	*	Sporadic
d		Anticipation
e		None of the above
Wł	nich	of the following has recently been associated with increased attack frequency and severity of migraines?
a		Hypertension
b		Chronic renal insufficiency
С	*	Obesity
d		Diabetes
e		None of the above
The	e de	velopment of cutaneous allodynia during a migraine attack is due to sensitization of?
a		Basal ganglia
b	*	Trigeminal nucleus
С		Dorsal column
d		Supplementary sensory area
e		None of the above
Wł	nich	of the following medication is not effective during allodynia during a migraine?
a		Parental COX-1 inhibitor
b		Parental COX-2 inhibitor
С	*	Triptans
d		All of the above are effective.
e		All of the above
Wł	nich	of the following combinations has recently been found to be more effective than monotherapy for the

a Triptan/opiate b * b * NSAID/triptan c NSAID/opiate d DHE/opiate
b * NSAID/triptan c NSAID/opiate d DHE/opiate
c NSAID/opiate d DHE/opiate
d DHE/opiate
e None of the above
The new international classification of headache disorders classifies chronic migraine as:
a Seven days of continuous migraine
b * Fifteen days or more for 3 or more months without medication overuse
c One month of medication overuse
d Forty-five days of continuous migraine
e None of the above
Which group is affected by idiopathic intracranial hypertension?
a Young teenage men
b Postmenopausal women
c * Overweight women of childbearing age
d Overweight men
e All of the above
Which of the following is the most serious complication of idionathic intracranial hypertension?
Brain death
a Dialifideati
D SUOKE
C * VISUALIOSS
d Headache
e Nausea and vomiting
what approximate percentage of women have recurrence of idiopathic intracranial hypertension?
b * 35%
c 75%
d 100%
e None of the above
A 19-year-old obese female with sixth nerve palsy presents to the ED, complaining of a severe headache. The
most likely opening pressure on her LP would be?
a * >20 cm H2O
b 5 cm H2O
c 10–15 cm H2O
d <5 cm H2O
e None of the above
In the above patient, what would be the best first line of treatment?
a Optic nerve fenestration
b Dietitian
c Diuretics
d A and C
e * B and C
A 23-year-old female with a recent diagnosis of idiopathic intracranial hypertension presents to the ED with
worsening blurry vision. She has been on steroids, acetazolamide, and furosemide in the past without relief
Which surgical option is the most effective treatment?
a Optic nerve sheath fenestration
b * Cerebrospinal fluid (CSF) diversion procedure
c Burr hole
d Lumbar fusion
e Laser surgery
What percentage of patients presenting to a neurologist with idiopathic intracranial hypertension have

a 5% b 25% c 75% d * 99% e 50%
b 25% c 75% d * 99% e 50%
c 75% d * 99% e 50%
d * 99% e 50%
e 50%
Which of the following has been associated with causing or worsening idiopathic intracranial hypertension?
a * Tetracycline
b Acetazolamide
c Furosemide
d Lumbar puncture
e None of the above
Which of the following best represents episodic focal neurologic symptoms without headache or vomiting?
a Hemiplegic migraine
b Carotidynia
c * Migraine equivalent
d Cluster headache
e None of the above
Which of the following fits the current theory of the cause of migraine?
a Vasodilatory mechanism
b Interleukin 1, 6, and 11 mediated
c * Spreading depression
d Histamine mediated
e Acetylcholine mediated
Which of the following frequency of headaches would prophylaxis treatment indicate?
a Once a month
h Perimenstrual
c * Once a week
d Stress related
e None of the above
What percentage of patients that complain of severe head pain after coughing speezing or lifting have an
Arnold-Chiari malformation?
$\frac{1}{10\%}$
c + 25%
d 50%
d 50%
Which of the following chromosomes has been linked to hemiplegic migraine?
a 1
$\begin{array}{c c} a & 1 \\ \hline b & 10 \end{array}$
$\frac{10}{2}$ * 10
$\begin{array}{c} c \\ d \\ \end{array}$
u IJ Name of the choice
e None of the above
e None of the above What percentage of Americans suffer from insomnia (both acute and chronic)? a 100/
e None of the above What percentage of Americans suffer from insomnia (both acute and chronic)? a 10% b * 40%
e None of the above What percentage of Americans suffer from insomnia (both acute and chronic)? a 10% b * 40% c 00%
e None of the above What percentage of Americans suffer from insomnia (both acute and chronic)? a 10% b * 40% c 90%
e None of the above What percentage of Americans suffer from insomnia (both acute and chronic)? a 10% b * 40% c 90% d <1%
e None of the above What percentage of Americans suffer from insomnia (both acute and chronic)? a 10% b * 40% c 90% d <1%

primary care physician at that time and has been taking it since then. He states he is not sure if it is still helping and feels fatigued during the day. He goes to bed at the same time every night and lies in bed for hours thinking

about things, watching the clock. The patient states he sleeps better at his sister's house. He denies any depression but does feel some anxiety about going to bed. He does watch TV in bed. About 2 years ago, he mentioned he had a significant amount of stress when his wife was sick, but she is much better now. What is the most likely diagnosis?

IIIC	JSUII	
a		Sleep apnea
b		Circadian rhythm disorder
с		Idiopathic insomnia
d		Depression
e	*	Psychophysiologic insomnia
А	22-у	year-old man comes to the office complaining of difficulty sleeping and daytime tiredness, which started
rig	sht at	fter college. His usual bedtime is 10:00 PM, but he cannot fall asleep until 1:00 or 2:00 AM, and then he
wa	ıkes	up for work around 6:00 AM. The patient states that on the weekends, he can stay in bed until 11:00 AM
or	noo	n, and he goes to bed around 2:00 AM. He does feel better on the weekends. He does not snore, is not
ob	ese,	and had no problems as a child. The patient also denies any recent stressors. What is the best treatment
foi	r hin	1?
a	*	Light therapy
b		Sedative hypnotic
С		Antidepressant
d		Stop working
e		None of the above
W	hich	of the following disorders is most commonly associated with chronic insomnia?
a		Restless legs syndrome (RLS)
b		Sleep apnea
с		Narcolepsy
d	*	Depression
e		Obsessive compulsive disorder
Α	35-y	year-old female presents to a sleep specialist for difficulty falling asleep and staying asleep over the
co	urse	of 1 year. The patient also complains of daytime fatigue. She has been diagnosed with attention-deficit
hy	pera	ctivity disorder (ADHD) in the past but has never been treated. The patient is diagnosed with primary
ins	somr	nia. What is the best treatment for her?
a		Stimulant
b		Short-acting sedative hypnotic
с	*	Cognitive behavioral therapy
d		Antidepressant
e		None of the above
W	hich	of the following is not a behavioral therapy for insomnia?
a		Relaxation therapy
b		Stimulus control
с		Biofeedback
d		Sleep restriction therapy
e	*	All of the above
Of	all	the treatments for insomnia, sedative hypnotics are commonly used. What length of time is generally
rec	com	mended for this family of drugs?
a		Six months
b	*	Less than 1 month
с		At least 1 year
d		Nine months
e		None of the above
Α	67-y	year-old man presents with complaints of "acting out his dreams." He states they are very violent, and his
wife has been injured on multiple occasions. He usually recalls the exact dream when his wife wakes him.		
There are no focal deficits on neurologic examination. He does have an uncle diagnosed with Parkinson's		
disease. What is the most likely location of this problem?		
_		Cortex

b		Basal ganglia	
с	*	Pons	
d		Thalamus	
e		None of the above	
Int	the a	above patient, what is the best line of treatment?	
а	*	Clonazepam	
b		Selective serotonin reuptake inhibitors (SSRIs)	
c		Gabapentin	
d		Carbidona/levodona	
e e		There is no treatment	
Wł	nat r	neurodegenerative disorder may rapid eve movement (RFM) behavior disorder be associated with or be	
the	nro	drome of?	
a	pro	Alzheimer's disease	
a h		Huntington's chorea	
0		Mitochondrial myonathy	
ر م	*	Dertringen 's disease	
a		All of the choice	
e	• 1		
Wr	nich	of the following is required to diagnose RLS?	
a		Polysomnogram	
b		History of iron deficiency	
с	*	Clinically meeting the four criteria	
d		Responsive to dopamine	
e		None of the above	
Wł	nich	of the following stages does not change significantly as we age?	
a		Stage I	
b		Stage II	
с		Delta sleep	
d	*	REM stage	
e		All of the above	
A	16-y	year-old boy presents with complaints of difficulty sleeping during the school week. On the weekends,	
hov	wev	er, he is able to fall asleep around 2:00 AM and wakes around noon and feels refreshed. He is diagnosed	
wit	h de	elayed sleep phase syndrome. What area of the brain controls this?	
а		Thalamus	
b		Parietal cortex	
с	*	Hypothalamus	
d		Pituitary gland	
e		Medulla	
Wi	th d	ecreased sleep higher cognitive tasks are affected early and disproportionately. Which of the following	
is f	hou	ght to be the reason?	
a		Increased acetylcholine levels	
h		Low melatonin levels	
C		Microsleen intrusion	
d		Visual neglect phenomenon	
u A	*	C and D	
۲ ۲	10 -	Canu D	
A on:	12- <u>}</u>	a and therefore his parents came to seek help. When are these opisodes likely occurring?	
epi	500	stage Leleen	
d 1-	*	Stage 1 Steep	
D	~	Wakerunness	
C		Dena sieep	
a		Stage II	
e		None of the above	
Α :	A 54-year-old female with a history of anxiety presents with the sensation to move her legs at night. She is		

dia	Igno	sed with RLS. Which of the following treatments would not be appropriate?
a	*	Fluoxetine
b		Wellbutrin
с		Clonazepam
d		Ropinirole
e		Carbidopa/levodopa
A	17-y	rear-old female presents with excessive daytime sleepiness. She states she falls asleep in school and takes
nap	os fi	requently that last 20 to 30 minutes and are refreshing. What else in her history could confirm the
dia	gno	sis of narcolepsy?
a		Episodes of sleep paralysis
b		Hypnagogic hallucinations
с	*	Cataplexy
d		All of the above
e		None of the above
A	16-y	ear-old boy is recently diagnosed with narcolepsy with cataplexy. Which of the following neuropeptides
is t	hou	ght to cause this disease?
a		Increased dopamine
b		Decreased acetylcholine
с	*	Decreased hypocretin
d		Increased interleukin-1
e		None of the above
Wł	nat r	percentage of narcoleptics have had to quit working due to their disease?
а		<1%
b		Almost 10%
с	*	About 25%
d		100%
e		None of the above
W	nich	of the following are required on the polysomnogram to determine REM sleep?
а		Rapid eve movements
b		Mixed-frequency electroencephalogram (EEG)
с		Atonia on electromyography (EMG)
d		A and C
e	*	All of the above
W	nich	of the following is the most common sleep complaint?
a		Sleep apnea
b		Narcolepsy
c		RLS
d	*	Insomnia
e		Sleepwalking
W	nich	of the following has been closely associated with narcolepsy with cataplexy?
а		Chromosome 4q
b	*	HLA-DOB1*0602
c		Chromosome 22
d		X-linked
e		None of the above
A	19-v	ear-old male with a history of narcolepsy with cataplexy presents to your clinic. What is the most likely
wa	y to	elicit his cataplexy?
a		Making him jump
h	*	Making him laugh
c		Making him read
d		Making him take a nap
e		None of the above
Ľ.		

A 23-year-old female with a long-standing history of narcolepsy with cataplexy presents to your office. She was recently placed on modafinil with significant improvement in her daytime sleepiness, however, she is still having frequent cataplectic attacks. Which of the following agents would help her?

а		Methylphenidate
b	*	Tricyclic antidepressant
с		Benzodiazepine
d		Clonidine
e		None of the above
Α.	56-y	year-old female with chronic insomnia presents to the clinic. She is initiated on melatonin 3 mg about 4
hou	ırs t	before her target bedtime. Where in the brain is melatonin produced?
a		Hypothalamus
b		Pituitary gland
с	*	Pineal gland
d		Adrenal gland
e		None of the above
А	76-y	year-old male presents with the inability to maintain attention. He is easily distracted, fidgety, and
000	casic	onally mistakes the wires in the room for snakes. This has been going on for 2 days, but there are periods
wh	en h	he is completely alert. Which of the following describes this patient's disease?
a		Frontotemporal dementia
b		Dementia with Lewy bodies
c	*	Delirium
d		Transient global amnesia
e	• •	None of the above
Wr	nch	of the following has not been associated with delirium?
a 1		L'obalamin Nicela
b		Niacin Thiansing
C d		Themasine
a	*	All of the above are accordinated with delivium
e ^	·	All of the above are associated with definitional state. She is diagnosed with a stroke. Which of the
fol	lowi	ing is most likely the location of the stroke?
3	*	Basal forebrain
a h		Anterior inferior cerebellar artery territory infarct
C		Left lateral geniculate
d		Subthalamic nucleus
u e		None of the above
	55-v	rear-old man presents in an acute comparise state. Magnetic resonance imaging (MRI) is performed and
sho	ows	a stroke affecting his ascending reticular activating system. Which of the following areas would
cor	rest	bond with this lesion?
a		Right parietal lobe
b		Left occipital lobe
с		Cerebral peduncle
d	*	Tegmentum of the upper pons
e		Basal ganglia
A	40-y	year-old man presents to the intensive care unit in a comatose state. He is hyperventilating, on arterial
blo	od g	gas, and there is a metabolic acidosis. Which of the following is probably not the cause of his coma?
a		Diabetic ketoacidosis
b		Acetaminophen overdose
c		Ethylene glycol ingestion
d	*	Excessive vomiting
e		None of the above
A 3	35-у	rear-old female who recently ran a marathon in the summer presents in a comatose state. Her core body

temperature is 41°C. She is diagnosed with heat stroke. What are other possible causes for her hyperthermia?		
а		Wernicke's encephalopathy
b		Adrenal failure
с		Hypothyroidism
d	*	Anticholinergic intoxication
e		None of the above
An	87-	vear-old man is found unresponsive in his home. On presentation, he has ataxic breathing, fixed pinpoint
pu	nils.	absent vestibuloocular reflexes, and has no movement of his extremities. Which of the following is a
pos	ssibl	le etiology for his coma?
<u> </u>	*	Tumor compressing the lower pons
h		Stroke to the midbrain
c		Hernes encenhalitis
d		Bilateral thalamic infarcts
e		None of the above
Δ	76-1	ver-old man presents to the emergency department (ED) with Chevne-Stokes respiration which started
	10-y 110lx	$_{2}$ On computed tomography (CT) scan of his head bilateral parietal lobe infarcts are seen in the middle
	uciy ebro	A. On computed tomography (C1) scale of this field, on a could also cause a similar breathing pattern?
2		Right posterior cerebral artery infarct
a b		Alcohol interviention
0	*	Cardiomyopathy
	·	Oniete evendese
u a		None of the shows
e	24 -	None of the above
A	34-y	had severe head trauma?
tha	u sn	
a 1.		Hypermetanosis
D	*	Iclefus Dettle?e view
	*	Battle's sign
a		Ectnyma gangrenosum
e	10	None of the above
A	19-y	rear-old female presents to the ED with severe head injury due to a recent motor vehicle accident. Her
Gla	asgo	w coma scale is which of the following is not possible for her to be performing?
a		Extension response to pain
b		Incomprehensible sounds
с		Eyes open in response to pain
d	*	Inappropriate words
e		None of the above
A	56-	year-old female found unresponsive is brought to the ED. On examination, she is found to have
dec	corti	cate posturing. Which of the following is consistent with this condition?
a	*	Flexion at the elbow, plantar lower extremity extension
b		Upper extremity extension, lower extremity extension
с		Flexion at the wrist and fingers, lower extremity flexion
d		All of the above
e		None of the above
Wl	nich	of the following is most likely the location of the lesion that may cause decerebrate posturing?
a		Thalamus
b		Caudate
с	*	Red nucleus
d		Cerebellar peduncle
e		Medial longitudinal fasciculus
Α	56-	year-old male with a history of multiple psychiatric hospitalizations was recently admitted to the
psy	, chia	atric ward with acute psychosis. He was given multiple doses of haloperidol. On the third day of

admission, he developed a fever, increased bilateral muscle rigidity, and then went into a coma. Which of the

fol	lowi	ing is the best next step?
a		Place cooling blankets
b		Start dantrolene
с		Check creatine phosphokinase level
d	*	Stop the neuroleptics
e		None of the above
A	42-v	rear-old female with a history of chronic alcohol abuse and hepatitis C presents with a decreased level of
coi	nscio	ousness. She is found on examination to have a tremor in her extremities and elevated ammonia levels in
hei	r blo	od. Which of the following describes the type of tremor she most likely has?
а		Transient increase in postural tone
b	*	Transient decrease in postural tone
с		Occasional twitches of her face
d		A and C
e		None of the above
A	32-v	ear-old man with a history of berry aneurysm that was partially coiled 1 week ago presents in a coma
and	d is	completely unresponsive. What physical finding would be pathognomonic for a subarachnoid
hei	mori	thase?
a		Elevated blood pressure
h		Loss of the vestibule-ocular reflex
c		Pinpoint nunils
d		Roth spots
u e	*	Subhvaloid hemorrhage
	65-v	vear-old man presents after a stroke in the brain stem, and on examination, you find that his pupillary light
ref	lev i	is impaired and he has an oculomotor palsy. Which of the following could also have caused this?
2		Symbilis
a b		Low vitamin B12
0	*	Low vitaling D12 Hornistion of modial temporal structures from an expanding supretentorial mass
с 		Thisming deficiency
u a		None of the shows
e	26 1	None of the above
A in	30-y lotor	and states that he took an overdese of expendence. Which of the following could also course his pupillary
nn . ohd	nater	and states that he took an overdose of oxycodone. Which of the following could also cause his pupiliary $\frac{1}{2}$
Cha	ange	Lesion in the populate termentum
a h		Pilotoral ratinal artery occlusion
D		Dilacerai retinal artery occlusion
C		Phocarpine drops
a		Left carotid artery dissection
e		All of the above
A	/6-y	ear-old male presents to the ED with left-sided hemiparesis (worse in the leg than arm) and eye deviation
to	the I	eft. He has some nystagmus to the left as well and is unresponsive. Which of the following is possible?
a		Large left frontal lobe lesion
b	*	Seizure
С		Right occipital lobe infarct
d		Tumor in the brain stem
e		None of the above
A	19-у	year-old man presents in a coma after a major motorcycle accident. His cervical spine is cleared of any
fra	ctur	e. You attempt the oculocephalicy maneuver. If the patient has a positive doll's eye reflex, which of the
fol	lowi	ing would be seen?
a	*	The eyes do not turn with the head but in the opposite direction
b		The eyes turn with the head in the same direction
c		The left eye turns with the head while the right eye does not turn
d		Both eyes move upward
e		None of the above

W	hich	of the following is required for caloric testing of the doll's eye reflex?
а		One milliliter of ice cold water
b		Three liters of lukewarm water
с	*	Fifty milliliters of ice cold water
d		Thirty milliliters of lukewarm water
e		None of the above
W	hich	of the following results would be seen in a patient in a psychogenic coma after a cold caloric test?
а		Sustained deviation of both eves toward the ear being stimulated
b	*	Eve deviation toward the stimulated ear with nystagmus
c		Sustained eve deviation away from the stimulated ear
d		Temporary eye deviation upward
e		None of the above
A	65-3	year-old female presents to the toxicology service with an acute overdose of lorazenam and is comatose
on	exa	minimitian in the second se
fol	low	ing could also present these examination findings?
a		Lyme disease
b		Ethylene glycol
c		Lead toxicity
d		Botulism
e	*	Wernicke's encenhalonathy
A	45-x	ver-old man with an acute myocardial infarction presents after cardiac arrest and was resuscitated for 45
mi	nute	The is currently compared and the family would like to know his prognosis. Which of the following
exa	amir	nation findings at 24 hours would help support that the outcome would be poor?
a		Absent ankle reflexes
h	*	Absent bilateral corneal reflexes
C		Roving eve movements
d		Withdraws to novious stimuli but no localization
u A		Pupils pippoint but reactive
	hich	of the following occurs first in uncal herniation syndromes?
91		Insilateral heminlegia
a b	*	Third cranial nerve palsy
0		Decembrate posturing
с 4		Atoxic broothing
a		Ataxic bleathing
e		
A	64- <u>}</u>	year-old female presents to the ED with severe head trauma. Which of the following is not part of
Cu	snir	
a 1	*	Increased intracranial pressure
D	*	
C 1		Hypertension
a		Bradycardia
e		All of the above
A .	36-y	vear-old female presents in a metabolic coma. Most metabolic comas present with symmetrical neurologic
dei	[1C1ts	s. Which of the following is often associated with lateralizing motor findings in metabolic coma?
a 1		
b	<u>ب</u>	Elevated ammonia
c	Ŷ	Hypoglycemia
d		Hypothyroidism
e		None of the above
Which of the following does not strongly suggest a metabolic coma?		
a		Tremor
b		Multifocal myoclonus
С		Asterixis

d	*	Hemiparesis
e		All of the above
Α	21-	year-old female presents with cocaine overdose. Which of the following will be seen on pupil
ex	amir	nation?
a		Miosis
b	*	Mydriasis
с		Pinpoint pupils
d		Anisocoria
e		None of the above
Α	35-	year-old female presents with a drug toxicity of unknown type. Her brother tells you she is on
an	nitrip	ptyline and has a history of cocaine abuse. Which of the following would help you be able to tell that she
ing	geste	ed the amitriptyline?
a		Hyperthermia
b		Tachycardia
с	*	Dry flushed skin
d		Pupils
e		Diaphoresis
А	76-у	year-old male presents with an acute embolism to the top of the basilar artery and shows classic signs of
loc	cked	-in syndrome. All of the following can mimic a patient in chronically locked-in syndrome except:
a		Severe upper cervical spinal cord lesion
b		End-stage Parkinsonism
с	*	Herpes encephalitis
d		Amyotrophic lateral sclerosis
e		None of the above. They all can present like someone locked in
Α	46-y	year-old female is initially diagnosed with an acute psychotic episode. She has a CT scan of her head,
wł	nich	demonstrates there is a lesion. She is able to follow with her eyes but cannot initiate any other
mo	oven	nent. She does not follow any other commands. Her reflexes and tone are intact. What is the most likely
dia	agno	osis?
a		Pontine infarct
b		Syphilis
с	*	Premotor area infarct
d		Frontotemporal dementia
e		None of the above
W	hich	of the following is a distinguishing characteristic that differentiates catatonia from a comatose state?
a		Fixed eye movements
b		Seizures
С	*	Ability to maintain tone
d		Withdrawal to pain
e		None of the above
W	hich	of the following is NOT used in comatose patients that have been suspected of drug ingestion?
a		Naloxone
b	*	Mannitol
С		Flumazenil
d		Activated charcoal
e		None of the above
A	19-у	year-old female presents in a comatose state. On examination, she is noted to have papilledema. She also
pre	esen	ts with a fever, and her family states there was another student at her college diagnosed with bacterial
me	ening	gitis. Which of the following is the next best step?
a me	ening	gitis. Which of the following is the next best step? Electroencephalogram (EEG)
me a b		gitis. Which of the following is the next best step? Electroencephalogram (EEG) Lumbar puncture
a b c	*	gitis. Which of the following is the next best step? Electroencephalogram (EEG) Lumbar puncture CT scan of head

e		None of the above
W	nich	of the following is an acute encephalopathy?
a		Frontotemporal dementia
b		Anton's syndrome
с		Korsakoff syndrome
d	*	Wernicke's encephalopathy
e		None of the above
A	36-v	vear-old male with a history of chronic alcohol abuse presents with ophthalmoplegia, confusion, and gait
ata	xia.	Which of the following has not been associated with this condition?
а		Anorexia nervosa
b		Prolonged parental nutrition
с		HIV
d	*	Megaloblastic mania
e		All of the above are associated
W	nat r	percentage of patients with Wernicke's encephalopathy has been associated with an atrophic mamillary
bo	dv?	
a		10%
b		50%
c	*	80%
d		100%
e		None of the above
A	65-v	vear-old man presents with a history of malabsorption due to a colon resection many years ago for colon
car	icer.	. He exhibits confusion, lateral rectus palsy, nystagmus, and an unsteady gait. The patient is diagnosed
wi	th tl	hiamine deficiency. Which of the following symptoms of Wernicke's encephalopathy occasionally
pre	eced	es the other symptoms?
a		Nystagmus
b		Lateral rectus palsy
с	*	Ataxia
d		Encephalopathy
e		None of the above
То	xic 1	metabolic encephalopathies are extremely common. Which of the following patients in the intensive care
uni	it are	e at the greatest susceptibility to develop this encephalopathy?
a		A 50-year-old male with multiple medical problems
b		An 18-year-old male intubated for 4 weeks
с	*	A 75-year-old male with history of mild dementia
d		A 45-year-old male with no past medical history
e		None of the above
Α	34-y	year-old female with a history of depression presents to the intensive care unit with an overdose of
ace	etam	inophen. What percentage of patients with acute hepatic encephalopathy have cerebral edema?
a		<1%
b		25%
c		50%
d	*	80%
e		99%
A.	32-у	vear-old male marathon runner presents with impaired mental status and develops nausea and malaise. He
als	o de	eveloped headaches and then became lethargic. The patient is diagnosed with hyponatremia. Which of the
fol	lowi	ing sodium levels corresponds to when he developed nausea and malaise?
a		145 mEq/L
b		135 mEq/L
с	*	120 mEq/L
d		155 mEq/L
e		None of the above

A	A 67-year-old male has been in the intensive care unit in a comatose state and is diagnosed with brain death.		
VV I	nen	The same of the brain death should be brown	
a h		The cause of the brain death should be known Evolution of any complicating modical condition that may confound clinical accessment (i.e., no covers	
D		electrolyte imbalance)	
с		No drug intoxication or poisoning that may impair the clinical assessment	
d		The core body temperature is greater than or equal to 32°C.	
e	*	All of the above are prerequisites	
W	nich	of the following would exclude brain death?	
а		Absent gag reflex	
b		Absent corneal reflex	
с		Coma	
d		Triple flexion response with foot stimulation	
e	*	None of the above	
Wł	nich	of the following meets the criteria for a positive apnea test in brain death?	
a		Absent respiratory response with a PaCO2 >45 mm Hg	
b	*	Absent respiratory response to PaCO2 >60 mm Hg	
с		Breathing below the ventilator	
d		Ten-second or longer stoppage of breathing	
e		None of the above	
Wł	nat i	s the number of hours in between examinations and physicians required for brain death in the United	
Sta	tes?		
a		72;3	
b	*	6;2	
с		96;1	
d		1;2	
e		None of the above	
Wl	nich	of the following is the traditional "gold standard" test for brain death?	
a		Transcranial Doppler	
b		Carotid ultrasound	
с	*	Cerebral angiography	
d		CT angiography	
e		None of the above	
Α.	56-y	rear-old male presents to the emergency department (ED) after severe head trauma. After two physicians	
exa	amir	he him, and after a positive apnea test, the patient is confirmed brain dead. Which of the following has	
bee	en m	nisdiagnosed with brain death?	
a		Locked-in syndrome	
b		Hypothermia	
С		Drug intoxication	
d		Guillain-Barré syndrome	
e	*	All of the above	
Α	60- <u>`</u>	year-old man presents to the emergency department (ED) after cardiac arrest. It was reported that	
car	dio	bulmonary resuscitation (CPR) was performed for approximately 25 minutes. What is the likelihood that	
the	pat	ient will survive after 6 weeks?	
a 1		44% 200/	
b		30%	
C	*	13%	
d	*		
e	1	None of the above	
WI	nich	of the following improves neurologic outcome after cardiac arrest?	
a 1	4	Administer mannitol	
n	Ť	Hypothermia	

с		Craniectomy
d		Magnesium infusion
e		Thiamine IV
W	hich	of the following is required in brain death criteria in the United States?
а		EEG
b		MRI
c		Transcranial Doppler
d		Lumbar puncture
e	*	None of the above
W	hat r	percentage of people in the United States older than 80 have Alzheimer's dementia (AD)?
3		5%
h		25%
C	*	40%
d		75%
u A		None of the above
	hich	of the following areas is most involved in AD?
VV I		Or the following areas is most involved in AD?
a h		Decel canalia
D		Dasal galigita
C	÷	Pons
a	ŕ	Medial temporal lobe
e	• •	None of the above
W	hich	of the following is not seen in AD?
a		Granulovacuolar degeneration
b		Neuropil threads
С		Neuronal loss and synaptic degeneration
d		Neurofibrillary tangles
e	*	All of the above
W	hich	of the following structures is most affected by neurofibrillary tangles?
а	*	Entorhinal cortex
b		Caudate
с		Layer III of the parietal lobe
d		Cerebral peduncle
e		None of the above
А	76- <u>y</u>	year-old male with a history of dementia presents to your office. He seems to be doing well, and his
car	etak	ter confirms this. Which of the following most likely will cause this patient's death?
а		Myocardial infarction
b		Stroke
с		Motor vehicle accident
d	*	Pneumonia
e		All of the above
W	hat p	percentage of AD is familial?
а	*	10%
b		35%
с		75%
d		100%
e		None of the above
W	hich	of the following is the most common presenting symptom in AD?
2		Focal weakness
h		Gait disturbance
		Urinary incontinence
с 1		Language difficulty
u	*	Language unitedity
e	-,-	
W	hich	of the following needs to be excluded to diagnose AD?
--------	------	--
а		Syphilis
b		Hypothyroidism
с		Stroke
d		Cobalamin deficiency
e	*	All of the above
W	hich	of the following is associated with a variant of AD?
а		Urinary incontinence
b	*	Spastic paraparesis
c		Right facial droop
d		Ataxia
e		None of the above
A	76-1	vear-old male is sent to your clinic for evaluation of AD. You have ruled other possible causes and
dia	igno	se him with AD. Which of the following is associated with this condition?
a		Presenilin IV
h		Chromosome 2
C	*	Amyloid precursor protein
d		Alpha-amyloid pentide
u o		None of the above
	hich	of the following chromosomes has been associated with the amuloid productor protein?
•••		Chromosome 14
a h		Chromosome 14
D	*	Chromosome 21
C J		Circomosome 21
a		A-IIIKed
e	• 1	
W	nich	of the following statements is true regarding AD?
a 1	Ŷ	No intervention has been shown to prevent AD or slow its progression
b		N-methyl-D-aspartate (NMDA) antagonists are extremely effective
c		Cholinesterase inhibitors are third-line agents for the treatment of AD
d		Psychotropic medications should always be avoided in AD patients
e		None of the above
An	1 87	-year-old female with severe AD presents with extreme anger and rage. Which of the following
me	dica	ations has been approved by the FDA for the treatment of behavioral changes in AD?
a		Haloperidol
b		Risperidone
С		Gabapentin
d		Quetiapine
e	*	None of the above
W	hich	of the following should be part of the routine work-up for dementia?
a		Complete blood count
b		Cobalamin
с		Liver enzyme
d		Cortisol
e	*	All of the above
А	65-3	year-old male presents with a long-standing history of dementia. He is seen by a specialist and is
rec	omi	mended to have further testing to help confirm AD. Which of the following tests could be ordered?
a		Serum ferritin
b	*	Cerebrospinal fluid (CSF)-tau levels
с		CSF hypocretin-1
d		Serum amyloid
e		None of the above
Α	90-y	vear-old female presents with a history of AD for 10 years. She has steadily progressed over the past 10

yea dei	years requiring all her ADLs and language deficit. Which of the following anatomical locations would be most depleted or damaged in this patient?		
<u>uc</u>		Nucleus solitarius	
a h	*	Pagel muchan of Maxmant	
0		Basal flucteus of Meyhert	
C		Neticular nucleus of the thalamus	
d		Medial geniculate nucleus	
e		None of the above	
NN	ADA	A antagonists are often used to treat AD. In which of the following scenarios would this drug be favored	
OV	er ch	nolinesterase inhibitors?	
а		Parkinson's disease	
b		Late-stage AD	
c		Hepatic encephalopathy	
d		Huntington's disease	
e	*	B and D	
Α	63-y	vear-old female with a recent diagnosis of AD presents to the clinic. Her husband states she has become	
ver	ry de	epressed lately. She is initiated on an antidepressant. Which of the following is the percentage of patients	
wi	th A	D that have depression as well?	
а		5%	
b	*	31%	
c		70%	
d		Q0%	
u A		None of the above	
	71 т	where old man presents with his son for the treatment of AD. His son states that he has been placed on	
A	/1-y	vine, and they have seen good results. Which of the following could also be done as an adjunct to help	
hie	foth	time, and mey have seen good results. Which of the following could also be done as an adjunct to help	
1115	1 au	Ici :	
a 1.	*	Describe the methantine	
D	~	Provide the patient with brainteaser puzzles	
c		Add cholinesterase inhibitor	
d		Use diphenhydramine to help his father sleep	
e		None of the above	
W	hich	of the following is the main difference between AD in Down syndrome and AD in the general	
po	pula	tion?	
a		Patients with Down syndrome do not have amyloid deposits	
b	*	In Down syndrome patients, dementia occurs at an earlier age	
c		Down syndrome patients have Lewy body deposition as well	
d		All of the above	
e		None of the above	
W	hich	of the following is part of a theory regarding why Down syndrome patients develop AD?	
а		They often graduate college	
b		Trisomy 2	
с		Someone else in the family has AD	
d	*	Cognitive reserve hypothesis	
e		None of the above	
A	35-v	year-old male with Down syndrome is starting to develop memory difficulty. He wants to know how long	
he	mav	live What would you tell him?	
9		About 1 year	
h	*	At least 10 years	
	+	More than 50 years	
4	┝─┤	Loss than 6 months	
u	$\left \right $	None of the shove	
e	$\frac{1}{21}$	None of the above	
A	∠1-5 bb -	real-old man with Down syndrome presents with increasing aggression. He is also noted to be very	
\pm SIII	stubborn and refuses to do his chores. His parents are extremely trustrated. His neurologic examination is		

und of	unchanged, and he denies any headaches or visual changes. His parents state there is nothing else wrong. Which of the following is the most likely cause of this patient's symptoms?		
а		Lack of sleep	
b	*	Exaggeration of a previous long-standing trait	
c		Stroke	
d		Behavioral changes are not usually seen in Down syndrome, and therefore looking for a structural lesion	
u		is crucial	
Α		None of the above	
	15 x	where of the above	
	+J-y 11d	most likely demonstrate her current condition?	
wu	ulu	Decreased muscle tone	
a 1.	*	Vegetative state	
D			
C 1		Some mild language difficulty	
d		Able to perform some ADLs	
e		None of the above	
Fo	r pat	tients with AD with or without Down syndrome, which of the following is the most important risk factor	
for	AD	?	
а		Presence of trisomy 21	
b	*	Age	
с		Family history of AD	
d		Small head circumference	
e		History of multiple concussion	
Wł	nich	of the following has been associated with decreased risk of AD?	
a		Stroke	
b		Low IQ	
с	*	Mediterranean diet	
d		Sedentary lifestyle	
е		None of the above	
W	nich	of the following is associated with aphasia?	
a	*	Left middle cerebral artery (MCA) territory stroke involving Broca's area	
h		Developmental disorders of language	
C		Stuttering	
d		Schizonbrenia-associated language difficulty	
u o		All of the above	
	hot m	All of the above	
VV I	iat j	encentage of tent-nanded people have language control in their tent hernisphere?	
a L		<1% 150/	
D	*		
C	Ť	60% 1000/	
d		100%	
e		None of the above	
Α :	56-y	ear-old man presents with difficulty expressing himself and righthanded weakness. What percentage of	
pat	ient	s develop aphasia due to stroke?	
a		5%	
b	*	20%	
c		75%	
d		99%	
e		None of the above	
Wł	nich	of the following statements regarding gender and aphasia is true?	
a		Women develop aphasia more than men	
b		Men are equal to women in developing aphasia	
с		Men develop Wernicke's aphasia more than women do	
d	*	Women develop aphasia less than men	

e		None of the above	
Wł	Which of the following is considered part of aphasic syndromes?		
а		Global	
b		Conduction	
с		Aphemia	
d		Anomic	
e	*	All of the above	
In	the	previous question which choice is considered the most common and most widely understood and	
acc	cente	ed?	
а		Global	
b	*	Conduction	
c		Aphemia	
d		Anomic	
e		All of the above	
A	77-1	vear-old male presents with acute onset of confusion. He is later found to have aphasia. Which of the	
fol	lowi	ing are good language tests to help elucidate his aphasia?	
лот а		Boston Diagnostic Aphasia Examination	
h		Token test	
c		Action Naming Test	
d		Western Anhasia Battery	
e	*	All of the above	
W	nich	of the following is not a common bedside test for anhasia?	
9		Naming	
h		Repetition	
C		Comprehension	
d	*	Pursuit	
u e		All of the above	
	65-v	rear-old female who presented with a recent stroke to her left temporal- parietal region is being evaluated	
Sh	e is	asked to name as many animals as she can think of in 1 minute. Which of the following area is being	
ass	esse	ed during this test?	
a		Occipital lobe	
h	*	Frontal lobe	
C		Right parietal lobe	
d		Brain stem	
e		None of the above	
Δ	56-1	rear-old male is being evaluated for acute appasia. He has severe difficulty with repetition. What is the	
m	st li	kely location of his deficit?	
a		Left mesial temporal region	
h		Right thalamus	
C	*	Perisvlyian region	
d		Nonperisylvian region	
e		None of the above	
A	46-'	vear-old female with atrial fibrillation presents with a right hemispheric stroke. She has difficulty	
atte	endi	ng to her left and misses reading the left side of the book. Which of the following accurately describes	
her	·?		
a		Neglect apraxia	
h	*	Neglect dyslexia	
c		Aphemia	
d		Agraphia without acalculia	
e		None of the above	
A '	72-v	rear-old man presents with nonfluent aphasia. Which of the following would help support the location of	
the	: _ y	ion?	

a		Left hemiparesis
b	*	Buccofacial apraxia
с		Urinary incontinence
d		Acalculia
e		None of the above
Wi	th E	Broca's aphasia, where is the most likely location of the lesion?
а		Posterior temporal horn
h		Cingulate gyrus
c	*	Inferior frontal gyrus operculum
d		Posterior parietal lobe
e	-	None of the above
A	56-	vear-old female with recent left MCA distribution infarct is diagnosed with Wernicke's anhasia
Pri	mar	ily she is found to have word substitution difficulty but has other deficits as well consistent with the
les	ion	Which of the following is true?
2		Comprehension of language is intact
h		Naming is impaired but repetition is intact
C C	*	Neologism may be present
d		Grammar is not as preserved as it is in Broca's anhasia
u o		None of the above
	tiont	with Warniaka's are not always aware of their definits. They are often mistaken to be confused and
r a	noti	s with wernicke's are not always aware of their dencits. They are often inistaken to be confused and mas even psychotic. Which of the following is true?
801	*	The losion usually involves the posterior one third of the superior temporal syrus
a h		Wernieke's anhagia is often due to a streke involving the left anterior corebral artery
0		The amount of recovery from Wernieke's enhaging is independent of age
С 4		Superior quedrentenensie is not a helpful sign in Wernieke's enhagie
a		Superior quadrantanopsia is not a neipiul sign in wernicke's apnasia
e I		
Le	sion	s of the occipital gyrus or fusiform gyrus would result in what deficit?
a 1		Difficulty in naming inanimate objects
b	*	Impaired verb naming
C 1	Ŷ	Impaired ability to name living things
d		A and B
e		None of the above
A	54-y	year-old female presents with an acute aphasia. She is found to have conduction aphasia. Which of the
fol	IOW:	ing is a hallmark feature?
a	*	Repetition impairment
b		Nonfluent aphasia
С		Right hemiparesis
d		Right hearing deficit
e		None of the above
In	the j	patient above, which of the following locations would correlate with her language deficit?
a		Right posterior temporal lobe
b		Left amygdala
С	*	Left supramarginal gyrus
d		Right posterior frontal lobe
e		None of the above
In	the j	patient in question 43, which of the following signs would also help confirm the diagnosis?
a		Acalculia
b		Contralateral superior quadrantanopsia
с		Contralateral limb apraxia
d		A and C
e	*	B and C
A	patie	ent presents with global aphasia. Which of the following is spared in this setting?

a		Spontaneous speech
b		Naming
с		Repetition
d		Reading
e	*	None of the above
An	80	-year-old male with a history of diabetes presents with global aphasia. The rest of his examination is
no	rmal	. There are no signs of hemiparesis. Which of the following could explain this finding?
а		Cerebellar lesion
b	*	Thalamic lesion
с		Caudate lesion
d		Pontine lesion
e		None of the above
A	63-v	vear-old female with atrial fibrillation presents with a stroke. Magnetic resonance imaging demonstrates a
les	ion	in both superior temporal gyri. Which of the following would be associated with this?
а		Wernicke's aphasia
b		Broca's aphasia
с	*	Pure word deafness
d		Conduction aphasia
e		None of the above
W	hich	of the following differentiates auditory nonverbal agnosia from pure word deafness?
a	*	Auditory nonverbal agnosia involves failure to recognize familiar sounds
b		Pure word deafness has language deficits
С		Pure word deafness has no sparing of pure-tone hearing
d		Auditory nonverbal agnosia involves both language and nonlinguistic sounds
e		None of the above
W	hich	of the following is associated with transcortical motor anhasia?
а		Repetition is impaired
h	*	Mutism may be present initially
C		Initiation of speech is intact
d		There is no difference between transcortical motor anhasia and Broca's anhasia
e		None of the above
Δ	78_v	year-old male presents with an acute stroke. Which of the following locations would explain why the
nat	ient	has lost the ability to perform skilled movements but has full motor strength?
put a		Supplementary motor cortex
h h		Left inferior parietal lobe
C C		Cornus callosum
d	*	All of the above
u e		None of the above
<u>ر</u>	55 .	year old female presents with ideomotor approvia on examination. Which of the following would be an
A eve	amn	le of a bedside test for this problem?
2	amp	Tandem walk
a b	*	Showing how to hammer a nail into the wall
C		Asking to repeat three words
d	\vdash	Asking the patient for different ideas about her symptoms
u e	\vdash	None of the above
	15 -	rear-old male presents to the emergency department (ED). On examination, he is found to have difficulty.
	+J-Y rfor	ming tasks with his mouth. He cannot demonstrate how to blow out a candle or how to kiss Which of the
fol		ing could cause this?
201	*	Lesion in the left inferior frontal region
a h		Chronic alcohol use
C		History of gastric hypass surgery
с 		Hypoglycemia
u		пуродлуссина

e		None of the above
W	hich	of the following is part of Gerstmann's syndrome?
а		Confusion of handedness
b		Alexia with agraphia
с		Inability to count numbers
d	*	All of the above
e		None of the above
An	89	-vear-old male presents with progressive difficulty with ADLs. His memory is intact, however, he
der	mon	strates unilateral apraxia. Which of the following is possible?
a		Vertebral dissection
b	*	Corticobasal degeneration
c		Reve's syndrome
d		Anton's syndrome
e		None of the above
De	mer	the with Lewy bodies accounts for what percentage of dementias?
a	*	15%
u h		10/
C C		50%
d		90%
u o		None of the above
	hich	of the following helps differentiate AD from dementia with Lewy bodies?
•••		Detion to with AD have visual hallucinations
a h	*	Patients who have domentia with Lewy body have Parkinsonian features
0		Patients with AD have integet rapid ave movement behavior disorder
c d		Patients with AD have more visuospatial impairment
u		None of the choice
e ^	65 .	None of the above
	05-y	behaviore and oriented to a paried of confusion and becomes upresponsive to questions but wide awake
are	d the	on back. Which of the following is consistent with the patient's symptoms?
2	*	Dementia with Lewy bodies
a b	-	AD
0		AD Darkinson's domentia
с 		Franklisoli S dementia
u a		Vacaular dementia
e w	hiah	v ascular dementia
VV I	men	Musslamus rever a source
a 1.	*	Nyocionus never occurs
D		Coit is reache on issue
C		The stickers of this demonstration become
a		The etiology of this dementia is known
e	00	None of the above
An	1 80	-year-old female with severe dementia, nallucinations, and Parkinson's features is found to be very
agi	itate	a, and her hallucinations are becoming worse. Which of the following would be the next best step?
a 1		Initiate antipsychotics
b	*	Initiate a psychiatry consult
C	*	Initiate acetylchonnesterase innibitors
a		
I P		Administer neuropsychological testing
•	70	Administer neuropsychological testing None of the above
A	78-	Administer neuropsychological testing None of the above year-old male who has dementia with Lewy bodies has severe agitation while being hospitalized.
A Do	78- <u>;</u>	Administer neuropsychological testing None of the above year-old male who has dementia with Lewy bodies has severe agitation while being hospitalized. ezil was ineffective. Which of the following medications would be the treatment of choice?
A Do a	78- <u>)</u> mep	Administer neuropsychological testing None of the above year-old male who has dementia with Lewy bodies has severe agitation while being hospitalized. ezil was ineffective. Which of the following medications would be the treatment of choice? Quetiapine
A Do a b	78- <u>)</u> onep *	Administer neuropsychological testing None of the above year-old male who has dementia with Lewy bodies has severe agitation while being hospitalized. ezil was ineffective. Which of the following medications would be the treatment of choice? Quetiapine Haloperidol

d		Lorazepam	
e		None of the above	
Wl	Which of the following may be the cause of depression in patients who have dementia with Lewy bodies?		
а		Damage to the locus ceruleus	
b		Axonal degeneration of the vagus nerve	
с		Psychological response to their impairment	
d		Depression is rarely seen in this type of dementia	
e	*	A and C	
Α.	56-y	rear-old male with a history of motor neuron disease presents with a gradual change in his personality per	
his	wi	fe. He was recently at a social gathering and suddenly became very disinhibited and took off all his	
clo	thes	and started making inappropriate jokes. Which of the following is consistent?	
a		The patient is acutely psychotic and should be evaluated by a psychiatrist	
b	*	This behavior is due to pyramidal cell loss in the frontal and temporal lobes	
с		This behavior is due to Lewy bodies in the basal ganglia	
d		This behavior is the patient's normal personality	
e		None of the above	
W	nich	of the following tests is an adequate bedside test for frontal lobe dysfunction?	
а		Montreal Cognitive Assessment	
b		Mini-Mental State Examination	
с		Antisaccade task	
d	*	A and C	
e		B and C	
A	56-v	rear-old male with a history of traumatic brain injury presents to the clinic. He is found to have abnormal	
dig	rit sr	ban forward and backward testing. Which of the following would meet criteria for abnormal digit span?	
a	<u> </u>	4/4	
b		7/2	
c	*	5/3	
d		6/1	
e		None of the above	
A	78-1	vear-old male with a long-standing history of dementia has had urinary incontinence. Which of the	
fol	low	ing areas could be the cause of the incontinence?	
a	*	Posterior superior frontal gyri	
b		Amygdala	
c		Left posterior temporal lobe	
d		Lateral medullary lesion	
e		None of the above	
Δ	59_v	rear-old male with a history of atrial fibrillation presents with an acute stroke. He is found to have abulia	
21.	wel	as some personality changes. There is a period of time that he is agitated and confused but then he	
nrc	ore	ses to abulia Which of the following is correct?	
<u>ргс</u> а	510	This is psychogenic and not organic	
h	*	Occlusion of the artery of Heubner	
C		Bilateral parietal lobe infarcts	
d		Hypertensive bleed in the left thalamus	
e	$\left \right $	None of the above	
Δ	45-v	rear-old male presents with a gradual decline of cognitive function. He is found to have anosmia loss of	
inh	i)-y ihit	ion memory difficulty and occasional visual changes. Which of the following could explain his	
SVI	nnte	ms?	
a		Basilar migraine	
h	*	Olfactory groove meningioma	
C	$\left \right $	Farly-onset AD	
с 	$\left \right $	Erontotemporal dementia	
u		None of the above	
C			

W	hich	of the following are frontal release signs?
а		Glabellar
b		Snout
с		Grasp
d		Palmomental
e	*	All of the above
Α	61-y	year-old male with progressive problems presents to the neurologist. He is found to have normal pressure
hy	droc	ephalus. Which of the following is not part of the classic syndrome of normal pressure hydrocephalus?
a		Incontinence
b		Dementia
с		Gait apraxia
d	*	Headache
e		All of the above are part of normal pressure hydrocephalus
An	80-	vear-old male is found to have communicating hydrocephalus on computed tomography (CT) scan of his
hea	ad. H	He has progressive difficulty with gait and memory. Which of the following is the most likely cause?
a		Overproduction of CSF
b	*	History of intraventricular hemorrhage
c		Venous drainage insufficiency
d		Aqueductal stenosis
e		None of the above
A	55-1	ear-old male presents with obstructive hydrocephalus. He is evaluated and treated by the neurosurgeon
wi	th a	ventriculoperitoneal shunt. Which of the following represents the amount of CSF he produces in 1 hour?
9 2		10 mL
h		1 mL
C	*	20 mJ
d		100 mI
u o		None of the above
<u>د</u>	<u>/0 x</u>	year old male with a recent diagnosis of minimal cognitive impairment is in your clinic. He is worried
tha	40-y it ha	may develop AD. Which one of the following choices represents his annual risk of developing AD^2
3		1% per year
a h	*	170 per year
0		50% per year
с 1		90% per year
u o		90% per year
e	22.2	None of the above
A	32-y	dream She is found to have had an acute starke with multiple areas of glissis in the subcertical white
Tac	1ai (aroop. She is found to have had an acute stroke with multiple areas of gliosis in the subcortical white
da	mer	predominately in the frontal lobe as well as in the basal gangita. She is noted to have some find the Which of the following would help confirm her diagnosic?
del	nen	Lemosysteine levels
ä L		Thursd status
U a	*	Notoh2 cone mutation
C	Ť	INOICHS gene mutation
a		C1 anglogram
e	4.5	
A ·	45-y	ear-old male presents with a history of chronic renal failure for 20 years. He has been on dialysis for that
per	r10d	of time. On examination, he is found to have dysarthria, myocionus, dementia, and some apraxia. Which
10	the 1	tollowing is the cause of the encephalopathy?
a 1		Medication
b		Elevated ammonia levels
C	*	Aluminum toxicity
d		Increased protein 14-3-3
e	Ľ	None of the above
Α	5-ye	ear-old boy presents to the clinic with a history of epilepsy, cognitive regression, and progressive

bli	blindness. A skin biopsy is done and demonstrates intracellular accumulation that is yellow-green in color and		
is f	luor	rescent. How did the boy get this disease?	
a		It is X-linked	
b		It is autosomal dominant	
с	*	It is autosomal recessive	
d		He has Trisomy 21	
e		None of the above	
A	9-ye	ear-old boy presents to the clinic with a history of staring spells about 20 times per day over the past 2	
mo	onths	s. There is no family history of seizure. An electroencephalography is performed and demonstrates a 3-	
Hz	spil	ke and wave during hyperventilation. Which of the following is the best next step?	
а		Order a magnetic resonance imaging brain scan	
b		Initiate phenytoin	
c	*	Initiate ethosuximide	
d		Report the family to social services	
e		There is nothing to do	
	1_10	ar-old girl presents with atayia and skin lesions. She is diagnosed with atayia-telangiectasia. What should	
the	+-yc	ar-old gill presents with ataxia and skill resions. She is diagnosed with ataxia-telanglectasia. What should	
0	par		
a h		Devel coll corringme	
D	*	Renal cell carcinoma	
C I	~	Death before age 20	
d		Pontine atrophy	
e		None of the above	
A	mot	her brings her 1-week-old daughter to your clinic and states her daughter's face is "crooked." As you	
eva	aluat	te the infant, you do not see any abnormalities, but she then starts crying and develops a right-sided facial	
dro	oop.	What is the best next step?	
a		Lumbar puncture	
b		Vitamin B12	
c	*	Echocardiogram	
d		Bone scan	
e		None of the above	
Pat	tient	s with craniofacial syndrome have an abnormality on what chromosome?	
а		1	
b		12	
с		16	
d	*	22	
e		2	
W	nich	of the following is not a cardinal feature of neuronal ceroid lipofuscinosis?	
3		Motor regression	
a h		Progressive blindness	
0		Enilongy	
4	*	Atoria	
a			
e			
A	12-y	ear-old boy is found to have a Chiari malformation type II. which of the following does he also have?	
a		Arachnoid cyst	
b		Intracranial hypotension	
c	*	Lumbar meningomyelocele	
d		Hypoplastic cerebellum	
e		All of the above	
Du	ring	gestation, at what week does gyri formation occur?	
a		6	
b	*	14	
c		24	

d		36
е		None of the above
A	fath	er brings his son in for a check-up. The child is able to wave hello, plays peekaboo, and can crawl and sit
wi	thou	t support. He has been developing appropriately. What age must he at least be?
a		8 weeks
h	*	8 months
C		12 months
d		24 months
u		24 months
e •	torm	None of the above
	bot r	r infant is found hypotonic and moderately weak at birth. Her mother has a history of myasthemia gravis.
VV I		10/
a h	*	1%
D		15% 50%
C		<u>50%</u>
d		99%
e		None of the above
In	the i	infant in the previous question, what is the next best step?
a		Administer treatment with oral medication
b	*	Supportive care
С		Plasma exchange
d		Intravenous steroids
e		None of the above
Α	neo	nate presents with a seizure. On lab testing, he is found to have low blood glucose. Which of the
fol	low	ing would not be the cause of the lab abnormality?
a		Glycogen storage disease
b		Fructose 1,6 diphosphatase deficiency
с		Maple syrup urine disease
d	*	Citrullinemia
e		None of the above
Α	neo	nate is born comatose and with lower cranial nerve damage. The most likely etiology is neonatal
asp	ohyx	tia. Which of the following would help support this diagnosis?
a	*	Enterocolitis
b		Normal hepatic enzymes
с		No evidence of irregular rhythm
d		Usually no meconium is passed
e		None of the above
WI	hich	of the following are causes of persistent hypoglycemia in a neonate?
а		Maternal diabetes
b		Prematurity
с		Asphyxia
d	*	Aminoaciduria
e		Intrauterine malnutrition
A	1-m	onth-old infant is found to have hypocalcemia. On further examination, she is found to have facial
abi	norn	nality and absent or low T cells. Which of the following chromosomes are linked with her abnormality?
a		1
h	\vdash	12
C		19
d	*	22
u e		None of the above
UX/1	hich	one of the following statements about primitive reflexes is true?
	men	Use of the following statements about prinning fellexes is und?
a L	*	Hand group reflex typically opposed by 24 works and disappears around 6 months of age
D	-,-	manu grasp renex typicany appears by 54 weeks and disappears around 6 months of age

c The Moro renex appears around 9 months and usually persists
d The parachute reflex appears around 9 months of age and disappears by age 2 years
e None of the above
A 6-year-old child presents with staring spells. She is diagnosed with absence seizures. Which of the following
could be used as monotherapy?
a Tiagabine
b Gabapentin
c * Lamotrigine
d Dilantin
e None of the above
A 3-year-old boy presents with worsening irritability, weight loss, and fever. There is a palpable abdominal
mass on examination. Imaging shows a large mass arising from the adrenal gland. Which of the following
paraneoplastic disorders is most classically associated with this type of tumor?
a Myasthenia gravis
b Stiff-person syndrome
c Myotonic dystrophy
d * Myoclonic encephalopathy of infants
e None of the above
What is the most common type of focal epilepsy in children?
a West syndrome
b Landau-Kleffner syndrome
c * Benign epilepsy with centrotemporal spikes (BECTS)
d Benign occipital epilepsy
e None of the above
A 13-year-old female presents with a history of choreoathetosis, dysarthric speech, grimacing, and awkward
gait, which have been slowly progressing since early childhood. She has telangiectasias on her eye examination.
Which of the following chromosomes is associated with this disorder?
a * 11
b 20
c 4
d 9
e None of the above
Which of the following is often associated with Landau-Kleffner syndrome?
a Absence seizures
b Rheumatoid arthritis
c * Electrical status epilepticus of sleep
d It is most often associated with an underlying tumor
e None of the above
A 9-year-old boy presents with episodes of dystonia. He is diagnosed with dopamine-responsive dystonia.
Which of the following is true?
a It occurs more often in boys than girls
b * It has a circadian pattern
c The patient has no signs of gait abnormalities
d It has no association with focal dystonias
e None of the above
Which of the following is not part of the triad that comprises the clinical elements of Lesch-Nyhan syndrome?
a * Uremia
b Neurologic impairment
c Uricemia
d Behavioral problems
e None of the above
A 5-year-old boy with swallowing difficulties is found to have a medulloblastoma. Which of the following is

tru	le?	
а		This is a type of glioma
b	*	It is primarily found in the posterior fossa
с		It is typically a hereditary disorder
d		Hydrocephalus rarely complicates the situation
e		None of the above
Δ	14-x	year-old female is diagnosed with neurofibromatosis type 1 (NF1). Which of the following is associated
wi	th N	(F1) F19
9		Ontic nerve glioma
a b		Inquinel freekles
0		Cofé en lait spots
C 4		Decuderation Spots
a	*	All of the choice
e	1 7	
A	15-y	ear-old boy presents to the office with complaints of frequent twitching of his right eye. He is diagnosed
W1	th m	notor tics. Which of the following is true?
a		Symptom onset should be younger than age 18
b	*	Females are more often affected than males
С		The symptoms usually resolve by the third decade
d		Tics are not suppressible
e		None of the above
W	hich	of the following is a core feature of pervasive developmental disorder?
a		Impaired social skills
b		Impaired verbal communication
с		Impaired nonverbal communication
d		Perseveration
e	*	All of the above
А	very	y small newborn is found to have a periventricular-intraventricular hemorrhage, which was noted to be
loc	cated	d at the germinal plate with some ventricular involvement. What grade would the hemorrhage be
cla	ssif	ied as?
a		Ι
b	*	II
С		III
d		IV
e		V
W	hich	of the following is/are possible causes for hypoxic-ischemic encephalopathy at birth?
а		Placental abruption
b		
c		Umbilical cord infarction
d	-	A and C
e	*	All of the above
W	hat i	is the predominant bacterial infection associated with peopatal meningitis?
		A TRATANATION TRATATANA TAUT URA A RATA ANALANA ANALAN WITT INA HIGI URA HIDI YATA '
9		Group A streptococcus
a b		Group A streptococcus Herpes simpley virus
a b		Group A streptococcus Herpes simplex virus
a b c	*	Group A streptococcus Herpes simplex virus Mycoplasma Group B streptococcus
a b c d	*	Group A streptococcus Herpes simplex virus Mycoplasma Group B streptococcus
a b c d e	*	Group A streptococcus Herpes simplex virus Mycoplasma Group B streptococcus N. meningitis
a b c d e W	* hat i	Group A streptococcus Herpes simplex virus Mycoplasma Group B streptococcus N. meningitis s the mortality rate associated with neonatal seizures?
a b c d e W	* hat i	Group A streptococcus Herpes simplex virus Mycoplasma Group B streptococcus N. meningitis s the mortality rate associated with neonatal seizures? 5%
a b c d e W a b	hat i	Group A streptococcus Herpes simplex virus Mycoplasma Group B streptococcus N. meningitis s the mortality rate associated with neonatal seizures? 5% 20%
a b c d e W a b c	hat i	Group A streptococcus Herpes simplex virus Mycoplasma Group B streptococcus N. meningitis s the mortality rate associated with neonatal seizures? 5% 20%
a b c d e W a b c d	hat i	Group A streptococcus Herpes simplex virus Mycoplasma Group B streptococcus N. meningitis s the mortality rate associated with neonatal seizures? 5% 20% 50%

aPOSTbAlpha rhythmc*c*triphasic waves (TWs)d3-Hz spike and waveeNone of the aboveWhich of the following would be consistent with a brain tumor located in the left parietal lobe?aSpike and wave discharges on the right hemisphereb*b*b*b*b*b*cPOSTcPOSTdPosterior dominant rhythm of 9 HzeNone of the aboveA32-year-old female is diagnosed with optic neuritis. A visual evoked potential is tested. Which of theb*aRetrochiasmatic lesions would be best detected with this testb*b*aCarbamazepine usually shortens the latency of this testcNone of the abovedCarbamazepine usually shortens the latency of this testeNone of the abovedCarbamazepine usually shortens the latency of this testeNone of the abovedTWsdTWseNone of the aboveAS-year-old male with an episode of confusion is found to have transient global amnesia. Which of the following would be consistent with this diagnosis on EEG?a*None of the aboveAS-year-old male with an episode of confusion is found to have transient global amnesia. Which of the following would be consistent with this diagnosis on EEG?d <td< th=""></td<>
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c Parkinson's disease d Progressive supranuclear palsy e None of the above
d Progressive supranuclear palsy e None of the above
e None of the above
Which of the following would be seen in a patient in stage I sleep (drowsy)?
a Sleep spindles
b Rapid eye movements
c * Slow roving eye movements
d Periodic leg movements
e None of the above
Which of the following are considered to be idiopathic generalized epilepsies?
a West syndrome
b * Juvenile myoclonic epilepsy
c Autosomal dominant frontal lobe epilepsy
d Lennox-Gastaut syndrome
e None of the above

W	hich	of the following are not considered EEG artifacts?
a		Eye movements
b		Glossokinetic
с		Sweat
d		Respiration
e	*	All of the above
Α	45-	year-old male with acute head trauma is encephalopathic. An EEG is performed and shows some
am	plit	ude asymmetry from one side to the other. Which of the following is a likely etiology?
a	Ĩ	Electrode malfunction
b	*	Underlying hematoma
с		History of seizures
d		Mesial temporal sclerosis
e		None of the above
Α	56-1	vear-old male with a recent stroke is undergoing transcranial magnetic stimulation in a research study to
see	e if ł	he can regain function. Which of the following would not be a contraindication?
а		Pacemaker
b		Recent head trauma
c		History of epilepsy
d		Metallic foreign body
e	*	None of the above: they all are contraindications
A	32-1	year-old female with a recent history of ontic neuritis undergoes visual evoked potentials. Which of the
fol	low	ing statements is true regarding the visual evoked potentials?
3	10	Amplitude will be decreased
h	*	Prolongation of the P-100
C		Amplitude will be increased
d		Shortened P-100
u o		None of the above
Δ	23 1	war old male presents after severe head trauma due to a motor vehicle accident. He is found to be
	23 - $\frac{2}{2}$	we and an EEG is performed. Which of the following would favor a better prognosis?
201	mau	Widespread continuous spindles
a h		Minimal reactivity
0	*	Spindle come with reactivity
d		Excessive alpha with no reactivity
u o		None of the above
e W	hich	of the following is the most common artifact scen on EEC?
W	mcn	Of the following is the most common artifact seen on EEG?
a 1	*	Muscle
D		Sharp waves
C 1		Alpha mythm
a		Sweat
e		
W	hich	of the following is often seen during rapid eye movement (REM) sleep?
a	<u> </u>	K-complex
b		Spindles
С	<u> </u>	POSTS
d	*	Sawtooth waves
e		None of the above
W	hich	of the following frequencies would be consistent with spindle activity on EEG?
a		4 Hz
b	*	14 Hz
с		20 Hz
d		50 Hz
e		None of the above

W	hich	of the following aspects of stage II sleep is true?
а		Rapid eye movements are seen.
b		Lowest electromyography (EMG) tone
с		Vertex sharp waves are required for this stage
d	*	Loud noises can cause K-complex
e		None of the above
A	12-1	year-old boy is found to be sleep walking and sleep talking regularly. His last sleep-walking episode led
hir	n to	leave the house, but he did not injure himself. Which of the following is true?
а	*	This occurred out of slow-wave sleep
b		This sounds like REM behavior disorder
c		Nightmares are the usual cause of sleep walking
d		The box must be awake and should seek psychological evaluation
e		None of the above
A	56-1	vear-old male is comatose after cardiac arrest. An EEG is performed using strict guidelines, and he is
de	eme	d to have electrocerebral inactivity. The intensive care team has told the family that he is brain dead
W	hich	of the following statements is true?
3		His core body temperature must be less than 32°C
h		He must be on sedation for his comfort
C		The nation must have passed the appeartest
d	*	He has no brain activity greater than 2 uV
u o		None of the above
W	hich	of the following are comptosensory evoked notentials (SSEDs) used in neurological patients?
vv	*	Prognosis in comatose nationts
a b		Evoluation for apilentic activity
0		Evaluation for epiceptic activity
4		Evaluating controspinal tract abnormalities
a		Spinal cord abiormanues are not evaluated using this modality
e Th	- NI	None of the above
1n 1:1	e n	20 is a critical value in the testing of SSEPs. In a patient with anoxic brain injury who has absent N20s
011		This is a near presentation
a h		All notients with sheart N20a always have had autoeneed
D		All patients with absent N20s always have bad outcomes
C		EEG is more sensitive in abnormalities in the spinal cord
a		A and B
e		None of the above
W	hich	of the following are determinants of mortality and morbidity in status epilepticus?
a		Etiology
b		Family history
C	<u>.</u>	Age
d	*	A and C
e		None of the above
In	whi	ch of the following would a brain stem auditory evoked response be useful?
a		Left parietal stroke
b	*	Demyelinating disease
С		Acoustic neuroma
d		B and C
e		All of the above
In	a pa	tient with AIDS dementia, which of the following is true?
a		Magnetic resonance imaging (MRI) readings of the brain are usually normal
b		EEG abnormalities precede memory difficulties
с	*	Computed tomography (CT) scan of the head usually shows atrophy
d		Antiretroviral medications have no improvement in AIDS dementia
e		All of the above

W	hat p	percentage of patients with focal slowing on EEG will have an abnormal MRI or CT scan of the head?
a		1%
b		10%
с		33%
d	*	70%
e		100%
RE	EM s	sleep seen during a routine daytime EEG can be due to which of the following?
a		Narcolepsy
b		Sleep deprivation
с		ETOH withdrawal
d		Withdrawal from a selective serotonin reuptake inhibitor (SSRI)
e	*	All of the above
W	hich	of the following are features on an EEG of a patient with rolandic epilepsy?
а		Focal spikes in the parietal region
b	*	Focal central-midtemporal sharp waves
с		Slow background rhythm
d		Focal intermittent delta
e		None of the above
W	hich	of the following is true of iuvenile myoclonic epilepsy?
3	*	Lifetime AFD usage
h		3-Hz spike and wave with hyperventilation on FEG
C		Photic stimulation has no effect on these patients
d		Responds well to ethosuvimide
e		None of the above
W	hat r	percentage of natients with herpes encephalitis have focal FEG changes?
3	liat j	10%
a b		2004
0		20% 50%
с d	*	80%
u	-	
	hiah	of the following represents breakiel playus integrity during a sematesensory evolved notantial?
VV I		N12 wowe
a h	*	N15 wave
D		
C		P14
a		N18
e		
W	hich	of the following waves is delayed on visual evoked potential in patients with optic neuritis?
a 1	*	N2U D 100
b	*	P-100
C		Wave I
d		Wave I to III interpeak
e		None of the above
W	hich	of the following is part of the principles of evoked potential recording?
a		A large electrical signal is recorded at the cortex
b	*	A small electrical signal is recorded at the scalp
С		A small stimulus is given in the spinal cord
d		Delayed responses arise from axonal damage
e		None of the above
W	hich	of the following lowers the seizure threshold?
a		Carbamazepine
b		Lamotrigine
с		Phenytoin

d '	*	Wellbutrin
e		None of the above
Whie	ch	one of the following is an irreversible reaction or very slowly reversible reaction of antipsychotic
medi	ica	tions?
a		Resting tremor
b		Dystonia
c *	*	Tardive dyskinesia
d		Sedation
e		None of the above
If co	m	paring tricyclic antidepressants to selective serotonin reuptake inhibitors (SSRIs), which of the following
state	eme	ents is true?
a		Patients on SSRIs usually have dry mouth
b		Tricyclic antidepressants have dopaminergic effects
с		SSRIs elevate norepinephrine levels
d '	*	Tricyclic antidepressants cause sedation
e		None of the above
Wha	t is	s the pathway that is involved with Parkinson's disease side effects of antidopaminergic agents?
a		Spinothalamic
b		Mesocortical
с		Mesolimbic
d '	*	Nigral striatal pathway
e		None of the above
Whie	ch	of the following inhibits prolactin?
a		Adrenocorticotropic hormone (ACTH)
b		Corticotropin-releasing hormone (CRH)
с		Thyrotropin-releasing hormone (TRH)
d '	*	Dopamine
e		Orexin
A 24	4-y	rear-old male with a history of seizures presents in status epilepticus. Which of the following agents
woul	ld	be considered first-line therapy?
a		Valproate
b '	*	Lorazepam
с		Clonazepam
d		Ethosuximide
e		None of the above
Whie	ch	of the following antiepileptic drugs has similar properties as tricyclic antidepressants?
a		Topiramate
b		Lamotrigine
c '	*	Carbamazepine
d		Clonazepam
e		None of the above
A 13	3-y	ear-old boy with a history of seizure disorders presents with aplastic anemia. Which one of the following
medi	ica	tions could he be on?
a		Lamotrigine
b		Diazepam
c *	*	Felbamate
d		Gabapentin
e		None of the above
An 8	87-	year-old male with a history of Parkinson's disease has been on dopamine agents for the past year.
Whie	ch	one of the following has more peripheral effects than central effects?
a		Bromocriptine
b	_T	Pergolide

с	*	Carbidopa
d		Trihexyphenidyl
e		Levodopa
WI	hich	of the following has antiemetic effects via serotonin receptor blockade?
а		Prochlorperazine
b		Promethazine
с		Metoclopramide
d		Scopolamine
e	*	Ondansetron
W	hich	of the following agents has the least amount of sedation as a side effect?
a		Doxenin
b		Amitriptyline
c	*	Protriptyline
d		Amoxapine
e		Clomipramine
A	56-1	ear-old male with early-onset Parkinson's disease is evaluated and placed on medication. Which one of
the	e foll	lowing irreversibly inhibits monoamine oxidase type B?
a		Phenelzine
h		Paroxetine
C		Maprotiline
d		Bupropion
e	*	Selegiline
Δ	45-3	rear-old male with a history of severe depression is started on phenelzine. Which one of the following
wo	nd mld	not be recommended?
900 2	*	Sertraline
h h		Isocarboyazid
C C		Alprazolam
d		Bupropion
u A		Gabapentin
	24 x	babapentin war old famale with a saizure disorder is started on valproic acid. Which one of the following also has a
л. sin	04-y nilar	mechanism that results in inducing its own metabolism?
3111	mai	Gabapentin
a b		Ethosuvimide
0		Dhenytoin
с 	*	Lamotriging
u o	-	None of the showe
4	15 1	None of the above
	4J-y hiah	one of the following agents has the longest half life?
0		Drimidono
a h	*	Phonobarbital
0	·	Cebenentin
с 4		Gabapentin
u o		Deputoin
e ^	40.7	Phenytonn
A fol	40-y 1	rear-old male with a history of imgraines uses sumatriplan when he has a migraine. Which one of the
101	IOW	D2
a L		Do Museerinie eestuleheline
D		Inhibits the rountely of common aminohyteric acid (CADA)
C	*	minous me reuptake of gamma-ammooutyric acid (GABA)
a	Ť	Off11 My reconstant in the animal could
e 7		Mu receptors in the spinal cord
5-ł	HT i	mbalance has not been associated with which one of the following conditions?
a		Depression

b * Narcolepsy
c Attention deficit disorder
d Headaches
e All of the abovek
A 22-year-old male presents with a long-standing history of seizures. He is given diazepam for a recent seizure.
Which of the following is a true statement?
a * GABA receptors regulate the Cl- ion channel
b Diazepam has not been shown to be effective in the treatment of seizures
c Diazepam also binds to dopamine receptors
d GABA receptors are on a 16-subunit complex
e None of the above
Which of the following agents are considered opiate receptor agonists or associated with opiates?
a Endorphins
b Dynorphins
c Enkephalins
d Pro-oniomelanocortin
e * All of the above
Which one of the following is associated with glutamate?
a Tribexynbenidyl
b Pergolide
c * Riluzole
d Pimozide
a None of the above
Which one of the following triavelic antidepressants has the longest half life?
which one of the following theyene antidepressants has the foligest han-me?
a Implaime
0 Filellelizitie a * Drotriptyling
d Monostiling
u Maprounne v Name of the share
e None of the above
A 58-year-old lemale with a history of schizophrenia presents in a coma, with a lever and rigidity. She is
and agnosed with neuroleptic mangnant syndrome. Which one of the following agents could have caused this?
a * Chiorpromazine
b Theophylline
c I heobromine
d Pemoline
e None of the above
Which one of the following agent's elimination is enhanced by smoking?
a Methylphenidate
b * Caffeine
c Maprotiline
d Fluvoxamine
e None of the above
A 21-year-old male presents with an amphetamine overdose. Which one of the following would be
recommended in the treatment of the overdose?
a Acidifying the urine
b Chlorpromazine
c Clonidine
d Guanfacine
e * All of the above
An 84-year-old male with Parkinson's disease presents to the clinic. Which one of the following could be used
as an adjunct to his L-dopa?
a Trihexyphenidyl

b		Benztropine
с		Procyclidine
d		Biperiden
e	*	All of the above
A 4	40-y	vear-old male presents with alcohol withdrawal. Which one of the following agents has the longest half-
life	?	
a		Midazolam
b		Temazepam
с	*	Chlordiazepoxide
d		Alprazolam
e		None of the above
A 4	12-v	rear-old male presents to his neurologist complaining of right arm weakness that has progressed over the
pas	st 2	vears. He states he occasionally feels some tingling in that same arm. The examination shows atrophy
and	1 fas	sciculations of his arm and weakness. His reflexes are normal, and his sensory examination is normal.
Wł	nat v	would be the findings on his electrodiagnostic studies, and what would be the treatment of choice?
а		Decrease amplitude of the sensory nerve action potential amplitudes (SNAPs): intravenous
		immunoglobulin (IVIG)
b		Conduction block: methylprednisolone
c	*	Fifty percent reduction in compound muscle action potential (CMAP) amplitude and area: IVIG
d		Normal sensory studies: cyclophosphamide
e		Absent H-reflex: steroids
Wł	nat a	intibody is found in myasthenia gravis patients with negative AchR antibodies?
a	lut t	Anti-GAD antibody
h	*	MuSK antibody
C		Anti-Hu antibody
d		Anti-GO1b antibody
u o		None of the above
	$\frac{1}{24}$	year old male diagnosed with HIV was found to have increased musicing in the provinging log regions.
	24-y	weat-old male diagnosed with first was found to have increased invarging in the proximal leg regions
fib	arci	ware seen. It was recommended that the patient discontinue one of his antiretrovirals. What also may be
		ted to help improve the provimal leg weakness?
Sug	ges	Visit a physical therapist to improve his strength in the lower extremities
a b		Visit a physical inclapist to improve his strength in the lower extremities
0	*	Adding continents has been shown to improve the weakness in some patients
с 4		Adding controsteroids has been shown to improve the weakness in some patients
a		Notining else can be done, and there has been evidence that ms disease process will accelerate
e	6	None of the above
All	10	these neuromuscular disorders are often preceded by gastrointestinal (GI) symptoms EXCEPT:
a 1		Intermittent porphyria
b		Botulinism
C 1		Lead poisoning
d		Arsenic intoxication
e	*	Rabies
Du	plic	ation of the PMP22 gene on chromosome 17p11 results in:
a		Hereditary sensory and autonomic neuropathy (HSAN) type V
b	*	Hereditary neuropathy with liability to pressure palsies (HNPP)
С		Charcot-Marie-Tooth disease type 1A (CMT 1A)
d		Charcot-Marie-Tooth disease type 1B (CMT 1B)
e		None of the above
Wł	nich	of the following toxins causes hair loss, arthralgias, GI symptoms, and an axonal sensorimotor
neu	ırop	athy (predominately sensory)?
a		Mercury
b		Lead

с	*	Thallium
d		Ethylene glycol
e		None of the above
A	l of	these are typical of amyloid neuropathy, EXCEPT:
а		Autosomal dominant inheritance
b	*	Occurs frequently below the age of 40
с		Motor findings are usually minimal
d		Course is slow and steady
e		Forty percent of patients have M-protein in their serum protein electrophoresis (SPEP)
Tł	ne m	echanism of action of nitric oxide damage to the spinal cord is:
a		Calcium channel blockade
b		Direct toxicity to the spinothalamic tracts
c		Prolonged opening of sodium channels
d	*	Cobalamin inactivation
e		None of the above
A	1 of	the following are related to CMT type IV_EXCEPT:
21	*	Autosomal dominant inheritance
h		Accumulation of phytanic acid
C		Retinitis nigmentosa
d		High consensuinity rate
u e		None of the above
W	hich	of the following are inherited forms of autonomic neuronathy?
••		Amyloidosis
a b	*	Shy Drager syndrome
0		Chagas' disease
с 1		Chagas disease
u		Dishetee
e	15 -	Diabetes
A	43-y	ear-old male presents with complaints in ms fourth and fifth digit on ms right hand having numbress and
ui no	igiini	g. He has also houced his fifth digit gets caught in his pants when he tries to put his hand in his pant.
pc o		Which of the following is the possible site of pathology for this patient?
a h		
D		
C		Femoral groove
a		
e	<u> </u>	None of the above
Th	ie la	teral cutaneous femoral nerve has motor function of which of the following muscles?
a		Serratus anterior
b		Adductor magnus
С		Sartorius
d		Rectus femoris
e	*	None of the above
A	23-y	year-old male with a recent history of an upper respiratory illness presents with progressive weakness. He
is	diag	nosed with Guillain-Barré syndrome. Which of the following supports the diagnosis?
a		Areflexia
b		Progressive weakness
С		Relative symmetry
d		Absence of fever
e	*	All of the above
A	56-	year-old male presents with distal weakness, tongue fasciculations, and atrophy in two limbs. He is
di	agno	sed with amyotrophic lateral sclerosis (ALS). What is the percentage of ALS that is familial in nature?
a		1%
b	*	10%

0		750/
с 1		0004
u o		90% None of the shove
e W	1.	None of the above
W	nicn	of the following is the most common heredity heuropathy?
a 1	*	Hereditary motor sensory neuropatny type 1
b		Guillain-Barre syndrome
С		Lambert-Eaton myasthenic syndrome (LEMS)
d		Postural tachycardia syndrome (POTS) disease
e		Diabetes
A .	35-у	rear-old female with muscle cramps and weakness is found to have polymyositis. Which of the following
mu	iscle	es will not be involved?
a		Cardiac muscle
b		Distal hand muscles
с		Proximal leg muscles
d	*	Ocular muscles
e		None of the above
Α	60-y	vear-old male with numbness and tingling in his feet presents to your clinic. He has had diabetes for 10
yea	ars.	Which of the following is the most common manifestation of diabetic neuropathy?
а		Small fiber neuropathy
b	*	Distal symmetric polyneuropathy
с		Diabetic autonomic neuropathy
d		Diabetic neuropathic cachexia
е		None of the above
A	20-v	year-old female presents with acute weakness and is found to be in tetany with carpopedal spasm. Which
on	e of	the following could be a cause of her symptoms?
а		Hyperthyroidism
b		Hypopituitarism
С		Hyperparathyroidism
d	*	Hyponarathyroidism
e		Polymyalgia rheumatica
Δ	30_3	roryinguigia meanatica
hay	ve n	rogressively worsened. Which one of the following is true?
2		This is most commonly idionathic, and nothing further needs to be done
a h	*	It is unusual at her age and may be a sign of multiple sclerosis
0		Homimosticatory space is not analogous to homifocial spaces
с 1		Fetigue or reading youally improves the symptoms
u		All of the above are true
e W	1.	All of the above are true
VV	ncn	Discretized and distal weeks are after invested.
a 1		Proximal and distal muscles are often involved
b		Cardiac disease is common
С		Dysphagia is common
d	*	The disease is typically symmetrical
e		None of the above is associated with IBM
Ke	nne	dy's disease is associated with which of the following?
a	*	Lower motor neurons
b		Upper motor neurons
с		Eye musculature
d		Sporadic
e		A and B
Α	65-	year-old male with a long history of smoking presents with weakness. An electromyography/nerve
con	nduc	ction study (EMG/NCS) is performed, and the patient is found to have LEMS. Which one of the

following is associated with LEMS?

b * Voltage-gated calcium channel antibody c Anti-Jo d Campylobacter jejuni infection e Anti-GQ1B antibody A 21-year-old female with myasthenia gravis is on immunosuppressant agents. Which one of the foll would place her in class V rating? a Oropharyngeal muscle involvement b Limb or axial muscle involvement	
c Anti-Jo d Campylobacter jejuni infection e Anti-GQ1B antibody A 21-year-old female with myasthenia gravis is on immunosuppressant agents. Which one of the foll would place her in class V rating? a Oropharyngeal muscle involvement b Limb or axial muscle involvement	owing
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would place her in class V rating? a Oropharyngeal muscle involvement b Limb or axial muscle involvement	
a Oropharyngeal muscle involvement b Limb or axial muscle involvement	
b Limb or axial muscle involvement	
c * Intubation	
d Feeding tube	
e None of the above	
A 15-year-old male with periodic paralysis would have which one of the following channel defects?	
a Sodium	
b Calcium	
c Potassium	
d A and C	
e * All of the above	
A patient presents with increasing muscle rigidity and stiffness. She is found to have stiff syndrome. Wh	ich of
the following is an associated antibody with this disorder?	
a Anti-GO1b antibody	
b * Anti-GAD antibody	
c Anti-Hu antibody	
d HLA-DOB106	
e None of the above	
A 25-year-old female presents to the clinic with neck stiffness, fever, and headache. She is found to	have
aseptic meningitis. Which one of the following is most likely the cause?	
a Lyme disease	
b Sarcoidosis	
c * Coxsackievirus	
d Adenovirus	
e None of the above	
A 45-year-old female with a history of AIDS develops encephalopathy. Which one of the following is the	most
common cause for encephalopathy in AIDS patients?	
a * Toxoplasmosis	
b Herpes	
c Medication side effects	
d Staphylococcus aureus	
e None of the above	
A 29-year-old male with a history of AIDS is diagnosed with progressive multifocal leukoencephale	pathy
(PML). Which of the following is true?	1 2
a PML damages white matter of the brain including U-fibers	
b PML is diagnosed only by brain biopsy	
c * Polymerase chain reaction (PCR) for the John Cunningham (JC) virus shows high specificity	
d Highly active antiretroviral therapy (HAART) has not shown benefit for AIDS patients	
e None of the above	
A 45-year-old male who recently traveled to South Korea is found to have a headache. encephalonathy.	nd an
acute infection with brucellosis. Which of the following is another possible neurologic complication?	
a Bell's palsy	
b Trigeminal neuralgia	
c Exophthalmos	
d * Sensorineural hearing loss	

e		None of the above			
Wł	Which of the following is the most common virus associated with neonatal herpes encephalitis?				
а		Human herpesvirus-6 (HHV-6)			
b		Herpes simplex virus-1 (HSV-1)			
с		Human immunodeficiency virus (HIV)			
d		Human T-cell lymphotropic virus (HTLV-1)			
e	*	Herpes simplex virus-2 (HSV-2)			
Pat	tient	is treated for herpes encephalitis often have neurologic sequelae. Which one of the following is the most			
cor	nmo	on sequelae?			
a		Hemiparesis			
b		Developmental delay			
с	*	Seizures			
d		Stroke			
e		Hematoma			
Pri	or to	o effective immunizations, which one of the following was one of the most common causes of bacterial			
me	ning	gitis but is currently seen much less often and rarely occurs in children over age 5?			
a		Neisseria meningitidis			
b		Streptococcus pneumoniae			
с		Escherichia coli			
d		Listeria monocytogenes			
e	*	Haemophilus influenzae			
A 3	34-y	vear-old male complaining of muscle pain is found to have pyomyositis. What is the most likely location			
of	his a	abscess?			
a		Psoas			
b	*	Quadriceps			
с		Biceps			
d		Triceps			
e		All of the above			
Wł	nich	one of the following is the most common neurologic manifestation of acute Lyme disease?			
a	*	Cranial neuropathy			
b		Meningitis			
с		Cerebritis			
d		Radiculopathy			
e		Radiculopathy			
Α :	54-y	vear-old male from Connecticut presents with a rash and history of tick bite. What percentage of patients			
wit	th L	yme disease have erythema migrans at the site of the tick bite?			
a		5%			
b		25%			
c		50%			
d	*	90%			
e		None of the above			
А	pati	ent presents with acute meningitis. She is found to have meningococcal meningitis. Which of the			
fol	low	ing is true?			
a		The patient is most likely 60 years old			
b		Smoking does not increase the risk of disease			
с	*	The patient must be in high school			
d		Irritability is unlikely in the patient			
e		None of the above			
Which of the following is associated with Waterhouse-Friderichsen syndrome?					
a		Disseminated intravascular coagulation (DIC)			
b		Large petechial hemorrhage			
C		Fever			

d		Septic shock	
e	*	All of the above	
A 3	34-y	ear-old Hispanic male presents with new-onset seizures. He is found to have neurocysticercosis. Which	
of	the f	following is the most likely etiology?	
а		HIV	
b		HSV	
с	*	Taenia solium	
d		Coccidiomycosis	
e		None of the above	
Wł	nich	of the following is the only reliable way of confirming the diagnosis of neurocysticercosis?	
а		Computed tomography (CT) scan of the head with and without contract	
b		Magnetic resonance imaging (MRI) of the brain with and without gadolinium	
с		Plain X-ray of the skull	
d		Whole body bone scan	
e	*	None of the above	
A 4	15-v	ear-old male presents with an acute stroke. He is found to have endocarditis. Which one of the following	
is t	he r	nost likely organism?	
а		Enterococcus species	
b	*	Streptococcus viridans	
с		HSV type II	
d		Pseudomonas	
e		None of the above	
Wł	nich	of the following is the most common neurologic examination finding in neurosyphilis?	
а		Optic atrophy	
b		Charcot's joint	
c		Romberg's sign	
d	*	Hyporeflexia	
e		None of the above	
A :	56-v	rear-old male with progressive dementia is found to have sporadic prion disease. What is the most likely	
cau	ise.	and what is the mean duration of mortality?	
а		Sporadic fatal insomnia: 6 months	
b		Scrapie: 12 months	
c	*	Sporadic Creutzfeldt-Jakob disease (CJD): 8 months	
d		Familial fatal insomnia: 12 months	
e		None of the above	
A	34-1	vear-old female presents with acute onset of vertigo, tinnitus, and facial paresis. She is diagnosed with	
Ra	msa	v Hunt syndrome. Which of the following is associated with this disease?	
а		HIV	
b		Coxsackie virus	
с		Borrelia	
d	*	HSV III	
e		HSV III	
A f	55-v	ear-old male with a history of IV drug abuse presents with fever, back pain, incontinence, and is found to	
hay	ve ai	n epidural abscess. Which of the following is true regarding epidural abscess?	
a		Fever is present in 10% of cases	
b	*	Fever is present in 33% of cases	
с		Fever is present in 75% of cases	
d		Fever is present in all cases.	
e		None of the above	
A	35-1	rear-old male presents with bacterial meningitis. Which of the following tests has a prognostic value in	
bac	bacterial meningitis?		
a	_	Cerebrospinal fluid (CSF) leukocyte count	

b		Serum protein
с		CSF glucose
d	*	CSF lactate dehydrogenase
e		CSF protein
W	nich	of the following is the most common cause of subdural empyema?
a		Pulmonary spread
b		Trauma
с		Postsurgical
d	*	Paranasal sinusitis
e		None of the above
W	nat c	often causes tropical ataxic neuropathy?
a	*	Malnutrition
b		Virus
с		Trauma
d		Diabetes
e		Genetic disorder
W	nich	of the following is the strongest risk factor for Mycobacterium tuberculosis to progress into active
tub	ercu	ulosis (TB)?
a		Smoking
b	*	HIV coinfection
с		Hx of lymphoma
d		Chronic obstructive pulmonary disease (COPD)
e		None of the above
Α	23-	year-old male with sudden onset of fever, personality change, and confusion is found to have HSV
ene	ceph	alitis. What is the mortality rate of this disease if it is untreated?
а		1%
b		20%
с	*	70%
d		100%
e		None of the above
W	nich	of the following is part of the clinical triad associated with CNS Whipple's disease?
а		Dementia
b		Vertical ophthalmoplegia
c		Myoclonus
d		A and C
e	*	All of the above
W	nich	one of the following is associated with a trinucleotide repeat expansion?
a		Tuberous sclerosis
b		McCardle's disease
c	*	Myotonic dystrophy
d		Sjögren's syndrome
e		Acute intermittent porphyria
Yc	u ez	xamine a child with weakness, wasting of the calf muscles, and diminished ankle reflexes. On nerve
con	nduc	ction study, you find severe slowing of the conduction velocity. Several of the patient's relatives have had
sin	nilar	symptoms, including the patient's father as well as three of her four siblings. This disease is most likely
is a	asso	ciated with which chromosome?
a		1
b		12
С		6
d	*	21
e		X linked
A	vari	ant of the apolipoprotein E (apoE) gene has been linked withincreased risk of Alzheimer's disease. On

wh	ich	chromosome is thisgene found?	
а		1	
b		X	
с	*	19	
d		23	
e		6	
Α	pati	ent is diagnosed with mitochondrial myopathy, encephalopathy, lactic acidosis, and stroke (MELAS),	
wh	ich	is a mitochondrial genetic disorder. Which of the following medications should be avoided?	
а		Warfarin	
b	*	Valproic acid	
с		Aspirin	
d		Gabapentin	
e		Leviteracitam	
A	pat	ient is diagnosed with cerebral autosomal dominant arteriopathy with subcortical infarcts and	
leu	koe	ncephalopathy (CADASIL). Which of the following is true?	
a		Pseudobulbar palsy is a rare complication	
h	*	Mutation of the Notch3 gene	
c		Skin bionsy is diagnostic	
d		Strokes are rare complications	
u e		None of the above	
Th	e tr	iad of dysmorphic features, periodic paralysis, and cardiac arrhythmias is part of Anderson-Tawil	
svr	o u ndro	me This syndrome is associated with what mutation?	
a		Sodium channel gene	
a h	*	Potassium channel gene	
0		Dopamine synthesis gene	
с 		Triple repeat disorder	
u		V linked recessive	
e Th	0.00	A-IIIKeu recessive	
111	e ma	A Junkod moonsing	
a h		A-IIIKed recessive	
0		Autosomai dominant	
C	4		
a	*	Autosomal recessive	
e		None of the above	
Ne	urol	fibromatosis type 2 (NF2) is associated with meningiomas and acoustic neuromas (often bilateral). NF1	
has	s bei	ter prognosis and is associated with a lower incidence of central nervous system (CNS) tumors. The NF1	
gei	ne co	odes for neurofibromin. What is the function of this protein?	
a 1	.14	A I Pase associated	
b	*	1 umor suppressor	
c		Pro-oncogene	
d		cAMP associated	
e		None of the above	
NF	'l is	inherited in what fashion and is associated with which chromosome?	
a		AR: 15	
b	*	AD: 17	
С		AD: 22	
d		X-linked	
e		AR: 9	
Du	Duchenne's muscular dystrophy (DMD) is the most common type of muscular dystrophy. Which statement is		
true?			
a		Spontaneous transmission is the most common	
b		Autosomal dominant transmission is the most common	
с	*	X-linked transmission is the most common	

d		The size of the mutation increases the severity of the disease	
e		Missense mutation is the most common cause of DMD	
W	hich	of the following is the most common hereditary ataxia syndrome?	
а		Vitamin E deficiency	
b		Refsum disease	
с	*	Friedreich's ataxia (FA)	
d		Hereditary motor and sensory neuropathy	
e		None of the above	
A	20-y	vear-old female with progressive ataxia and gait disturbance is found to have FA. Which of the following	
is t	true'	?	
а	*	Almost 100% of patients are wheelchair bound by age 45	
b		It is inherited in an autosomal dominant fashion	
с		It is most prevalent in the African American populations	
d		The average age of onset is 40 years old	
e		None of the above	
W	hich	chromosome does the frataxin gene expansion occur on?	
a		2	
b	*	9	
с		12	
d		21	
e		14	
A	30-x	ear-old male with hx of Huntington's disease (HD) has a father who recently passed away at age 50 with	
the	e sar	ne disease. Which of the following is true?	
a	*	There will be gross atrophy of the caudate and putamen	
b		Patients with HD only have chorea and no bradykinesia	
с		Dementia is a rare complication of HD	
d		Juvenile HD accounts for the majority of patients with this disease	
e		None of the above	
W	hich	of the following is not considered part of the differential diagnosis of HD?	
а		Wilson's disease	
b		Neuroacanthocytosis	
с		Lupus	
d		Thyroid disease	
e	*	All of the above are part of the differential	
А	pati	ent with a well-known family history of Alzheimer's dementia (AD) starts developing memory issues.	
W	hich	of the following is true regarding familial AD?	
a		There have been no genes associated with this disorder	
b	*	There are four major loci that have been found associated with AD	
с		Lipoprotein E epsilon 3 has been a known risk factor	
d		Down syndrome patients are protected from AD	
e		None of the above	
W	hich	of the following statements is true regarding episodic ataxia type 1 and 2?	
a	*	Episodic ataxia type 1 is associated with continuous myokymia	
b		Episodic ataxia type 1 and 2 are autosomal recessive disorders	
с		Episodic ataxia 1 is autosomal recessive, and type 2 is autosomal dominant	
d		Episodic ataxia type 1 is associated with hemiplegic migraines	
e		None of the above	
Α	25-1	year-old female patient presents with cerebellar ataxia, night blindness, and degeneration of the retina.	
Sh	e a	lso has polyneuropathy and sensorineural deafness. A lumbar puncture (LP) is performed, and	
cei	cerebrospinal fluid (CSF) protein is elevated. Which of the following is true?		
a		Steroid therapy should be instituted immediately	
b		This is inherited in an autosomal dominant pattern	

с	*	There will be elevated phytanic acid in the plasma and urine		
d		There is no treatment for this disorder		
e		None of the above		
Wł	nat i	s the most common genetic alteration associated with meningiomas?		
a		Defect on chromosome 1		
b	*	Loss of NF2 gene on chromosome 22		
с		Trisomy 21		
d		Monosomy 8		
e		None of the above		
Wł	nich	of the following is or are part of the differential diagnosis for Kennedy's disease?		
а		Amyotrophic lateral sclerosis (ALS)		
b		Myasthenia gravis		
с		Syphilis		
d		Spinal muscular atrophy		
e	*	All of the above		
Wł	nich	of the following is the most common misdiagnosed disease in Kennedy's disease?		
a	*	ALS		
b		Myasthenia gravis		
с		Syphilis		
d		Spinal muscular atrophy		
e		Inclusion body myositis		
А	15-v	year-old girl presents after having a generalized tonic-clonic seizure. She has noticed that, when she		
bru	she	s her teeth or combs her hair in the morning, she occasionally experiences a brief jerking movement in		
her	up	per extremities. Past medical history is otherwise unremarkable. Her father was also diagnosed with		
epi	leps	y as a teenager, and he remains on antiepileptic medication. The patient's examination findings are		
nor	mal	. You obtain an electroencephalogram (EEG), which reveals occasional generalized bilateral polyspikes		
and	l spi	ike wave complexes at 4 Hz. Which of the following statements is true?		
a		This disorder has an abnormality on chromosome 2		
b		This disorder is inherited in an autosomal recessive pattern		
с		This disorder is not genetic but sporadic		
d	*	This disorder is inherited in an autosomal dominant fashion		
e		None of the above		
A	21-y	ear-old male presents with confusion, memory difficulty, and psychosis. He is diagnosed with extensive		
wh	ite i	natter changes, and on magnetic resonance imaging (MRI), he is found to have elevated urine sulfatide.		
Wł	nich	of the following is true regarding the genetics of this disorder?		
a		Autosomal dominant		
b		Chromosome 1p		
с	*	Autosomal recessive		
d		Sporadic		
e		None of the above		
A	2-m	onth-old boy presents with severe nystagmus, titubation, and weakness. At 3 months, he developed ataxia		
and	l co	gnitive delay. The patient is found to have Pelizaeus-Merzbacher disease. This disease is caused by a		
mutation on the PLP1 gene. Which chromosome is associated with this gene?				
a		1		
b		21		
c		12		
d	*	X		
e		None of the above		
Wi	Wilson's disease is inherited in an autosomal recessive fashion and is associated with chromosome Which of			
the	the following is true?			
a		Patients have elevated serum copper levels		
b	*	Patients have low ceruloplasmin levels		

с		Patients have decreased urinary copper levels	
d		The liver function test results are normal	
e		None of the above	
W	hich	of the following has been associated with polyostotic fibrous dysplasia, hyperpigmented skin macules,	
and	d pro	ecocious puberty?	
а		Gardner's syndrome	
b		Hand-Schüller-Christian disease	
с	*	McCune-Albright syndrome	
d		Guillain-Barré syndrome	
e		None of the above	
Of	all 1	primary tumors, which one has the most predilection toward metastasizing to the brain?	
91 2	un	I ung	
h		Breast	
C	*	Melanoma	
d		Colon cancer	
u o			
	hich	of the following primary types account for the majority of all metastatic brain types?	
vv I	*	Ung	
a h	<u> </u>	Dung	
D		Breast	
C			
a			
e		Lymphoma	
A	patio	ent is found to have metastatic cancer to the brain. Which of the following besides headache is the most	
CO	mme	on presenting symptom?	
a		Stroke	
b		Hemorrhage	
С	*	Seizure	
d		Nausea	
e		None of the above	
Α	pati	ent is found to have a brain stem glioma. More than 75% of these tumors are in patients in what age	
gro	oup'?		
a	*	0 to 20	
b		21 to 40	
с		40 to 60	
d		Over 60	
e		None of the above. They occur in all age groups equally	
А	56-y	year-old Caucasian female is found to have metastatic brain cancer. On imaging studies, the lesions are	
he	mor	rhagic. Which of the following would be a possible primary tumor?	
a		Lymphoma	
b	*	Melanoma	
с		Meningioma	
d		Neurofibroma	
e		Schwannoma	
W	hich	of the following is the most common endocrine dysfunction seen with craniopharyngiomas?	
а		Adrenal failure	
b	*	Hypothyroidism	
с		Diabetes insipidus	
d		Diabetes mellitus	
e		None of the above	
Δ	Δ nations with a retrochiasmal cranion parynoisma is associated with hydrocan halus. Which of the following is		
also associated?			
213	- as *	Horizontal double vision	
a			

b		Seizures	
с		Electrolyte abnormalities	
d		Amenorrhea	
e		Orthostatic hypotension	
W	hich	of the following treatments for ependymomas is considered the most effective therapy?	
а		Monitor closely	
b	*	Surgical excision	
с		Chemotherapy	
d		Radiation	
e		None of the above	
W	hich	of the following is the most common type of primary brain tumor?	
а		Lymphoma	
b	*	Glioblastoma multiforme (GBM)	
с		Meningioma	
d		Pituitary adenoma	
e		None of the above	
W	hich	of the following has the highest potential for increasing the risk of secondary glioblastoma?	
a	*	Hx of whole brain radiation	
b		Hx of multiple computed tomography (CT) scans	
c		Cellular telephone use	
d		Hx of chemotherapy	
e		Hx of head trauma	
W	hich	of the following is the most common clinical manifestation of glioblastoma multiforme?	
а а		Headache	
h		Seizure	
C		Focal neuro deficit	
d		Mental status change	
e	*	All of the above occur in almost equal frequency	
W	hich	of the following tumors most commonly metastasizes to the leptomeninges?	
3		Small cell lung cancer	
h	*	Adenocarcinoma	
C		Breast	
d		Lymphoma	
e		None of the above	
Δ	76-1	vear-old male with a history of adenocarcinoma is found to have leptomeningeal carcinomatosis. The	
far	70- <u>:</u> nilv	and the patient decide they do not want any treatment. What is the usual mortality associated with	
1111	treat	ed nations?	
a	*	1 month	
h		6 months	
C C		1 vear	
d		5 years	
e		None of the above	
Pa	tient	ts with known leptomeningeal carcinomatosis usually can have multiple presenting complaints. Which of	
the	fol	lowing is one of the most common complaints?	
a		Memory loss	
h		Incontinence	
C		Sensory loss	
d	*	Seizures	
u o		$\Delta \parallel \text{of the above}$	
	68 -	All of the above	
	well as neck and back pain with nuchal rigidity. The patient is found to have leptomeningeal carcinomatorie		
	n a' hiob	of the following is the most common area of the central nervous system (CNS) that is involved?	
VV.	men	or the following is the most common area of the central hervous system (CNS) that is involved?	

а	*	Cranial nerves	
b		Spinal root	
с		Cerebral hemisphere	
d		Anterior horn cells	
e		None of the above	
A	68-y	vear-old male with a history of melanoma cancer is found to have complaints of headaches, diplopia, and	
neo	ck a	nd back pain with nuchal rigidity. The patient is found to have leptomeningeal carcinomatosis. Which of	
the	fol	lowing is the next best test to confirm the diagnosis?	
а		Magnetic resonance imaging (MRI)	
b		CT scan	
с		Biopsy	
d	*	Spinal tap	
e		None of the above	
W	nich	of the following is probably the most common CT scan finding with oligodendrogliomas?	
a		Fat	
h	*	Calcifications	
c c		Cyst	
d		"Fried egg" appearance	
u e		None of the above	
W	nat r	Dercentage of all intracranial tumors are nituitary tumors?	
9		1%	
a h	*	15%	
0		45%	
4		45%	
u		90%	
e W	la	Note of the above	
VV I	ncn	Encouring is the most lethal complication of pituitary tumors?	
a 1		Excessive prolactin	
b		Decreased growth hormone	
C	Ŷ	Apoplexy	
d		Metastasis	
e		None of the above	
W	nich	of the following medications can treat a prolactinoma?	
a		Metoclopramide	
b		Fluorouracil (5-FU)	
С		Prednisone	
d	*	Bromocriptine	
e		None of the above	
А	33-y	year-old male with HIV/AIDS develops a brain tumor. He is diagnosed with primary central nervous	
sys	stem	(CNS) lymphoma. What is the median survival for this patient if he undergoes radiation alone?	
a		4 weeks	
b	*	4 months	
с		4 years	
d		1 year	
e		None of the above	
W	nich	of the following is the most common malignant skull-based tumor?	
a		Osteosarcoma	
b	*	Multiple myeloma	
с		Chondrosarcoma	
d		Fibrosarcoma	
e		Ewing's sarcoma	
W	Which of the following statements regarding radiation necrosis in the CNS is true?		
a		MRI of the brain can differentiate radiation necrosis from tumorrelated changes	

b		Radiation necrosis only occurs within a few weeks of radiation exposure
с	*	MRI of the brain cannot differentiate radiation necrosis from tumor changes
d		A history of diabetes does not increase your risk for radiation necrosis
e		None of the above
Α :	56-y	rear-old male with a primary brain tumor has a history of whole brain radiation and presents with new-
ons	set s	eizures. Which of the following would be a confirmatory test to determine the cause of the seizure?
а		CT scan
b		MRI brain
с	*	Surgical biopsy
d		X-ray
e		None of the above
A 3	34-y	rear-old female presents with acute psychotic symptoms. She is described as being immobile, mute, and
hav	/ing	a waxy flexibility. Which of the following statements is false?
a		Nonconvulsive status epilepticus is part of the differential
b		An accurate history is rarely available from the patient
с	*	Patients with this disorder only have symptoms while an examiner or bystander is present, and they
		disappear when no one is around
d		Grasp reflex is a secondary feature of catatonia
e		None of the above
A	22-1	rear-old female presents during pregnancy with abnormal movements. There is no family history of any
neı	irol	ogic disorders. She states that during stressful times, the movements become worse, and her husband
sta	tes t	hat they disappear during sleep. She is noted to have a "milkmaid" grip. Which of the following is true?
а		This is the most common neurologic disorder during pregnancy
b	*	Rheumatic disease used to be a common cause for this disorder
c		This is conversion disorder
d		This is essential tremor
e		None of the above
Ch	orea	is defined as a state of excessive movements that are irregular, do not repeat, and are abrupt in
cha	irac	ter. Which of the following statements is false?
a		Huntington's chorea is the most well-studied chorea syndrome
b		The basal ganglia is the sight of dysfunction
c	*	Physostigmine cannot overcome anticholinergic-induced chorea
d		Decreased gamma-aminobutyric acid (GABA) levels in the basal ganglia is seen in these patients
e		None of the above
A	75-v	ear-old male develops progressive dementia Parkinson's features and limb apraxia. On examination the
pat	ient	also has signs of supranuclear palsy. Which of the following is true?
<u>р</u>		The patient has Lewy-body dementia
b		Males develop this disorder more frequently
c		Resting tremor is the most common feature
d	*	Hallucinations are not a common feature of this disorder
e		None of the above
A	56-3	ear-old male presents with complaints of difficulty feeding. He states his hand starts to shake when he
bri	ngs	a utensil to his mouth. Alcohol seems to relieve the problem, and therefore, he has started drinking more
fre	auei	the the are no problems when the patient is relaxed and sitting still. Which of the following is false?
a	1	The problem is located in the Mollaret triangle near the brain stem
b		These symptoms often have isolated head tremor
c		Both genders are affected equally
d		About half the patients have a strong family history
e	*	None of the above
Wł	nich	of the following medications is the most effective treatment for essential tremor?
a.		Clonidine
h		Methylpentynol
5		

с	Ropinirole			
d *	Primidone			
e	None of the above			
Which	Which of the following is not an exclusion criteria for essential tremor?			
a	Primary orthostatic tremor			
b	Isolated voice tremor			
с	Isolated leg tremor			
d *	Isolated head tremor			
e	Writing tremor only			
Friedro	eich's ataxia (FA) is inherited in what fashion?			
a	Autosomal dominant			
b	X-linked			
с	Sporadic			
d *	Autosomal recessive			
e	None of the above			
What	percentage of patients with FA are wheelchair-bound by their midfourth decade of life?			
a	10%			
b	25%			
c	50%			
d	75%			
e *	95%			
A pati	ent presents with progressive dementia, chorea movements, and abnormal behavior. His father had a			
similar	r disease and died at an early age due to suicide. Which of the following statements is true?			
a	This disorder is sporadic in nature			
b *	It is due to an expansion of a cysteine-adenosine-guanine repeat			
c	It is inherited in an autosomal recessive fashion			
d	Anticipation is infrequent in this disorder			
e	None of the above			
A 65-1	vear-old male presents with gradual gait disturbance, urinary incontinence, and progressive dementia over			
the pas	st year. The gait is described as shuffling and magnetic. On examination, there is no papilledema, rigidity,			
or tren	nor. Magnetic resonance imaging (MRI) is performed and demonstrates some atrophy but markedly			
enlarg	ed ventricles. Which of the following is the next best step?			
a	Initiate acetylcholinesterase inhibitor			
b *	High-volume spinal tap			
с	Initiate carbidopa/levodopa			
d	Urology consult			
e	Transfer the patient to a nursing home for long-term care			
A pati	ent with normal pressure hydrocephalus (NPH) is being evaluated for shunt placement. Which of the			
follow	ing statements is true?			
a *	A patient with predominant gait difficulty and minimal cognitive deficit is an ideal candidate for shunt			
	placement			
b	Significant white matter lesions on MRI is of minimal significance			
с	Cortical atrophy on MRI is a positive prognostic indicator for shunt placement			
d	Indwelling cerebrospinal fluid (CSF) catheters have no role in this diagnosis			
e	Reduction of bladder hyperactivity after high-volume LP is a negative prognosis for shunt surgery			
Which	of the following statements regarding Parkinson's disease (PD) is false?			
a	It is typically asymmetric			
b *	Tremor typically begins in the lower extremity			
с	Gait difficulty is a later finding			
d	Sleep disturbances are common			
e	Resting tremor is one of the best clinical predictors for pathologic diagnosis			
Which	of the following is not part of the three cardinal signs of PD?			

а		Resting tremor	
b		Bradykinesia	
с	*	Postural instability	
d		Rigidity	
e		None of the above	
A	76-v	vear-old male with a 15-year history of PD develops short-term memory difficulty and some visuospatial	
im	pair	ment. The patient's language is completely intact. What percentage of patients develop dementia?	
а	P	1%	
b	*	25%	
c		75%	
d		100%	
e		None of the above	
A	34-1	vear-old male develops bradykinesia tremor shuffling gate and is diagnosed with PD. Which of the	
fol	low	ing has been associated with other causes of PD?	
2	10	Well water	
a h		Pesticides	
0		Harbieidas	
с 1		1 mothyl 4 phonyl 1.2.2.6 totrohydronyriding (MDTD)	
a	*	All of the choice	
e	-** 11	All of the above	
OI	an (causes of PD, what percentage is due to the known genetic causes?	
a 1	Ŷ	<u>5%</u>	
b		25%	
c		50%	
d		75%	
e		99%	
W]	hich	of the following is an FDA-approved treatment for PD?	
a		Pallidotomy	
b	*	Deep brain stimulation	
с		Protein redistribution diet	
d		Thalamotomy	
e		All of the above	
A	45-y	rear-old male is found to have increased muscle tone in one limb. Which of the following is part of the	
cla	ssifi	ication of dystonia?	
а		Focal	
b		Segmental	
с		Multifocal	
d		Hemidystonia	
e	*	All of the above	
W	hich	of the following disorders is considered an alpha-synucleinopathy as well as a tauopathy?	
a		Multisystem atrophy	
b		Lewy body disease	
с	*	Progressive supranuclear palsy	
d		PD	
e		Pantothenate kinase 2 deficiency	
Pa	tient	s with multisystem atrophy (MSA) go on to develop Parkinsonism. autonomic failure. cerebellar. and	
pv	rami	idal signs. What percentage of patients develops Parkinson's features?	
<u> </u>		1%	
h		10%	
c		50%	
d	*	90%	
e		25%	
W	hich	of the following is not considered an extranyramidal sign?	
	inen i	or the ronowing is not considered an extrapyranital sign:	
a		Akathisia	
---	--------	---	--
b	*	Spasticity	
с		Chorea	
d		Athetosis	
e		Stereotypy	
Ta	rdiv	e dyskinesia typically occurs in patients that have been on which of the following medications for many	
vea	ars?		
<u>э</u> е	*	Metoclopramide	
h		Carbidona	
c		Roninirole	
d		Diphenhydramine	
e		None of the above	
W	nich	of the following tests should be considered when evaluating a patient with tardive dyskinesia?	
3		Calcium level	
u h		Serum cerulonlasmin	
C		Thuroid function	
с 1		Complete blood count	
u	*	All of the shove	
e wi	ai a b	All of the above	
WI	ncn	of the following is the most common manifestation of wilson's disease in children?	
a 1.			
b	*	Seizures	
c	Ŷ	Hepatic disease	
d		Kayser-Fleisher rings	
e		All of the above occur equally	
Wł	nch	of the following statements is true regarding acute disseminated encephalomyelitis (ADEM)?	
a		It is indistinguishable from multiple sclerosis	
b	*	It is a nonvasculitic demyelinating process	
С		Genetics probably play no role in this disease	
d		Multiple sclerosis (MS) is usually a monophasic illness	
e		None of the above	
Wł	nat p	percentage of patients that develop ADEM occurs in children under the age of 10?	
a		1%	
b		95%	
c	*	80%	
d		99%	
e		None of the above	
Wł	nich	of the following is helpful in distinguishing ADEM from MS?	
a		Age younger than 12	
b		Fever	
с		Seizures	
d		Recent immunization	
e	*	All of the above	
A	17-y	ear-old patient presents with ankylosing spondylitis. Which of the following statements is true?	
а		More females than males are affected	
b	*	Uveitis is a possible associated condition	
с		Approximately 25% of the US population is affected	
d		The pain associated with this condition is worse in the afternoon and improves in the morning	
e		None of the above	
What percentage of patients with ankylosing spondylitis have HLA-B27 antigen?			
a		1%	
h		10%	
c		50%	
, ~	1		

d		75%				
e	*	95%				
Wł	What percentage of patients with Bell's palsy have recurrence?					
a	*	15%				
b		30%				
с		70%				
d		90%				
e		None of the above				
Wł	nich	of the following statements regarding Bell's palsy is true?				
a		Men are more likely to be affected than women				
b		The lowest incidence is in persons older than age 60				
С	*	Pregnant women are three times more likely to be affected than nonpregnant women				
d		Overall, patients have a poor prognosis with Bell's palsy				
e		None of the above				
W	nat r	percentage of patients with Behcet's disease have an associated oral ulcer?				
а		1%				
b		10%				
c		50%				
d		75%				
e	*	100%				
W	nich	of the following are hallmark features of MS?				
а		Neurologic deficits usually once in time				
h	*	Recurrent neurologic deficits that are disseminated by space and time				
c		Seizure disorder				
d		Bilateral optic neuritis and transverse myelitis				
e		None of the above				
W	nich	of the following is not part of the four standard categories used to describe the clinical course of MS?				
3	nen	Relanging remitting				
a h		Secondary progressive				
C C		Progressive relansing				
d		Primary progressive				
u A	*	All of the above				
W/I	nich	of the following subtypes of MS responds the least to treatment?				
0	nen	Palansing romitting				
a b		Secondary progressive				
0		Drogressive releasing				
с 	*	Primery progressive				
u o		All of the above				
e Wi	h	All of the above				
VV I	nen	Lymbor puncture (LD)				
d h		Lumbar puncture (LF) Magnetic resonance imaging (MPI)				
0		Computed tomography (CT) scor				
4	*	Clinical				
a		Cillical Desitant emission temesaren ha (DET) seen				
e W		Positron emission tomography (PET) scan				
W	nat p	bercentage of patients with MS have abnormalities detected on C1 scan?				
a 1		<u>5%</u>				
b	<u>ب</u>					
C	*	33% (0)/				
d						
e						
which of the following is not part of the disease modifying drugs for the treatment of MS?						
a		Interteron beta-1b				

b		Intravenous immunoglobulin (IVIG)			
с		Glatiramer acetate			
d		Interferon beta-1a			
e	*	Methylprednisolone			
What percentage of patients with MS will do well for 20 years and therefore would be considered to have					
ber	nign	MS?			
а	*	10%			
b		25%			
с		46%			
d		78%			
e		None of the above			
Wł	nich	of the following groups is most susceptible to contracting MS?			
а	*	Caucasian			
b		Asian			
с		Pacific Islander			
d		African American			
e		Ashkenazi Jew			
W	nich	of the following supports the autoimmune theory?			
а а		Elevated eosinophils			
h	*	Animal model of allervic encenhalomyelitis			
C		Response to steroids			
d		All of the above			
u e		None of the above			
W	hat r	percentage of natients with definite MS have an abnormal response to visual evoked response?			
3	*	85%			
a h		50%			
0		5/0/			
d d		35%			
u o		JJ%			
e Wi	ai ah	None of the above			
VV I		Drain stem suditory response			
a L	*	Semetesenserv nonense			
D		Somatosensory response			
C d		Nerve conduction study			
a		Visual evoked response			
e		None of the above			
W	nat i	s the average survival of patients with primary progressive MS?			
a 1		5 years			
b		1 year			
C		10 years			
d		25 years			
e	*	35 years			
Wł	nich	of the following is suggestive of worse prognosis in MS?			
a		Age of onset < 35 years			
b		Acute onset of first symptoms			
C	*	Cerebellar signs			
d		Onset with sensory symptoms			
e	Ļ	None of the above			
Which of the following describes Marchiafava-Bignami disease?					
a		Damage to the mamillary bodies			
b		Bilateral occipital lobe infarctions			
С	*	Demyelination of the corpus callosum			
d		First noted in Irish men			

e		Rapidly progressive			
Which of the following viruses have been associated with MS?					
a	*	Herpes virus type 6 (HSV 6)			
b		Human immunodeficiency virus (HIV)			
с		Measles			
d		Polio			
e		None of the above			
W	nich	of the following is considered a variant of MS?			
а		Primary progressive MS			
b		Marburg virus			
с		Devic's disease			
d		Schilder's disease			
e	*	All of the above			
Which of the following may develop neutralizing antibodies as a treatment of MS?					
а		Glatiramer acetate			
b	*	Beta-interferon			
c		Cyclophosphamide			
d		Methotrexate			
e		None of the above			