A 50-year-old man undergoes surgical transection of the obturator nerve for unbalanced muscle spasm affecting the hip. Which of the following muscles is be paralyzed by this procedure?

) Adductor brevis
) External oblique
) Iliopsoas
) Obturator internus
) Piriformis

A 3-month-old girl is brought to the emergency department by her parents because of a 2-day history of a deep cough "that sounds like a barking seal," a r decreased appetite. Her temperature is 37.8°C (100°F). Physical examination shows inspiratory stridor. A diagnosis of croup is made, but the appropriate t not result in improvement. Examination of the airway after anesthesia is administered shows two squamous, warty lesions on the vocal cords. Which of the viruses is the most likely cause of these lesions?

) Epstein-Barr virus
) Herpes simplex virus
) HIV
) Human papillomavirus
) Poxvirus

A 50-year-old man comes to the physician because of diarrhea and a 13.6-kg (30-lb) weight loss over the past 2 months. He has three to four large, pale, f stools with oil droplets daily. He has a history of alcohol dependence and chronic abdominal pain. X-ray of the abdomen shows calcifications in the mid-upp Which of the following pathophysiologic mechanisms is the most likely cause of this patient's condition?

) Generalized malabsorption
) Motility disorder
) Osmotic diuresis
) Portal hypertension
) Vitamin B_{12} (cobalamin) deficiency

A 32-year-old man is brought to the emergency department after sustaining a deep laceration that may have injured the nerve supply to the flexor digitorum muscle of the index finger. Which of the following movements can be used to specifically test for the function of this muscle?

) Abduction of a finger
) Adduction of a finger
) Flexion at the distal interphalangeal joint
) Flexion at the metacarpophalangeal joint
) Flexion at the proximal interphalangeal joint

A 3-year-old boy is brought to the emergency department because of epigastric pain and bile-stained vomitus. The child had been well prior to this episode eached all milestones normally. Which of the following developmental abnormalities is most likely to be the cause of this patient's problem?

) Annular pancreas
) Esophageal atresia
) Extrahepatic biliary atresia
) Hypertrophic pyloric stenosis

mmediately after a spontaneous vaginal delivery, a full-term male newborn is found to have a tuft of hair on the midline in the lumbar region. Palpation of t
an absence of spinous processes in that region. Imaging studies show no additional abnormalities. The most likely cause of this defect was failure of which
ollowing events during gestation?

) Development of the notochord
) Formation of the neural tube
) Formation of the yolk sac
) Fusion of the sclerotomes
) Migration of the neural crests

A 32-year-old woman who is 20 weeks' pregnant has had increasingly severe episodes of heartburn for the past 3 weeks. She has mild epigastric tenderne palpation of the abdomen. Which of the following drugs is contraindicated because of an increased risk for spontaneous abortion?

) Bismuth subsalicylate
) Famotidine
) Misoprostol
) Omeprazole
) Sucralfate

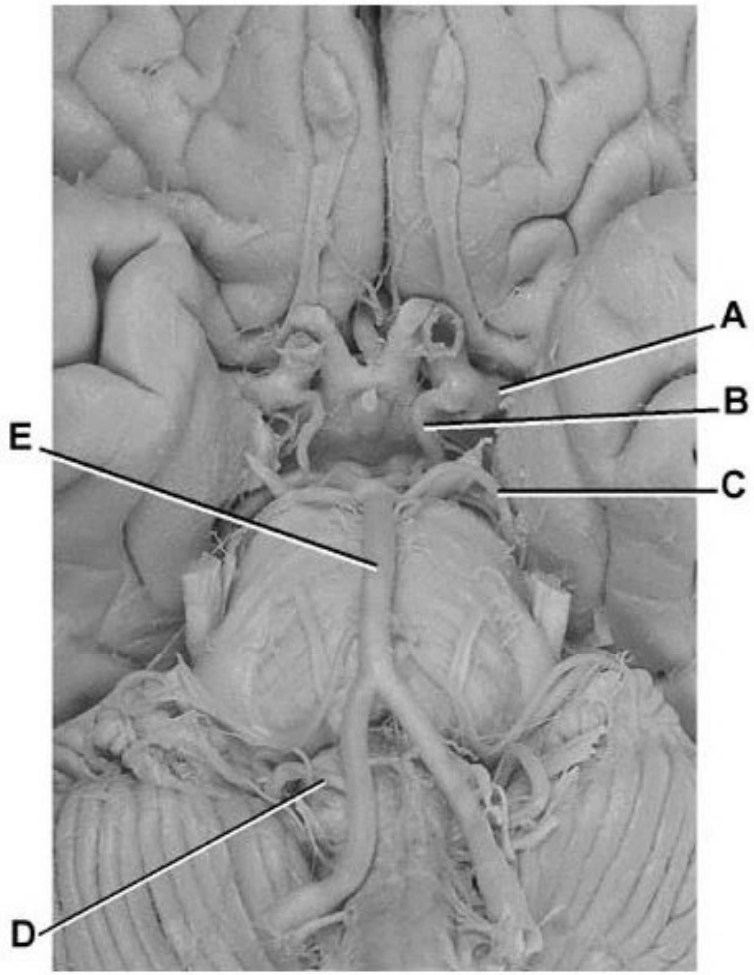
thin 66-year-old man is brought to the emergency department because of confusion. Initial laboratory tests show severe hyponatremia. The syndrome of i
DH (vasopressin) secretion is suspected. Which of the following findings best supports this diagnosis?

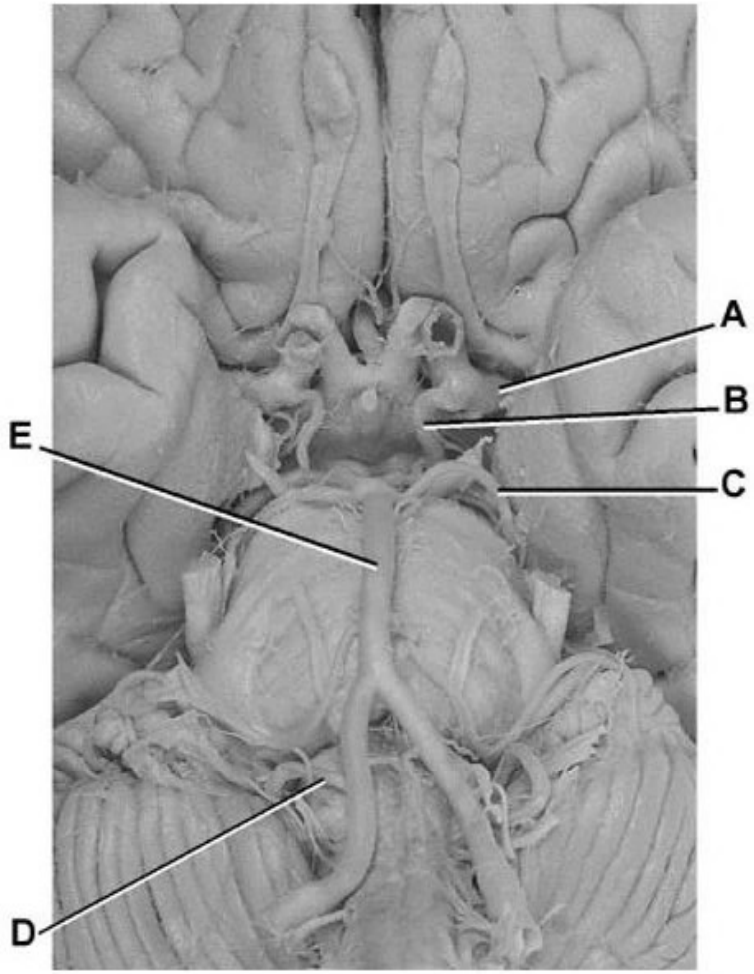
) Increased serum urea nitrogen and creatinine concentrations
) Serum potassium concentration < 2.5 mEq/L
) Urine osmolality > plasma osmolality
) Urine sodium concentration < 10 mEq/L
) Urine specific gravity of 1.002

24-year-old man is brought to the office because of fever and chills for 1 day. He is a paraplegic and uses a wheelchair. He has a history of recurrent urina fections treated with different antibiotics over the past year. His temperature is 38.5°C (101.3°F). Urine cultures are ordered, and treatment with ciprofloxa wo days later, he is still febrile, and the initial urine cultures grow *Escherichia coli* resistant to ciprofloxacin. Which of the following is the most likely cause o ganism's resistance?

) ~~Acquisition of a plasmid encoding ciprofloxacin acetylase~~
) Acquisition of a plasmid encoding 23S ribosomal RNA methylase
) Alteration in DNA gyrase
) Alteration in penicillin-binding proteins
) Alteration in 30S ribosomal RNA
) Alteration in RNA polymerase

71-year-old man is brought to the emergency department because of the sudden onset of dysarthria, dysphagia, and dizziness. Examination shows marke
ecreased pain sensation on the right side of the face and complete loss of pain sensation on the left side of the body. The most likely cause is occlusion of
llowing labeled blood vessels in the normal brain stem shown?





A) B) C) D) E)

10-year-old girl with a lifelong history of intermittent dyspnea is brought to the physician for a follow-up examination. During an episode of dyspnea, she tu
isode resolves after she squats. A systolic murmur was heard at birth. Today, a grade 4/6 systolic murmur is heard at the pulmonic area, radiating widely
ft side. Cardiac catheterization shows:

Location	Pressure (mm Hg)	O_2 Saturation
Aorta	120/80	82%
Vena cava	6/0	70%
Pulmonary artery	20/8	70%
Right atrium	4	70%
Left atrium	6	95%
Right ventricle	120/6	70%
Left ventricle	120/6	82%

hich of the following is most likely in this patient?

) Diastolic murmur
) Enlarged left ventricle on chest x-ray
) Hypervascular lung fields on chest x-ray
) Palpable right ventricular lift
) Pulsating aortic mass on CT scan of the chest

34-year-old woman with a long history of rheumatoid arthritis refractory to treatment with corticosteroids and methotrexate comes to the physician becaus story of increasingly severe low back pain, decreased appetite, and malaise. She has never had low back pain in the past. She has not had fever, lower e eakness, constipation, bladder or bowel incontinence, weight loss, or sensory changes. Six weeks ago, she began treatment with infliximab because of bil and, and knee pain. Her temperature is 37°C (98.6°F). Physical examination shows mild tenderness over the L1-2 vertebrae. Laboratory studies show:

Hemoglobin	11.3 g/dL
Hematocrit	32%
Leukocyte count	7800/mm^3
Platelet count	290,000/mm^3

n MRI of the spine shows osteomyelitis of L1-2 with destruction of the intervertebral disc space and a 1.2-cm adjacent abscess. The abscess is debrided, e abscess and bone tissue are sent for analysis. A Gram stain is negative. Pathologic examination of the bone specimen shows acute and chronic inflamm anuloma formation. Which of the following is the most likely cause of these findings?

) Ankylosing spondylitis
) Multiple myeloma
) Progression of rheumatoid arthritis
) Sarcoidosis
) Tuberculous osteomyelitis

68-year-old woman with acute myelogenous leukemia begins treatment with standard induction chemotherapy. After completion of the regimen, her leuko
200/mm^3 with an absolute neutrophil count of 475/mm^3. Which of the following is the most appropriate pharmacotherapy?

) Bcr-Abl tyrosine kinase inhibitor
) Erythropoietin
) Granulocyte-macrophage colony-stimulating factor
) Interleukin-2 (IL-2)
) Thrombopoietin
) Transforming growth factor-β

10-year-old girl is scheduled to undergo fixation of a right femoral fracture. A neuromuscular blocking agent is administered prior to insertion of an endotra
ubsequently, she develops severe muscle rigidity. Her temperature is 41.1°C (106°F), pulse is 100/min, and blood pressure is unstable. Which of the follow
ely caused this reaction?

) Etomidate
) Midazolam
) Nitric oxide
) Nitrous oxide
) Rocuronium
) Succinylcholine

40-year-old man with AIDS develops severe diarrhea that is refractory to all standard oral therapies. His diarrhea resolves after intravenous administration
nalogue of a naturally occurring hormone. The analogue administered most likely mimics which of the following hormones?

) Cortisol
) Glucagon
) Somatostatin
) Testosterone
) Vitamin D

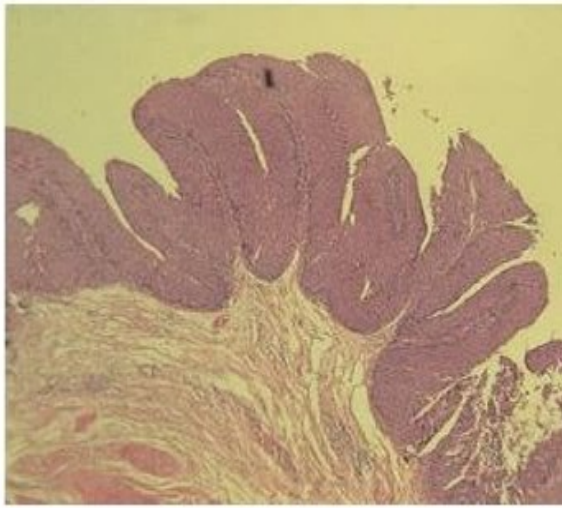
fter completing 6 courses of chemotherapy for cancer of the breast, a 45-year-old woman has shortness of breath, dyspnea on exertion, and orthopnea. B
e heard bilaterally, and there is an S_3 gallop. X-rays of the chest show an enlarged heart, bilateral interstitial and alveolar edema, and bilateral pleural effu
e following is the chemotherapeutic drug most likely to have caused these findings?

) Bleomycin
) Cytosine arabinoside
) Doxorubicin
) Methotrexate
) Vincristine

An 11-year-old boy is brought to the emergency department by ambulance with his mother 30 minutes after she was unable to awaken him from a nap. Th
hat he was recently diagnosed with type 1 diabetes mellitus and she has been having difficulty adjusting his insulin regimen. He is unconscious, and his b
acetone. He is responsive only to sharp pain. A rapid test shows a serum glucose concentration greater than 500 mg/dL. Which of the following best expla
patient's altered state of consciousness?

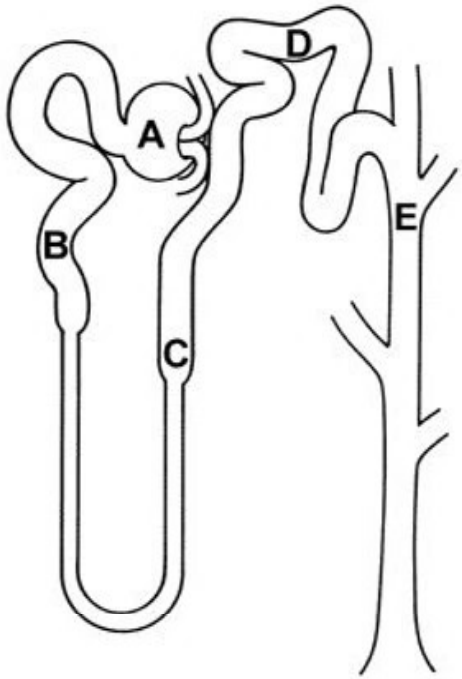
) ~~Altered affinity of oxygen from hemoglobin A_{1c}~~
) Diminished transport of glucose across the blood-brain barrier
) Excess free fatty acids in the cerebrospinal fluid
) Inability of neurons to perform glycolysis
) ~~Intracellular and extracellular dehydration~~

A 65-year-old woman comes to the physician because of blood in her urine with no pain for 5 days. Physical examination shows no abnormalities. Cystoscopy depicts multiple lesions as shown in the photomicrograph. Which of the following is the strongest predisposing risk factor for the development of this lesion?



A) Alcoholism
B) Cigarette smoking
C) Human papillomavirus infection
D) Schistosomiasis
E) Vinyl chloride exposure

A 7-year-old boy has metabolic acidosis and persistent phosphaturia. This patient most likely has a primary defect of which of the following labeled sites in the nephron shown?



A) B) C) D) E)

An 80-year-old woman with poorly controlled type 2 diabetes mellitus and hypertension comes to the physician for a follow-up examination. She also has a of chronic kidney disease with increasing proteinuria and a recent creatinine clearance of 30 mL/min. Her blood pressure is 165/95 mm Hg. Physical exam edema over the lower extremities. Pulmonary and cardiac examinations show no abnormalities. Compared with a healthy individual, which of the following aboratory findings is most likely in this patient?

	Hematocrit	Serum Parathyroid Hormone	Serum Calcitriol
)	Increased	normal	increased
)	Increased	normal	decreased
)	Normal	increased	decreased
)	Normal	decreased	normal
)	Decreased	increased	decreased
)	Decreased	decreased	decreased

Results of a 5-year screening program for HIV infection in a population of 10,000 commercial sex workers are shown:

Time	Number Remaining in Population	Number of New Patients With Positive Serology
Intake	10,000	4000
1 year	6000	400
2 years	5600	250
3 years	5350	300
4 years	5050	300
5 years	4800	250

Which of the following percentages is closest to the average annual incidence of infection in this population?

) 1%
) 5%
) 15%
) 20%
) 35%
) 40%

A 26-year-old man comes to the physician for a follow-up examination. One month ago, his total serum cholesterol concentration was 325 mg/dL, and the p
prescribed a 3-hydroxy-3-methylglutaryl (HMG) CoA reductase inhibitor. At the time of the present examination, his total serum cholesterol concentration is
Which of the following is the most likely cause of the decrease?

) Decreased absorption of dietary cholesterol
) Decreased conversion of chylomicrons to VLDL
) Increased concentration of HDL in plasma
) Increased intracellular esterification of cholesterol
) Increased number of LDL receptors on hepatocytes
) Increased synthesis of apolipoprotein B-100

A 62-year-old man comes to the physician for a follow-up examination. One month ago, he was diagnosed with atrial and ventricular arrhythmia, and appro pharmacotherapy was initiated at that time. Today, his pulse is 64/min, and blood pressure is 136/88 mm Hg; 1 month ago, his pulse was 78/min, and bloo 152/95 mm Hg. Physical examination shows no other abnormalities. An ECG shows normal sinus rhythm with a prolonged QT interval. Which of the follow most likely cause of these findings?

) Adenosine
) Flecainide
) Metoprolol
) Phenytoin
) Sotalol

A 32-year-old woman comes to the physician because of a 7-day history of sneezing, nasal stuffiness, and watery eyes. She has a history of similar sympt spring while gardening. Her temperature is 37°C (98.6°F). Which of the following types of cells are most likely to be increased in her nasal secretions as a eaction?

) Basophils
) Eosinophils
) Lymphocytes
) Mast cells
) Monocytes

A 4-year-old girl is brought to the physician because of a 6-month history of foul-smelling stools and failure to gain weight appropriately. She is at the 3rd p
height and weight. Abdominal examination shows distention. Stool analysis shows an increased fat concentration. Serum concentrations of anti-endomysia
tissue transglutaminase antibodies are increased. Which of the following findings in the gastrointestinal tract is the most likely cause of the disorder in this

) Eosinophilic infiltration of the mucosa of the small intestine
) Erosions of epithelial cells in the small intestine
) Lactase deficiency
) Periodic acid-Schiff (PAS)-positive granules in macrophages in the lamina propria of the small intestine
) Villous atrophy

A researcher hypothesizes that exposure to more than 50 µg/L of arsenic in drinking water is associated with an increased risk for development of a comm
compared with persons whose drinking water contains less than 5 µg/L of arsenic. Which of the following is the most time-efficient experimental design to
hypothesis?

) Case-control study
) Case series study
) Cohort study
) Open label, dose ranging study
) Randomized, double-blind, controlled trial

A 35-year-old man comes to the physician 1 week after he had a high blood pressure reading taken while he was donating blood. His pulse is 76/min, and s 180/100 mm Hg. Physical examination shows no other abnormalities. Treatment with losartan is started. Which of the following is most likely to occur in

) Decreased plasma renin activity
) Decreased serum bradykinin concentration
) Increased serum aldosterone concentration
) Increased serum angiotensin II concentration
) Increased serum norepinephrine concentration

A 70-year-old man is brought to the emergency department because of a 1-week history of progressive shortness of breath with mild exertion, cough, fatig weakness. The shortness of breath frequently awakens him from sleep and is partly relieved by sitting or standing. He has a 20-year history of hypertensio diuretics and ACE inhibitors; however, he does not always take his medications. His pulse is 85/min, respirations are 20/min, and blood pressure is 180/11 Crackles are heard on auscultation. A chest x-ray shows cardiomegaly. Echocardiography shows decreased left ventricular systolic function. Which of the patterns best characterizes this patient's cardiovascular variables at this time?

	Stroke Volume	Left Ventricular End-Diastolic Volume	Cardiac Output
)	↕	↕	↕
)	↕	↕	↕
)	↑	↓	↑
)	↕	↕	↕
)	↓	↑	↑
)	↓	↑	↓
)	↕	↕	↕
)	↕	↕	↕

A 35-year-old man comes to the physician because of a 1-week history of severe daily headaches of sudden onset. The pain is often located around his le associated with excessive tearing and redness of the eye. The headaches last from 30 minutes to 2 hours. He has had similar episodes during the past 7 y with periods of up to 1 year during which no headaches occur. Vital signs are normal. Funduscopic examination shows no abnormalities. Neurologic exami no focal findings. Which of the following is the most likely diagnosis?

) Acute meningitis
) Cluster headache
) Idiopathic intracranial hypertension
) Migraine
) Subarachnoid hemorrhage
) Temporal arteritis
) Tension-type headache

A 43-year-old woman with a 2-year history of labile hypertension comes to the physician for a follow-up examination. Her blood pressure has ranged from o 165/112 mm Hg since being diagnosed. One day after propranolol therapy is started, she develops a severe headache and her blood pressure is 214/13 Serum and urine catecholamine concentrations are four times the upper limit of the reference ranges. A CT scan shows a 2-cm nodule in the right adrenal of the following is most likely responsible for the increased blood pressure in this patient after propranolol therapy was started?

) Anxiety reaction
) Impaired degradation of catecholamines
) Increased adrenocorticotropic hormone release
) Infarction of the adrenal tumor
) Stimulation of aldosterone production
) Unopposed α-adrenergic tone

A 6-year-old girl is brought to the office by her mother because of a 2-day history of a severely itchy scalp. The mother reports that 10 children in her daug have the same symptoms. The patient has no history of major medical illness and receives no medications. Vital signs are within normal limits. Examinatio hair shafts shows 1- to 2-mm, white, globular protuberances. Which of the following is the most likely cause of this patient's condition?

) *Cladosporium cladosporioides*
) *Epidermophyton floccosum*
) *Pediculus humanus capitis*
) *Sarcoptes scabiei*
) *Trichophyton rubrum*

A 58-year-old man is brought to the emergency department 1 hour after being kicked in the side by a horse. Two years ago, he was diagnosed with chroni myelofibrosis. He drinks two 12-ounce beers daily. His temperature is 37°C (98.6°F), pulse is 120/min, respirations are 18/min, and blood pressure is 90/5 Abdominal examination shows guarding and tenderness over the left upper quadrant. Laboratory studies show:

Hemoglobin	9 g/dL
Hematocrit	27%
Leukocyte count	11,000/mm^3
Platelet count	280,000/mm^3

Ultrasonography of the abdomen shows intraperitoneal fluid. Four hours later, his hematocrit is 24%. A laparotomy is most likely to show which of the follow patient?

) Mesenteric artery thrombosis
) Pancreatic pseudocyst
) Perforated stomach
) Ruptured bladder
) Ruptured spleen

A 4-year-old boy is brought to the emergency department by his mother 6 hours after she noticed that his urine was red. He is otherwise feeling well. Fiftee he patient had a sore throat, fever, and cough. His mother thought he had the flu and treated him symptomatically with rest and analgesics, and his status now. His temperature is 38.5°C (101.3°F), pulse is 110/min, respirations are 22/min, and blood pressure is 100/50 mm Hg. Physical examination shows no and cardiac sounds, no organomegaly, and 1+ lower extremity edema, bilaterally. Laboratory studies show:

Serum	
Urea nitrogen	40 mg/dL
Creatinine	2 mg/dL
Albumin	3.6 g/dL
Urine	
Color	red-brown
Blood	3+
Protein	2+
Ketones	negative
RBC	30–50/hpf
RBC casts	few

Which of the following is the most likely diagnosis?

) Membranous nephropathy
) Minimal change disease
) Papillary necrosis
) Proliferative glomerulonephritis
) Tubulointerstitial nephritis

A 55-year-old man is brought to the emergency department because of a 1-hour history of severe chest pain, nausea, and vomiting. He is agitated, clamm profusely. His temperature is 36.7°C (98°F), pulse is 130/min, respirations are 36/min, and blood pressure is 85/45 mm Hg. Jugular venous pressure is 12 crackles are heard in the lung bases bilaterally. Which of the following hemodynamic changes is most likely in this patient?

	Pulmonary Capillary Wedge Pressure	Cardiac Output	Systemic Vascular Resistance
)	↑	↓	↑
)	↓	↓	↓
)	↓	↓	↑

A 52-year-old woman comes to the physician because of severe pain in her midback for 2 weeks. She has a history of left breast cancer treated with mast chemotherapy. Physical examination shows tenderness to palpation over the thoracic spine. An MRI of the back shows metastases in thoracic vertebral bo he following veins is the most likely path for tumor cells in the breast to obtain access to the vertebral bodies in this patient?

) Axillary
) Intercostal
) Internal thoracic
) Lateral thoracic
) Subclavian

A 25-year-old woman at 16 weeks' gestation comes to the physician for a routine examination. One year ago, she had a serum thyroxine (T_4) concentratio and a serum thyroid-stimulating hormone (TSH) concentration of 2.1 µU/mL. At that time, she was not taking any medications and she was not pregnant. A serum T_4 concentration is 13.2 µg/dL and serum TSH concentration is 2.2 µU/mL. Which of the following is most likely responsible for the increased serum concentration in this patient?

) Diffuse toxic goiter (Graves disease)
) High T_4 content in prenatal vitamins
) Increased fetal production of T_4
) Increased hepatic production of T_4-binding globulin
) Struma ovarii
) TSH-producing pituitary tumor

A 35-year-old woman comes to the physician because of a 1-year history of fatigue and lethargy; she also has had a 9-kg (20-lb) weight gain during this pe
hat she has to wear a coat in her office because she is always cold. Physical examination shows coarse skin. Examination of the neck shows no palpable
issue. Neurologic examination shows a delayed relaxation phase of the calcaneal (Achilles) reflexes. Serum concentrations of thyroxine (T_4) and triiodothy
decreased. A thyroid scan shows localization of the radioiodine in the midline of the inferior aspect of the oral cavity; no radioactivity is detected in the neck
adioiodine is most likely localized inferior to which of the following structures?

) Foramen cecum
) Frenulum of the tongue
) Median glossoepiglottic fold
) Sublingual caruncle
) Tracheobronchial bifurcation

A 75-year-old man is brought unconscious to the emergency department by his wife after he collapsed 30 minutes ago. The wife says he had abdominal pain that morning, but he did not intend to visit the physician. He has not had a physical examination since childhood. His wife says she has been begging him to go to the physician ever since he noticed an abdominal mass 2 years ago. He has smoked 2 packs of cigarettes daily for 60 years and drinks three 12-ounce cans of beer daily. His temperature is 36.8°C (98.2°F), pulse is 80/min and irregular with premature ventricular contraction, respirations are 35/min, and blood pressure is 110/60 mm Hg. Physical examination shows a pulsatile abdominal mass and minimal bowel sounds. A CT scan of the abdomen is shown. Which of the following is the most likely underlying cause of this patient's condition?

A) Atherosclerosis
B) Diverticulosis with abscess
C) Marfan syndrome
D) Mycotic inflammation
E) Syphilis
F) Takayasu arteritis

A 24-year-old man receives an injection of histamine in the brachial artery. Which of the following changes is most likely to occur in his forearm in response histamine?

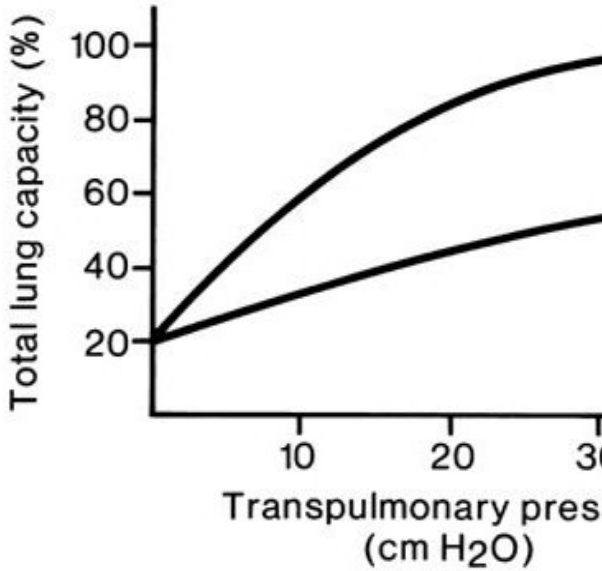
) Decreased capillary filtration rate
) Decreased interstitial hydrostatic pressure
) Decreased interstitial oncotic pressure
) Increased arteriole resistance
) Increased lymph flow

A 26-year-old man and his 25-year-old wife come to the physician for genetic counseling prior to conception. Both of the patients were previously found to anemia and an increased fraction of hemoglobin A_2. Genetic analysis shows that the man has a heterozygous null mutation of the β-globin gene, and the w heterozygous mutation known to cause a 50% decrease in β-globin gene function of one allele. Which of the following best represents the β-globin functio or this couple's offspring?

) All will have decreased β-globin function and transfusion dependent anemia
) One in four will have less than 10% β-globin function and transfusion dependent anemia
) One in four will have 25% β-globin function and may require occasional transfusions
) One in two will have 50% β-globin function without need for transfusions
) One in two will have normal β-globin function without need for transfusions

The graph shows expiratory pressure-volume curves that compare a healthy adult with a patient who has a 9-month history of progressive shortness of breath. These findings are most consistent with which of the following?

A) Asthma
B) Bronchopneumonia
C) Chronic bronchitis
D) Diffuse pulmonary fibrosis
E) Emphysema



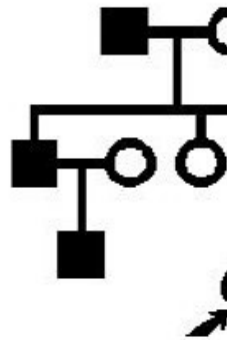
A 55-year-old man with type 1 diabetes mellitus comes to the physician because of intermittent burning pain of his feet during the past 4 months. Examinat shows allodynia bilaterally. Sensation to pinprick is decreased. Motor strength, deep tendon reflexes, joint position, and vibration sense are normal. Which s the most likely cause of the pain in this patient?

) Increased activation of glutamate receptors in the dorsal root ganglia
) Increased activity of presynaptic γ-aminobutyric acid receptors in the dorsal horn
) Increased activity of voltage-gated K^+ channels in the thalamus
) Inhibition of vanilloid receptors in the dorsal root afferents
) Persistent activation of voltage-gated Na^+ channels in the nociceptor

An 80-year-old woman comes to the physician because of a 1-month history of intermittent headaches and aching pain in her jaw while chewing. She has similar headaches or pain. Neurologic examination shows no focal findings. Which of the following is the most appropriate next step in establishing the dia

) Determination of erythrocyte sedimentation rate
) Leukocyte count
) Chest x-ray
) MRI of the brain
) Cerebrospinal fluid analysis

The 35-year-old woman indicated by the arrow has a family history of retinitis pigmentosa. Which of the following modes of inheritance can be eliminated based on this pedigree?



A) Autosomal dominant
B) Autosomal recessive
C) Multifactorial
D) X-linked recessive

A 57-year-old woman requires intubation in the intensive care unit after developing progressive dyspnea and hypoxemia 45 minutes after the initiation of a packed red blood cells. The patient has cirrhosis and was admitted to the hospital because of melena; the transfusion was initiated after she was found to hemoglobin concentration of 6.4 g/dL. Medical history includes hepatitis C diagnosed at the age of 41 years. She has a 25-year history of illicit intravenous patient is intubated and sedated. Her temperature is 36.9°C (98.4°F), pulse is 92/min, respirations are 16/min, and blood pressure is 94/58 mm Hg. There venous distention. Bilateral basilar crackles are heard on inspiration; there are no wheezes. Physical examination shows spider angiomata on the chest an minimal ascites, and trace bilateral pedal edema. Chest x-ray shows bilateral diffuse airspace disease without pleural effusions or cardiomegaly. This patie developed which of the following types of transfusion reactions?

) Acute hemolytic reaction
) Acute lung injury
) Anaphylactic reaction
) Rh incompatibility
) Serum sickness

An experimental study is conducted to examine the function of the pro-opiomelanocortin gene. The gene is found to encode an mRNA from which protein p generated. This protein serves as the precursor of adrenocorticotropic hormone and β-lipotropin. Which of the following processes is necessary in order to hormones?

) Alternative splicing
) Gene rearrangement
) Methylation of the gene
) Post-transcriptional modification
) Post-translational modification

A 37-year-old woman comes to the physician because of nausea and vomiting. She drank half a bottle of whiskey the previous evening because "I was in
because my boyfriend broke up with me. I normally don't drink alcohol, but I had to calm my nerves." She describes her mood as depressed, angry, and ur
says, "There is no one I can trust except you. I recently started a job and, from what I can tell, everyone I work with is a jerk." This patient most likely has w
ollowing personality traits?

) Antisocial
) Borderline
) Dependent
) Narcissistic
) Paranoid

A 1616-g (3-lb 9-oz) male newborn is delivered to a 16-year-old primigravid patient at 28 weeks' gestation. He develops severe respiratory distress within 1
reated with intubation and 100% inspired oxygen with continuous positive end-expiratory pressure. One month later, a chest x-ray shows persistently incre
n all lung fields. He develops pneumonia and dies. At autopsy, the lungs are firm and poorly aerated. Microscopic examination of lung tissue shows promi
ibrosis surrounding irregular, dilated airspaces with bronchiolar metaplasia. Which of the following is the most likely diagnosis?

) Bronchial asthma
) Bronchiectasis
) Bronchiolitis obliterans
) Bronchopulmonary dysplasia
) Chronic bronchitis
) Cystic adenomatoid malformation

A 24-year-old woman at 28 weeks' gestation is brought to the emergency department because of a 3-hour history of shortness of breath. She has asthma, currently takes no medications. Her pulse is 100/min, respirations are 32/min, and blood pressure is 120/83 mm Hg. Physical examination shows the use o muscles of respiration. Diffuse inspiratory and expiratory wheezes are heard. An inhaled β_2-adrenergic agonist is administered. Which of the following findi likely in this patient after this therapy?

) Bradycardia
) Diaphoresis
) Dry mouth
) Pallor
) Tremor

A 28-year-old man with AIDS has fever, headache, and lethargy. Examination shows papilledema and nuchal rigidity. A mucicarmine-stained smear of his cerebrospinal fluid is shown. Which of the following is the most likely primary site of infection with this organism?

A) Eyes
B) Gastrointestinal tract
C) Lungs
D) Middle ear
E) Skin