

# NEUROLOGY FOR MASA EXAM

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MD

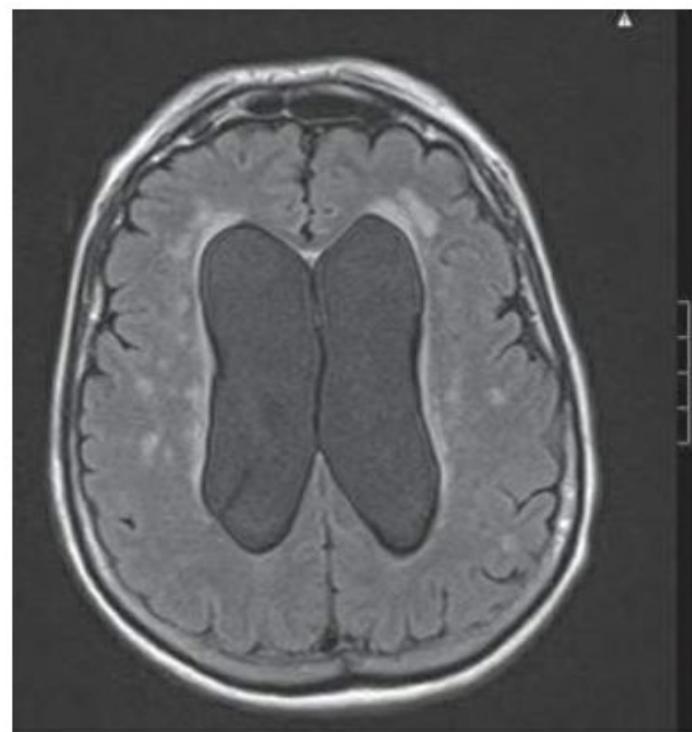
**A patient presents with nontraumatic SAH. On admission he is drowsy and confused but moving all four extremities. He is found to have a left MCA aneurysm and undergoes successful endovascular coiling. On day 6 his mental status declines and his right arm and leg become weaker. Which of the following is the most likely cause of his new symptoms?**

- a. Acute hydrocephalus**
- b. Rebleeding**
- c. Mass effect from the hematoma**
- d. Vasospasm**
- e. Uncal herniation**

**\* SAH – SUBARACHNOID HEMORRHAGE**

**A brain MRI was obtained in the patient depicted in question 44. What diagnosis do you suspect based on [Figure 12.8](#)?**

- a. Parkinson's disease
- b. Advancing Alzheimer's disease
- c. Normal pressure hydrocephalus
- d. Metastatic disease to central nervous system
- e. Transverse myelitis



A 25-year-old woman presented with multiple episodes of altered behavior. Each episode lasted for about 2 minutes, and was associated with lip-smacking movements and repetitive limb movement. The patient did not remember these events, but was able to anticipate them, saying that she felt “butterflies in my stomach” and a sense of fear before they occurred. Sometimes she said she smelled burning rubber as well. Which of the following is the most likely diagnosis?

- A. Focal aware seizure
- B. Generalized-onset seizure
- C. Focal to bilateral tonic-clonic seizure
- D. Focal seizure with impairment of awareness
- E. Gelastic seizure

A 25-year-old woman presented with multiple episodes of altered behavior. Each episode lasted for about 2 minutes, and was associated with lip-smacking movements and repetitive limb movement. The patient did not remember these events, but was able to anticipate them, saying that she felt “butterflies in my stomach” and a sense of fear before they occurred. Sometimes she said she smelled burning rubber as well. Which of the following is the most likely diagnosis?

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**A 76-year-old woman is brought in by her daughter for progressive memory loss and cognitive difficulties. Her daughter is very concerned by this and also mentions that she has difficulty with walking and seems to have a problem with lifting her feet off of the floor. She wonders if you can also give a referral to the urologist because her mother has been requiring the use of adult diapers in the last 6 months. Based on the history, which of the following is the best next step for diagnosis?**

- a. Formal neuropsychiatric/cognitive testing**
- b. Trial of levodopa**
- c. Lumbar puncture**
- d. MRI brain**
- e. MRI spine**

A 25-year-old woman presented with episodes where her right hand curled up and she had an overwhelming sense of fear. Each episode lasted about 90 seconds. She was fully awake and alert despite her psychiatric symptoms. Which of the following is the most likely diagnosis?

- A. Focal aware seizure
- B. Generalized-onset seizure
- C. Focal to bilateral tonic-clonic seizure
- D. Focal seizure with impairment of awareness
- E. Gelastic seizure



**A patient is admitted after suffering head trauma. His head CT is shown in [Figure 3.6](#). Regarding this condition, which of the following is correct?**

- a.** The hemorrhage originates from tearing of cerebral surface bridging veins
- b.** The hemorrhage originates from rupture of the middle meningeal artery
- c.** It is associated with Charcot–Bouchard aneurysms
- d.** Lipohyalinosis is present in cerebral vessels in this condition
- e.** Coiling or clipping of the culprit aneurysm will prevent rebleeding





**You are called to the bedside of a previously healthy 79-year-old man who underwent a total knee replacement yesterday. The nurse states his level of alertness has been fluctuating and he has been slurring his speech, has been very drowsy at times, and mentioned seeing a large colorful eye on the wall looking at him. What is the most likely explanation for these symptoms?**

- a. Posterior circulation stroke**
- b. Occipital lobe seizures**
- c. Delirium**
- d. Dementia**
- e. Schizophrenia**

A 4-year-old boy presented with multiple episodes where he would suddenly lose consciousness and have tonic-clonic movements of his extremities with urinary incontinence and tongue-biting. Which of the following is the best term for this type of seizure?

- A. Focal aware seizure
- B. Generalized-onset seizure
- C. Focal to bilateral tonic-clonic seizure
- D. Focal seizure with impairment of consciousness
- E. Absence seizure

A 6-year-old boy presented with episodes where he would lose consciousness and muscle tone. Most of the time, his head would simply drop, however, he had several episodes where his whole body became limp. He had sustained several falls where he injured himself. Which of the following is the best term for this type of seizure?

- A. Focal seizure with impairment of consciousness
- B. Absence seizure
- C. Atonic seizure
- D. Myoclonic seizure
- E. Tonic seizure

**A 67-year-old man with history of atrial fibrillation and a recent TIA comes for evaluation. A decision is made to put him on warfarin. Which of the following factors is not routinely taken into account to assess the stroke risk in patients with atrial fibrillation?**

- a. History of diabetes mellitus**
- b. History of congestive heart failure**
- c. History of hypertension**
- d. History of a prior stroke or TIA**
- e. History of hyperlipidemia**

**A 60-year-old, usually quiet college professor begins rolling her eyes when asked questions in class and yelling lewd comments at students. In the medical office, her examination is normal, but she is chewing on a pen. Which of the following is most likely her diagnosis?**

- A. Alzheimer disease
- B. Creutzfeldt-Jakob disease
- C. Frontotemporal degeneration
- D. Progressive supranuclear palsy

After a seizure, a patient with epilepsy was weak on the left side of her body. This helps determine which of the following features of her epilepsy?

- A. The prognosis of her epilepsy
- B. The lateralization of the epileptic focus in her brain
- C. The underlying cause of her epilepsy
- D. The likelihood that she will respond to medications
- E. The likelihood that she will need surgery

**A 49-year-old woman with hypertension on no medications at home presents with a TIA suggestive of ischemia in the territory of the right MCA. Imaging studies demonstrate a 70% stenosis of the right MCA. Based on available evidence, which of the following treatment plans is the best option for this patient?**

- a. Start aspirin**
- b. Start warfarin**
- c. Intracranial angioplasty alone**
- d. Intracranial angioplasty and stenting**
- e. Extracranial/intracranial (EC/IC) bypass surgery**



**A 61-year-old man with a history of diabetes, hyperlipidemia and hypertension, presents with left hemiparesis without speech problems. The symptoms resolve while you evaluate the patient. Which of the following is correct?**

- a. The patient should be discharged and no further testing is necessary
- b. The patient can be discharged with follow up in 3 months and treatment change is not necessary
- c. Observation before thrombolysis is indicated prior to symptom resolution, to determine if the patient has a TIA rather than a stroke
- d. MRI is not required since the symptoms have resolved
- e. The risk of stroke is highest in the period immediately following and soon after a TIA

**Impairment in which of the following structures would be most likely to be associated with personality changes?**

- a. Orbitofrontal cortex
- b. Parietal lobe
- c. Lateral medulla
- d. Occipital lobe
- e. Ventral posterolateral nucleus of the thalamus

A 20-year-old woman presented with bilateral, asynchronous ballistic movements of her arms and legs. The patient was conscious during these events, often saying that she felt like she was being attacked. Each episode lasted between 30 and 120 seconds. Which of the following tests is most likely to reveal the diagnosis?

- A. Routine EEG
- B. Video EEG
- C. MRI of the brain
- D. Spectroscopy
- E. Prolactin level

**A 50-year-old woman with controlled hypertension presents to the clinic with a history of TIA about a month ago. Aspirin 81 mg was started at that time. Cardioembolic work up was negative, carotid ultrasound demonstrated nonsignificant stenosis, and low-density lipoprotein (LDL) was 140 mg/dL. Which of the following agents has been shown to prevent recurrent cerebrovascular events and should be used in this patient?**

- a. HMG-CoA reductase inhibitors (statins)**
- b. Warfarin**
- c. Tissue plasminogen activator (tPA)**
- d. Heparin**
- e. Hormone replacement therapy**

A patient is brought in by his family because of dementia. The family members report that he has poor attention, forgetfulness, visual hallucinations, depression, falls, and strange behavior in his sleep. On examination, he has facial masking and bradykinesia. There is no tremor. Which disease is the most likely cause?

- A. Alzheimer disease
- B. Parkinson disease
- C. Dementia with Lewy bodies
- D. Normal pressure hydrocephalus

A 22-year-old man lost consciousness and had tonic-clonic movements of his extremities with urinary incontinence and tongue-biting. The movements continued for 10 minutes without stopping. Which of the following medications is indicated at this time?

- A. Propofol
- B. Phenytoin
- C. Lorazepam

- D. Phenobarbital
- E. Clordiazepoxide

**Which of the following patients should be managed with antiplatelet agents for stroke prevention?**

- a.** A 50-year-old man who suffered an ST-elevation myocardial infarction last week and has an ejection fraction of 30% with anterior wall akinesis and a left ventricular thrombus
- b.** A 49-year-old woman with a mechanical heart valve
- c.** A 52-year-old man with hyperthyroidism and intracranial atherosclerotic stenosis
- d.** A 76-year-old man with atrial fibrillation, diabetes, hypertension, and congestive heart failure
- e.** A 70-year-old man with an intracardiac thrombus



**A 78-year-old man is seen in the office, brought in by nursing home personnel for progressively worsening agitation and other neurologic symptoms. Based on your findings and history provided, you diagnose dementia with Lewy bodies. Three classic features seen in typical dementia with Lewy bodies (DLB) are:**

- a. Parkinsonism, impaired long-term memory, visual hallucinations**
- b. Visual hallucinations, aphasia, parkinsonism**
- c. Fluctuating cognitive function, parkinsonism, hyperphagia**
- d. Parkinsonism, fluctuating cognitive function, visual hallucinations**
- e. Visual hallucinations, auditory hallucinations, fluctuating cognitive function**

Which of the following patients with epilepsy is at greatest risk for sudden unexpected death?

- A. A 6-month-old baby with West syndrome
- B. A 6-year-old child with Lennox–Gastaut syndrome and tuberous sclerosis complex
- C. A 16-year-old with newly diagnosed juvenile myoclonic epilepsy
- D. A 30-year-old man with tonic–clonic seizures taking two antiepileptic medications
- E. A 65-year-old man with seizures after a stroke

A 48-year-old man is found comatose after not being seen for at least 2 days. He requires endotracheal intubation on the way to the hospital and is admitted to the neurocritical care unit. His CT scan is shown in **Figure 3.4**. Which of the following is correct regarding the treatment of this patient?

- a. Endovascular reperfusion therapy is the next step in treatment
- b. Anticoagulation with intravenous heparin is indicated to prevent expansion of the stroke
- c. Early hemicraniectomy improves survival
- d. An intraventricular catheter should be placed
- e. Dexamethasone should be started at a dose of 4 mg intravenously every 6 hours



**Which of the following is *not* recommended to reduce behavioral symptoms in patients with dementia?**

- A. Gently correct the patient each time the patient is mistaken.
- B. Avoid changes in routine.
- C. Avoid disturbing television programs and movies.
- D. Prevent fatigue.

A 27-year-old man presented with a tonic-clonic seizure. An MRI revealed a small cortical malformation in his right frontal lobe. How should he be counseled at this time?

- A. He should avoid driving
- B. Driving is permitted once he has been on a medication for 1 month
- C. He should avoid contact sports
- D. He should avoid all alcoholic beverages
- E. He should not sleep alone if at all possible

**A 49-year-old woman with anxiety, depression, hypertension, and diabetes presents to the emergency department with a sensory deficit affecting her right face, arm, trunk, and leg, which started yesterday in the evening. The symptoms reached their peak on the morning of presentation. There are no motor deficits on examination. Which of the following is correct?**

- a. No further work up is needed, and the patient can be discharged from the emergency department**
- b. Given the lack of motor deficits, her symptoms are most likely related to anxiety**
- c. The most likely location of the lesion is in the cortex**
- d. Cardioembolism is the most likely etiology**
- e. Small vessel disease is the most likely etiology**



Which of the following is *not* recommended for patients with dementia?

- A. Brief afternoon naps
- B. Music therapy
- C. Physical exercise
- D. Social engagement



A 27-year-old woman presented with a tonic-clonic seizure. Which of the following tests must be performed before starting her on antiepileptic medications?

- A. Cerebrospinal fluid analysis
- B. Brain MRI
- C. Hypercoagulability screen
- D. Pregnancy test
- E. Urine toxicology screen

**A 69-year-old woman presents to the emergency department at 2 hours and 35 minutes from the onset of left hemiparesis and hemineglect. Her National Institutes of Health Stroke Scale (NIHSS) score is 12. A brain CT scan shows no hemorrhage. Which of the following statements is correct regarding intravenous tissue plasminogen activator (tPA)?**

- a. The risk of hemorrhage with tPA is similar to placebo**
- b. Earlier administration carries a better prognosis and a lower risk of hemorrhage**
- c. There is no maximum dose**
- d. The use of tPA improves short-term but not long-term clinical outcomes**
- e. tPA should not be administered beyond 2 hours from the onset of symptoms**

Which of the following is *not* recommended for patients with dementia?

- A. Brief afternoon naps
- B. Music therapy
- C. Physical exercise
- D. Social engagement

Which of the following medications is contraindicated in patients with a history of kidney stones?

- A. Oxcarbazepine
- B. Phenytoin
- C. Levetiracetam

- D. Carbamazepine
- E. Topiramate

**A 34-year-old man presents with vertigo and neck pain after riding a “very wild” roller coaster. The examination demonstrates anisocoria with mild ptosis on the left side, nystagmus, reduced sensation on the left side of the face, and left side ataxia. Which of the following is the best diagnostic test to evaluate the cause of this condition?**

- a. Carotid ultrasound**
- b. Transcranial Doppler ultrasonography**
- c. Transthoracic echocardiogram with bubble study**
- d. Catheter angiogram of the cervicocerebral arteries**
- e. Time-of-flight MRA of the circle of Willis**

**Which of the following is *not* recommended to prevent vascular cognitive impairment in at-risk individuals?**

- A. Antioxidants
- B. Mediterranean diet
- C. Physical activity
- D. Treatment of hypertension

A 46-year-old woman presented with altered mental status 2 weeks after starting oxcarbazepine for seizures. Which of the abnormalities is most likely to be found on her blood work?

- A. Hyponatremia
- B. Hypoglycemia
- C. Hypocalcemia

- D. Hypokalemia
- E. Elevated ammonia



**A 49-year-old man with history of hypertension presents to the emergency department with acute onset of right hemiparesis and aphasia. The time he was last seen normal was about 45 minutes prior to arrival. The**

**National Institutes of Health Stroke Scale (NIHSS) score is 14. Which of the following is the best next step?**

- a. Start intravenous tissue plasminogen activator (tPA)**
- b. Get a brain CT scan**
- c. Give aspirin 325 mg once**
- d. Start intravenous heparin**
- e. Get a brain MRI**

**Which of the following symptoms is typically the earliest symptom of Alzheimer's disease?**

- a.** Immediate memory impairment
- b.** Recent memory impairment
- c.** Remote memory impairment
- d.** Procedural memory impairment
- e.** Apraxia

A 56-year-old man with long-standing epilepsy presented with gingival overgrowth, pictured here. Which of the following antiepileptic medications is responsible for this symptom?

- A. Lacosamide
- B. Phenytoin
- C. Leviteracetam
- D. Vigabatrin
- E. Tiagabine



**A 65-year-old patient with diabetes presents with a TIA. According to the ABCD2 score that assesses stroke risk in someone with TIA, which of the following is not used as a predictor of occurrence of a stroke?**

- a. Diabetes**
- b. Age of 60 years or more**
- c. Hypertension**
- d. Duration of neurologic symptoms**
- e. Hyperlipidemia**

**What is the greatest risk factor for AD? (Alzheimer's Disease)**

- A. Family history of AD
- B. Head trauma
- C. Socioeconomic status
- D. Increasing age

A 25-year-old man with epilepsy was started on a new antiepileptic medication. Though he was told to increase the dose slowly, he instead took several pills daily. He presented with the rash pictured here. Which of the following medications is most likely responsible for his condition?

- A. Lacosamide
- B. Phenytoin
- C. Lamotrigine
- D. Vigabatrin
- E. Tiagabine



# WHICH OF THE FOLLOWING IS NOT A CONTRAINDICATION FOR IV tPA?

- A) Age  $>75$
- B) INR  $>1.7$
- C) Platelets  $<100,000$
- D) Stroke within last 3 months
- E) Glucose  $<50$
- F) Hemorrhage seen on head CT



**Which of the following symptoms is typically the earliest symptom of Alzheimer's disease?**

- a.** Immediate memory impairment
- b.** Recent memory impairment
- c.** Remote memory impairment
- d.** Procedural memory impairment
- e.** Apraxia

**In a patient who suffered a febrile seizure (FS), which of the following choices is the least likely predictor of developing subsequent epilepsy?**

- a. Family history of FS
- b. Complex FS
- c. Developmental delay
- d. Family history of epilepsy
- e. Neurologic abnormality

**What is the therapeutic window for IV tPA in case of ischemic stroke?**

- A. 30 MINUTES
- B. 1.5 HOUR – 4 HOURS
- C. 0-4.5 HOURS
- D. 0-8 HOURS

**The family of a patient known to have a dominant mutation predictive of Alzheimer's dementia comes to your clinic. They want to talk about whether other family members might have Alzheimer's disease now and should be tested. You say that:**

- a. Alzheimer's disease pathology begins when clinical symptoms become severe enough to alter function**
- b. Alzheimer's disease may begin years before an individual is symptomatic of it**
- c. There are medicines than can prevent progression to Alzheimer's dementia in individuals at risk for it**
- d. Amyloid imaging does not become positive in Alzheimer's disease until the patient is exhibiting cognitive dysfunction**
- e. The asymptomatic period of Alzheimer's disease is weeks to months at most**

**Which of the following is the best treatment option for simple febrile seizures (FSs)?**

- a. Intravenous (IV) lorazepam**
- b. Rectal diazepam**
- c. Supportive management**
- d. Phenobarbital**
- e. Intranasal midazolam**

**A 16-year-old girl is involved in a motorcycle accident**

**while riding with her boyfriend. She was not wearing a helmet. On examination, she is comatose, has bruising around her eyes and behind her right ear, and drainage of clear fluid from the nose and the right ear. Based on the findings, which of the following is most likely present in this case?**

- a. Epidural hematoma**
- b. Skull base fracture**
- c. Intraparenchymal hemorrhage**
- d. SAH**
- e. Subdural hematoma**



A 60-year-old man is brought to clinic by his daughter. He has been forgetful and loses objects. She suspects dementia. Which of the following best differentiates mild cognitive impairment from dementia?

- A. Preservation of executive function
- B. Preservation of language skills
- C. Preservation of visuospatial skills
- D. Preservation of activities of daily living



A 15-year-old girl with a history of anxiety and depression presents in the clinic with episodes concerning for seizures. Which of the following episodes is most concerning for an epileptic seizure?

- a. Episodes of prolonged unresponsiveness with eyes closed and no movements
- b. Violent asynchronous shaking that occurs primarily while at school and not at home
- c. Sudden amnesia of self-identity with intact working memory
- d. Nocturnal arousals with confusion and complex movements, including bicycling leg movements

**A 60-year-old man is brought to your office by his daughter and wife because of prominent memory loss, several recent automobile accidents near his home, and lack of insight regarding these recent events. There is a family history of early dementia in his uncle. You decide to proceed with an evaluation. According to the American Academy of Neurology (AAN) guidelines, which of the following is not recommended in the routine evaluation of patients presenting with dementia?**

- a. Vitamin B12**
- b. CBC**
- c. Venereal Research Disease Laboratory (VDRL) test**
- d. Depression screening**
- e. Electrolytes**

A 13-year-old previously healthy girl presents in the clinic with spells concerning for syncope. Which of the following elements of her history would make you more likely to suspect an epileptic seizure?

- a. Events occurred when her hair was being pulled into braids.
- b. Events are preceded by a sensation of “rising” in her stomach.
- c. Events tend to occur first thing in the morning when she gets out of bed.
- d. Events are preceded by a sensation that things are getting distant and “tunneling” of vision.

**Which statement is false regarding stroke risk in women younger than 45 years who have migraine with aura?**

- a.** Oral contraceptives containing progesterone increase only stroke risk but those with estrogen do not.
- b.** Women younger than 45 years have a higher risk of stroke in the setting of combined hormonal contraceptive use as compared with women older than 45 years.
- c.** Oral contraceptives containing estrogen increase stroke risk but progesterone does not.
- d.** Smoking increases stroke risk
- e.** The combination of smoking and combined hormonal contraceptive use significantly increases risk of stroke as compared with either factor alone

**Your patient is a 39-year-old woman with a history of migraine with aura. She asks what the association is between her migraines and stroke risk. Which of the following statements is most accurate?**

- a. There is no increased risk of stroke in women with migraine with or without aura
- b. There is an increased risk of stroke in women with migraine without aura
- c. There is an increased risk of stroke in women with migraine without aura but only for those younger than 45 years
- d. There is an increased risk of stroke in women with migraine with aura but only for those older than 50 years
- e. There is an increased risk of stroke in women with migraine with aura



A 10-year-old boy comes to establish care in your clinic. His mother tells you that he has been diagnosed with Lennox-Gastaut syndrome. Which of the following features is *inconsistent* with a diagnosis of Lennox-Gastaut syndrome?

- a. Normal developmental outcome
- b. Nocturnal tonic seizures
- c. Refractory seizures despite treatment with multiple seizure medications
- d. Atonic seizures or “drop spells”

**An overweight 41-year-old woman with hypertension, recurrent kidney stones, and increasing migraine frequency wishes to begin a preventive medication. Which of the following would be a poor choice to use?**

- a. Propranolol**
- b. Topiramate**
- c. Verapamil**
- d. Neurontin**



A 13-year-old child with Lennox–Gastaut syndrome continued to have recurrent seizures despite treatment with several antiepileptic medications. Which of the following diets may help limit his seizures?

- A. Ketogenic
- B. High carbohydrate
- C. Fat-free
- D. Low-protein
- E. Mediterranean

**A 26-year-old obese woman with borderline hypertension presents with worsening headache, which she describes as a bifrontal and bioccipital band-like pressure and pain. Occasionally, she experiences brief transient visual loss or graying, especially with straining, which lasts only seconds, but no photophobia or phonophobia. She sometimes gets nauseated and vomits when the pain is**

**severe, and she feels that her vision is becoming increasingly blurred. What is the most likely diagnosis?**

- a. Migraine
- b. Tension-type headache
- c. New daily persistent headache
- d. Idiopathic intracranial hypertension (pseudotumor cerebri; benign intracranial hypertension)
- e. Posterior fossa mass

An 80-year-old man presented with difficulty walking. Over the past few months he had a hard time “getting started” and it took him much longer to get up from a chair. On exam, he took small, shuffling steps with little ground clearance and had little arm swing. He had a resting tremor of his right arm, which he said had been present for over 1 year. Which of the following is the most likely diagnosis?

- A. Essential tremor
- B. Normal pressure hydrocephalus
- C. Tabes dorsalis
- D. Parkinson disease
- E. Cervical spondylosis

**A 62-year-old man presents with episodes of left-sided facial pain. The episodes are brief and shock-like, lasting anywhere from several seconds up to a minute. They are located in the left cheek and are triggered by brushing his teeth and touching the area. What do you suspect on the basis of this history?**

- a. Short-lasting unilateral neuralgiform headache with conjunctival injection and tearing (SUNCT)**
- b. Paroxysmal hemicrania**
- c. Cluster headache**
- d. Trigeminal neuralgia**
- e. Hemicrania continua**

Which of the following gaits is most characteristic of Parkinson disease?

- A. A wide-based, lurching gait
- B. A shuffling gait with poor arm swing
- C. A stiff, "scissoring" gait
- D. A steppage gait
- E. A gait apraxia, where patients can mimic walking while seated, but have poor foot clearance when actually trying to walk

**A 39-year-old man presents to your office with the abrupt onset of severe holocephalic headache, nausea, and blurred vision about 4 hours ago. When asked, he admits that this is the worst headache he has ever had. He also reports some neck pain and says that it feels stiff. He has a history of migraine but says that this headache is not like his normal migraine. What would be the next best course of action?**

- a. Dihydroergotamine infusion to try to break this headache early
- b. Intramuscular injection of ketorolac and consider prochlorperazine for nausea
- c. Arrange for an urgent lumbar puncture (LP)
- d. Obtain an urgent noncontrast brain CT
- e. Subcutaneous injection of sumatriptan

Which of the following is most characteristic of the tremor in Parkinson disease?

- A. It improves with moderate alcohol intake
- B. It worsens with action
- C. It is most pronounced when patients are asked to hold their arms in front of them
- D. It is a unilateral, resting tremor
- E. It is bilateral and symmetric at disease onset



**A 22-year-old overweight woman presents to the emergency department with increasing frequency of previously diagnosed migraines. Other medical history is unremarkable with exception of mild asthma and recurrent constipation. The attacks are occurring 4 days per week and are lasting the entire day. What would be the best preventive medication to start in this patient?**

- a. Amitriptyline**
- b. Propranolol**
- c. Sumatriptan**
- d. Topiramate**
- e. Verapamil**

Which of the following physical exam findings would be most concerning for a disease *other* than idiopathic Parkinson disease?

- A. Unilateral cogwheel rigidity of an arm
- B. Restriction of vertical gaze
- C. A decreased blink rate
- D. Small handwriting
- E. Hypophonia

**A 34-year-old overweight woman presents with a severe migraine that began 2 days ago but is now gone. She has not identified any triggers since these headaches began 2 years ago, has tried to avoid stress, and has kept a headache diary prior to her visit with you today. She averages about six migraines per month, each lasting 1 to 2 days. What is the best choice of treatment at this time, assuming there are no contraindications?**

- a. Prescribe sumatriptan and a non-steroidal anti-inflammatory drug (NSAID) to take immediately today
- b. Prescribe a preventative agent
- c. Give her a dihydroergotamine (DHE) infusion today in the office to prevent recurrence
- d. Follow her over the next couple of months before prescribing anything
- e. Prescribe sumatriptan to use as needed, as well as a preventative agent

Which of the following is a common nonmotor symptom in Parkinson disease?

- A. Palpitations and tachycardia
- B. Prosopagnosia
- C. Migraines
- D. Depression
- E. Optic nerve atrophy

**Which of the following is not included in the diagnostic criteria for episodic migraine?**

- a. Nausea and/or vomiting
- b. Photophobia and phonophobia
- c. Osmophobia
- d. Aggravation by routine physical activity
- e. Moderate or severe pain intensity

Which of the following neurotransmitters is primarily affected in Parkinson disease?

- A. Dopamine
- B. Serotonin
- C. Norepinephrine

- D. Histamine
- E. Glutamate

**An overweight 36-year-old woman presents with three to four severe, debilitating headaches per month for the last 2 years. The headaches last 1 to 2 days. They are sometimes localized bifrontally but more often localized to the right temple, right frontal region, and behind the right eye. There is often rhinorrhea and congestion associated with her headaches. She denies any auras or neurologic features. The pain is usually a deep ache but throbbing when severe. She sometimes gets some nausea but no vomiting. She has to wear sunglasses and go to a quiet room because she “can’t function.” What is the most likely diagnosis?**

- a. Cluster headache
- b. Intermittent sinus headache
- c. Tension-type headache
- d. Idiopathic intracranial hypertension (IIH; pseudotumor cerebri)
- e. Migraine without aura



Which of the following is the most likely long-term complication of treatment with levodopa for Parkinson disease?

- A. Cognitive impairment
- B. Gastric dysmotility
- C. Orthostatic hypotension
- D. Renal impairment
- E. Dyskinesias

**A 41-year-old man presents with what you suspect to be tension-type headache. Which one of the following symptoms is included in the diagnostic criteria for this disorder?**

- a. Photophobia**
- b. Throbbing/pulsating pain**
- c. Aggravation by routine physical activity**
- d. Nausea**
- e. Vomiting**

Which of the following is the mechanism of action of ropinirole?

- A. It increases endogenous production of dopamine in the central nervous system (CNS)
- B. It stimulates the presynaptic release of dopamine within the CNS
- C. It upregulates dopamine receptors of the postsynaptic dendrite
- D. It directly binds to postsynaptic receptors in the CNS
- E. It decreases production of alpha-synuclein, preserving dopamine-producing neurons in the substantia nigra

**What is the most prevalent primary headache disorder in the general population?**

- a. Migraine with aura
- b. Migraine without aura
- c. Tension-type headache
- d. Cluster headache
- e. Chronic migraine

A 56-year-old man presented with an uncomfortable sensation in his legs, often at night. He felt compelled to move them to relieve this sensation, such that he had great difficulty falling asleep. Which of the following treatments is indicated at this time?

- A. Magnesium
- B. Ropinirole
- C. Carbidopa-levodopa

- D. Benztropine
- E. Propranolol

A 23-year-old man presented with several days of weakness that started in his feet and progressed up to his legs such that he had trouble walking. He had a “stomach virus” the week prior. On examination, he could barely lift his legs off the bed, and there was some weakness of his hands. He had mildly impaired joint position sense in his feet, and his deep tendon reflexes were absent. Which of the following is the most likely diagnosis?

- A. Multiple sclerosis
- B. Guillain-Barré syndrome
- C. Transverse myelitis
- D. Amyotrophic lateral sclerosis
- E. Botulism poisoning

A 56-year-old woman presented with double vision for 2 months. The photo shows the woman trying to look up. She said that she had some trouble untying her shoes and brushing her teeth at night. Antibodies against the acetylcholine receptor were present. Which of the following is the most appropriate treatment at this time?



- A. Interferon beta-1a
- B. Intravenous methylprednisolone
- C. Cyclophosphamide
- D. Infliximab
- E. Pyridostigmine



**Which of the following treatment options has evidence to support its use for Guillain–Barre syndrome?**

- a. Oral corticosteroids**
- b. Intravenous corticosteroids**
- c. Plasmapheresis combined with steroids**
- d. Pyridostigmine**
- e. Intravenous immunoglobulins (IVIg)**

Which of the following physical exam findings is most likely to be seen in a patient with acute inflammatory demyelinating polyneuropathy?

- A. Muscle fasciculations
- B. Delayed relaxation of deep tendon reflexes
- C. Loss of temperature sensation in the hands and feet
- D. Absent deep tendon reflexes
- E. Bilateral abducens nerve palsies

**GOOD LUCK!**