



# Family Medicine

**3<sup>rd</sup> edition**

- 500 board-formatted questions and answers
- Detailed explanations for correct and incorrect answers
- Targets what you really need to know for clerkship success
- Student tested and reviewed

**Doug Knutson**

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Graw  
Hill**



# **Family Medicine**

PreTest™ Self-Assessment and Review

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# Family Medicine

PreTest™ Self-Assessment and Review  
Third Edition

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# Acknowledgments

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Special thanks to all clinicians who take time from their busy practices and devote themselves to teaching the next generation of physicians. And, as always, thanks to John and Lucy for their support and understanding.

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# Introduction

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*Family Medicine: PreTest™ Self Assessment and Review*, Third Edition, is intended to provide medical students, as well as house officers and physicians, with a convenient tool for assessing and improving their knowledge of medicine. The 500 questions in this book are similar in format and complexity to those included in Step 2 of the United States Medical Licensing Examination (USMLE). They may also be a useful study tool for Step 3.

For multiple-choice questions, the *one best* response to each question should be selected. For matching sets, a group of questions will be preceded by a list of lettered options. For each question in the matching set, select *one* lettered option that is *most* closely associated with the question. Each question in this book has a corresponding answer, a reference to a text that provides background to the answer, and a short discussion of various issues raised by the question and its answer. A listing of references for the entire book follows the last chapter.

To simulate the time constraints imposed by the qualifying examinations for which this book is intended as a practice guide, the student or physician should allot about one minute for each question. After answering all questions in a chapter, as much time as necessary should be spent in reviewing the explanations for each question at the end of the chapter. Attention should be given to all explanations, even if the examinee answered the question correctly. Those seeking more information on a subject should refer to the reference materials listed or to other standard texts in medicine.

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# Preventive Medicine

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## Questions

### Immunizations

**1.** You are examining a normal-term newborn whose mother is hepatitis B virus (HBV) surface antigen positive. Which of the following protocols is recommended for the child?

- a. Hepatitis B vaccination at 0 to 2 months, a second dose at 1 to 4 months, and a third dose at 6 to 18 months of age.
- b. Hepatitis B vaccination within 12 hours of birth, with the timing of the second and third doses based on the mother's hepatitis B viral load at the time of delivery.
- c. Hepatitis B vaccination and hepatitis B immune globulin within 12 hours of birth, a second dose of hepatitis B vaccine at 1 to 2 months, and a third dose of vaccine at 6 months.
- d. Hepatitis B vaccination and hepatitis B immune globulin within 12 hours of birth, a second dose of the vaccine and immune globulin at 1 to 2 months, and a third dose of the vaccine and immune globulin at 6 months.
- e. Hepatitis B vaccination at birth, with serologic testing of the baby before additional vaccinations are given.

**2.** You are counseling a mother about her child's immunization schedule. She asks specifically if her child would benefit from the *Haemophilus influenzae* type b (Hib) vaccine. Which of the following statements is true about this vaccine?

- a. The vaccine is between 95% and 100% effective in preventing invasive Hib disease.
- b. The vaccine will help to prevent otitis media caused by *H influenzae*.
- c. Adverse reactions to the vaccine include an unusual high-pitched cry, high fevers, and seizures.
- d. The first vaccine should be administered at birth.
- e. The vaccine cannot be given concurrently with other vaccines.

## 2 Family Medicine

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- 3.** You are discussing varicella-zoster vaccination with a 24-year-old US-born male health care worker who does not ever remember having chicken pox. He does not have any contraindications to vaccine administration. Which of the following statements is true?
- Based on his age, he is considered immune.
  - Because of his age, only one dose of vaccine is required.
  - Serologic testing for varicella antibodies is necessary before vaccination.
  - If his wife is pregnant, vaccination should be avoided until after she delivers.
  - After vaccination, he may develop a varicella infection, but when it occurs, it does not appear to be contagious.
- 4.** A patient that you follow has recently started volunteering at a drug treatment hospital and requires hepatitis B vaccination. You find that he is hepatitis B surface antibody positive. Which of the following would be the best guideline to follow in this case?
- No vaccination is necessary based on his laboratory evaluation.
  - Administer one dose of hepatitis B vaccine.
  - Administer two doses of hepatitis B vaccine, at least 1 month apart.
  - Administer two doses of hepatitis B vaccine, at least 6 months apart.
  - Administer three doses of hepatitis B vaccine at the appropriate time interval.
- 5.** You are caring for a 23-year-old healthy homosexual male who works as an accountant and lives alone. He had the “typical childhood vaccinations” and provides documentation of his immunization record. He is up-to-date on tetanus, and was primarily immunized against diphtheria, pertussis, polio, hepatitis B, measles, mumps, rubella, and *H influenzae* type b. Which of the following vaccinations is indicated for this patient?
- Varicella
  - Meningococcus
  - Hepatitis A
  - Pneumococcus
  - A booster of the measles-mumps-rubella (MMR) vaccine
- 6.** In the prenatal workup for a 24-year-old patient, you discover she is not immune to rubella. When is the best time to vaccinate her against rubella?
- Immediately
  - In the second trimester of pregnancy
  - In the third trimester of pregnancy
  - In the early postpartum period
  - At least 4 weeks postpartum

**7.** A 32-year-old woman comes to your office for a complete physical examination. When discussing her vaccinations, you discover that she received her primary tetanus series as a child, and her last tetanus booster was 11 years ago. Which of the following is true?

- a. No vaccination is required.
- b. The patient should receive a tetanus-diphtheria (Td) booster.
- c. The patient should receive tetanus immune globulin.
- d. The patient should receive a diphtheria-tetanus-pertussis (DTP) immunization.
- e. The patient should receive tetanus, diphtheria, and acellular pertussis (Tdap) immunization.

**8.** You are caring for a family and find that the mother would like her children vaccinated against influenza. Her children are aged 4 months, 24 months, and 5 years. Which of the following represents current immunization recommendations for influenza?

- a. None of her children should be vaccinated.
- b. The 4-month-old and the 24-month-old should be vaccinated.
- c. The 24-month-old and the 5-year-old should be vaccinated.
- d. Only the 24-month-old should be vaccinated.
- e. All the children should be vaccinated.

**9.** You care for a child whose mother wants him immunized against influenza. He is currently 18 months old and has never had the influenza vaccine in the past. Which of the following is correct regarding this situation?

- a. He should not be immunized against influenza.
- b. He should receive one dose of the live, attenuated influenza vaccine (LAIV).
- c. He should receive two doses of LAIV.
- d. He should receive one dose of the trivalent inactivated influenza vaccine (TIV).
- e. He should receive two doses of TIV.



## 4 Family Medicine

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**10.** You are caring for a 2 1/2-year-old boy who is coming to your office for the first time. Reviewing his immunization record, you find that he has never received vaccination for invasive pneumococcal disease using the 7-valent pneumococcal conjugate vaccine. Which of the following is true regarding recommendations in his case?

- a. He is no longer at risk for invasive pneumococcal disease, and does not need to be vaccinated.
- b. He should only be vaccinated if he has an immunocompromising condition.
- c. He should only be vaccinated if he has a congenital or genetic pulmonary condition.
- d. He should be vaccinated, and should start the usual series for primary vaccination.
- e. He should be vaccinated, but with a modified schedule for immunization.

**11.** You are caring for a 30-year-old woman who asks you about the human papillomavirus (HPV) vaccination. She is recently divorced and not in a monogamous relationship. She has a history of genital warts, and had an abnormal Papanicolaou (Pap) test 2 years ago, for which she underwent colposcopy, biopsy, and cryotherapy. Subsequent Pap tests have been normal. Which of the following is true?

- a. She is unable to be vaccinated because she has a history of genital warts.
- b. She is unable to be vaccinated because she has a history of an abnormal Pap test.
- c. She is unable to be vaccinated because she is not in a monogamous relationship.
- d. Vaccination is not recommended for 30-year-old women.
- e. She should be vaccinated.

**12.** You are determining which of the patients in your practice should receive the quadrivalent HPV vaccination. This vaccine is inappropriate for which of the following patients?

- a. An 18-year-old woman with an abnormal Pap test that has yet to be followed up appropriately
- b. A 16-year-old girl who recently delivered her first child and is currently breast-feeding
- c. A pregnant 14-year-old
- d. A 12-year-old with asthma currently taking steroids for an exacerbation
- e. An 11-year-old victim of sexual abuse

**13.** A recently retired 67-year-old woman presents to you to establish care. She was a smoker for a long time, but quit 5 years ago. She is generally healthy, but her prior physician told her that she has “emphysema.” She was prescribed an “inhaler” to use as-needed and only uses it rarely. She asks about necessary immunizations. Her social history indicates that she lives with her daughter and often cares for her infant granddaughter. Her chart indicates that she had a pneumococcal polysaccharide vaccine at age 63 and a Td shot at age 63. Which of the following vaccines should she receive?

- a. MMR
- b. Tdap
- c. Varicella
- d. Pneumococcal polysaccharide
- e. Intranasal influenza

**14.** Of the following, which patient would be considered the most appropriate candidate for vaccination against herpes zoster?

- a. A 53-year-old man with a history of chicken pox as a child and a personal history of diabetes mellitus
- b. A 58-year-old woman who recently underwent successful surgery for colon cancer
- c. A 33-year-old man who was recently diagnosed with human immunodeficiency virus (HIV)
- d. A 22-year-old with a personal history of sickle-cell disease
- e. A 66-year-old man with a personal history of shingles at age 56

### Screening Tests

**15.** You are discussing preventive health screening with a 19-year-old college student. He has no family history of hypertension, coronary artery disease, diabetes, or cancer. At what age should you consider screening for lipid disorders?

- a. 18 years
- b. 21 years
- c. 25 years
- d. 35 years
- e. 50 years

**16.** You are seeing a 58-year-old smoker for a routine health examination. You have counseled him on discontinuing tobacco use, and he is considering that alternative. He denies coughing, shortness of breath, or hemoptysis. Which of the following is a recommended screen for lung cancer in this patient?

- a. He should not be screened for lung cancer.
- b. Chest x-ray.
- c. Chest computed tomography (CT).
- d. Sputum cytology.
- e. Bronchoscopy.

**17.** You are seeing a healthy 26-year-old woman for a routine health visit. She mentions that she and her husband are thinking about starting a family soon. She has never been pregnant before. Which of the following interventions, if done prior to pregnancy, has been shown to have a clear beneficial outcome for this woman and her potential child?

- a. Blood typing and antibody testing
- b. Screening for HIV
- c. Screening for *Chlamydia*
- d. Screening for asymptomatic bacteriuria
- e. Prescribing 0.4 to 0.8 mg of folic acid daily

**18.** You are discussing cancer screening with a patient. Her father was diagnosed with colorectal cancer at age 62. When should you recommend she begins colorectal cancer screening?

- a. 40 years
- b. 50 years
- c. 52 years
- d. 60 years
- e. 62 years

**19.** You are discussing cancer screening with a female patient. She has no family history of breast cancer, and routine risk analysis indicates that she is not at increased risk for the disease. According to the US Preventive Services Task Force (USPSTF), at what age should she start getting routine mammograms?

- a. 30 years
- b. 35 years
- c. 40 years
- d. 45 years
- e. 50 years

**20.** In a routine examination, a 33-year-old woman asks you about breast self-examination as a breast cancer screening method. Which of the following best represents the current American Academy of Family Physicians recommendations regarding breast self-examination (BSE)?

- a. There is strong evidence that BSE is an appropriate screening modality.
- b. There is limited evidence that BSE is an appropriate screening modality.
- c. There is no evidence that BSE is an appropriate screening modality.
- d. There is insufficient evidence to recommend for or against BSE.
- e. Clinicians should not teach their female patients how to perform effective breast self-examinations.

**21.** A 52-year-old man comes to your office for a complete physical examination. He is interested in prostate cancer screening. Which of the following best represents current guidelines for prostate cancer screening?

- a. There is insufficient evidence to recommend for or against prostate cancer screening.
- b. Screening should consist of a digital rectal examination (DRE).
- c. Screening should consist of a serum prostate specific antigen (PSA) test.
- d. Screening should consist of both, a DRE and a serum PSA test.
- e. Screening should include a CT scan of the prostate in high-risk individuals.

**22.** During a routine appointment to discuss an upper respiratory infection, you find that your 18-year-old female patient has become sexually active for the first time. According to current guidelines, when should you begin cervical cancer screening on this patient?

- a. At the current time
- b. At the age of 19
- c. At the age of 20
- d. At the age of 21
- e. Cervical cancer screening is not recommended

**23.** You are seeing a 55-year-old patient for her annual physical examination. She has been married to her husband for 32 years and reports that both have been monogamous. Records indicate that she has had normal Pap smears every 1 to 2 years for the last 20 years, and has never had an abnormal Pap smear. At what age is it appropriate to discontinue Pap screening on this patient?

- a. 55 years.
- b. 60 years.
- c. 65 years.
- d. 70 years.
- e. Never discontinue screening.

**24.** You are caring for a healthy woman whose cousin was just diagnosed with unilateral breast cancer at age 33. Your patient has no other relatives with known histories of breast or ovarian cancer. Which of the following is true regarding the current recommendations for genetic screening for breast cancer mutations?

- a. The patient should not be offered testing.
- b. The patient should be tested only if she is of Ashkenazi Jewish descent.
- c. The patient should be offered testing only if she is of Ashkenazi Jewish descent.
- d. The patient should be tested regardless of her ethnicity.
- e. The patient should be offered testing regardless of her ethnicity.

### **The Preoperative Evaluation**

**25.** You are completing a preoperative evaluation on a 46-year-old woman who has recently been diagnosed with gall stones. She is generally healthy, and besides being obese has no chronic medical problems. Given her history, what is the potential surgical complication that would be most likely be lethal for her?

- a. Infectious complications
- b. Cardiac complications
- c. Pulmonary complications
- d. Thrombosis
- e. Adverse reaction to anesthesia

**26.** A 52-year-old generally healthy female patient of yours has recently been diagnosed with breast cancer. She is presenting for presurgical evaluation for her breast biopsy. What is the risk category associated with this surgery?

- a. Extremely low risk
- b. Low risk
- c. Moderate risk
- d. High risk
- e. Extremely high risk

**27.** You are doing a preoperative history and physical examination on a 58-year-old woman who will be undergoing a thyroidectomy later in the month. She is obese, sedentary with type 2 diabetes and hyperlipidemia. She reports that she is unable to walk two blocks without stopping to rest. She denies chest pain with activity. What type of cardiac evaluation should she have prior to undergoing her surgical procedure?

- a. No cardiac evaluation is necessary.
- b. She should have an electrocardiogram (ECG) prior to surgery, but if that is normal, she needs no other cardiac evaluation.
- c. She should have a noninvasive stress test prior to surgery.
- d. She should have a heart catheterization prior to surgery.
- e. Surgery should be deferred, as her risk is too great.

**28.** You are doing a preoperative clearance for a 60-year-old man undergoing an elective knee replacement. He has diabetes, hyperlipidemia, and a history of a prior myocardial infarction (MI) 4 months ago. After his heart attack, he had triple vessel bypass surgery. Since that time, he has done well and has been asymptomatic from a cardiac standpoint. Which of the following is true in this case?

- a. Prior to surgery, no cardiac evaluation is necessary given his recent revascularization.
- b. He should have an ECG prior to surgery. If that is normal, he needs no other cardiac evaluation.
- c. He should have a stress test prior to surgery.
- d. He should have a heart catheterization prior to surgery.
- e. Surgery should be deferred.

**29.** A 59-year-old male patient is presenting for preoperative testing before undergoing a hernia repair. He has a history of coronary artery disease and hyperlipidemia, but no other significant medical history. He had a positive stress test 4 years ago that was followed by an angioplasty. He has been asymptomatic ever since. Which of the following is the best answer regarding the type of cardiac evaluation should he have prior to undergoing his procedure?

- a. No cardiac evaluation is necessary.
- b. He should have an echocardiogram prior to surgery.
- c. He should have a stress test prior to surgery.
- d. He should have a heart catheterization prior to surgery.
- e. Surgery should be deferred.

**30.** You are completing a preoperative evaluation on a 66-year-old man who will be undergoing prostate surgery. He has hypertension but no other diagnosed medical problems. He has smoked half pack of cigarettes daily since he was 21 years old. He denies dyspnea or cough. Which of the following is true regarding his preoperative evaluation?

- a. No pulmonary evaluation is necessary.
- b. He should have a routine baseline chest x-ray prior to surgery.
- c. He should have pulmonary function testing prior to surgery.
- d. He should have a baseline pulse oximetry reading prior to surgery.
- e. He should have arterial blood gasses done prior to surgery.

### **Travel Medicine**

**31.** You are counseling one of your patients who is planning a trip overseas. He is concerned about becoming ill while traveling. Which of the following is the most common illness reported by international travelers?

- a. Diarrhea
- b. Upper respiratory infection
- c. Parasitic infection
- d. Malaria
- e. Hepatitis

**32.** You are counseling a patient who is planning a trip with his wife to celebrate their 30th anniversary. They are going on an African safari, and wonder about health risks associated with international travel. What would you tell him is the most common cause of death among international travelers?

- a. Infections
- b. Accidents
- c. Homicide
- d. Heart disease
- e. Vascular disease (ie, deep venous thrombosis and pulmonary embolus)

**33.** You are performing a physical examination on a student traveling to Mexico with her college Spanish class. She is concerned about traveler's diarrhea, and asks about antibiotic prophylaxis. Which of the following best represents the current guideline from the Centers for Disease Control and Prevention (CDC) for prevention of traveler's diarrhea?

- a. The CDC does not have an antibiotic guideline regarding antibiotic prophylaxis for traveler's diarrhea.
- b. The traveler should take trimethoprim-sulfamethoxazole.
- c. The traveler should take doxycycline.
- d. The traveler should take ciprofloxacin.
- e. The traveler should take metronidazole.

**34.** You are discussing vaccinations for a patient who is traveling internationally. Because of a significant fear of needles, he is unwilling to obtain any vaccination unless it is required. Which of the following is the only mandatory travel vaccine?

- a. Yellow fever
- b. Polio
- c. Hepatitis A
- d. Cholera
- e. Typhus

### **Contraception**

**35.** You are reevaluating a 32-year-old woman in your office. You started her on combination oral contraceptives (COCs) 3 months ago, and at each of three visits since then, her blood pressure has been elevated. Which of the following is the most appropriate next step?

- a. Discontinue the oral contraceptive and recommend a barrier method.
- b. Change to a pill with a higher estrogen component.
- c. Change to a pill with a lower estrogen component.
- d. Change to a pill with a lower progestin component.
- e. Change to a progestin-only pill.



**36.** You started a 20-year-old woman on COCs 2 months ago. She returns to your office asking to discontinue their use because of side effects. Statistically speaking, which side effect of COCs is most frequently cited as the reason for discontinuing their use?

- a. Nausea
- b. Breast tenderness
- c. Fluid retention
- d. Headache
- e. Irregular bleeding

**37.** You are counseling a 23-year-old woman who is interested in starting COC pills. Which of the following is true regarding risks associated with COC use?

- a. Users of COC pills have an increased risk of ovarian cancer.
- b. Users of COC pills have an increased risk of endometrial cancer.
- c. Users of COC pills have an increased risk of venous thromboembolism.
- d. Users of COC pills have an increased risk of hemorrhagic stroke.
- e. Users of COC pills have an increased risk of diabetes mellitus.

**38.** You are counseling a patient over the phone who has been taking oral contraceptives regularly for 2 years. Her husband surprised her with a weekend “get away” vacation, and she forgot to bring her pills. She therefore missed taking one active pill. She and her husband had intercourse during their trip, and are not interested in being pregnant at this time. Which of the following is most correct?

- a. She should ignore the one missed pill.
- b. She should take two pills immediately.
- c. She should take two pills immediately and use a backup method of contraception for 7 days.
- d. She should use emergency contraception immediately and restart her pills on the following day.
- e. She should use emergency contraception immediately and use a different form of birth control for the remainder of her cycle.

**39.** A 29-year-old obese woman with type 2 diabetes mellitus is asking you about progestin-only pills as a method of contraception. Which of the following is true?

- a. Progestin-only pills are contraindicated in women with diabetes.
- b. Progestin-only pills would increase her risk of thromboembolic events.
- c. Progestin-only pills are only Food and Drug Administration (FDA) approved for nursing women.
- d. Progestin-only pills increase her risk for ectopic pregnancy.
- e. Progestin-only pills should be taken every day of the month, without a hormone-free period.

**40.** You are counseling a patient regarding contraception options. She is 36 years old, she smokes one pack of cigarettes daily, weighs 145 lb, and has no medical illnesses. She is sexually active, but is not in a monogamous relationship. Which of the following is her best contraception option?

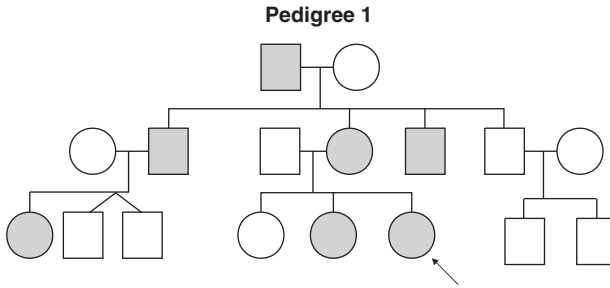
- a. COC pills
- b. An intravaginal ring system delivering estrogen and progestin
- c. A transdermal contraceptive patch delivering estrogen and progestin
- d. An injectable form of long-acting progestin
- e. An intrauterine device (IUD)

**41.** A 28-year-old monogamous married woman comes to you for emergency contraception. She and her husband typically use condoms to prevent pregnancy, but when they had sex approximately 36 hours ago, the condom broke. She does not want to start a family at this time. Which of the following statements is true regarding the use of emergency contraception pills (ECPs)?

- a. She is too late to use ECPs in this case.
- b. ECPs are 90% to 100% effective when used correctly.
- c. There are no medical contraindications to the use of ECPs, other than allergy or hypersensitivity to the pill components.
- d. ECPs disrupt the pregnancy, if given within days of implantation.
- e. Clinicians should perform a pregnancy test before prescribing ECPs.

## Genetics and Pharmacogenomics

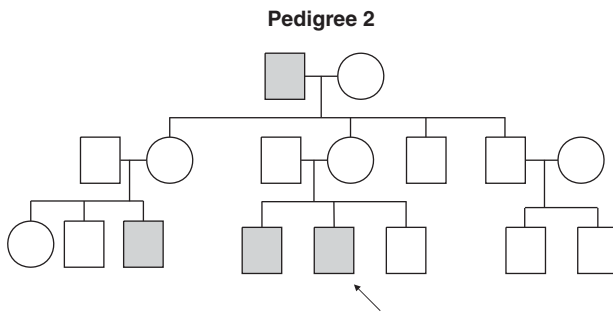
42. Consider the following pedigree:



Assuming that the solid circles indicate that the persons are affected with the condition in question, which of the following is true regarding this condition?

- It is autosomal dominant.
- It is autosomal recessive.
- It is X-linked recessive.
- It is X-linked dominant.
- It is unlikely to be a genetic disorder.

43. Consider the following pedigree:



Assuming that the solid squares indicate that the persons are affected with the condition in question, which of the following is true regarding this condition?

- It is autosomal dominant.
- It is autosomal recessive.
- It is X-linked recessive.
- It is X-linked dominant.
- It is unlikely to be a genetic disorder.

44. You are caring for a 45-year-old man with fatigue. Workup revealed hereditary hemochromatosis, an autosomal recessive disorder. Neither of his parents ever showed signs of the disease, though they were never tested while alive. Your patient has one sister. What is the chance that his sister also has hereditary hemochromatosis?

- No chance
- 10% chance
- 25% chance
- 50% chance
- 100% chance

45. You are caring for a young family who just had a child with multiple malformations of unknown etiology. What type of testing would be best for identifying the diagnosis?

- Cytogenetic analysis
- Direct DNA testing
- Biochemical testing
- Linkage analysis
- Protein-specific testing

### Biostatistics

**46.** You note that in your practice, a large number of women with a family history of breast cancer in a first-degree relative develop breast cancer themselves. You evaluate a number of charts, and find that 5% of the women in your practice who have breast cancer have a family history, but only 2% of women without breast cancer have a family history. Given this information, what is the sensitivity of using family history as a predictor of breast cancer in your patient population?

- a. 2%
- b. 5%
- c. 93%
- d. 95%
- e. 98%

**47.** You are reading a population study that reports 90% of people with lung cancer are smokers. Thirty percent of the people without lung cancer are also smokers. Given this information, what is the specificity using smoking as a predictor of lung cancer?

- a. 10%
- b. 30%
- c. 40%
- d. 70%
- e. 90%

**48.** You are determining whether or not to use a rapid streptococcal antigen test to screen for streptococcal pharyngitis. You find that 2% of people with strep throat actually test negative using this test. Which of the following statements best describes this situation?

- a. The sensitivity of the test is 2%.
- b. The specificity of the test is 98%.
- c. The test has a 2% false-negative rate.
- d. The test has a 2% false-positive rate.
- e. The test has a positive predictive value of 98%.

**49.** You are reading a medical journal and come across an article about diabetes. The study followed 10,000 patients over 3 years. At the start of the study, 2000 people had diabetes. At the end of the study, 1000 additional people developed diabetes. What was the incidence of diabetes during the study?

- a. 10%
- b. 12.5%
- c. 20%
- d. 30%
- e. 50%

**50.** You are reading a study that compares cholesterol levels in children whose fathers died from an MI with cholesterol levels in children whose fathers died from other causes. The  $p$  value obtained in the test was  $< 0.001$ . What does this value indicate?

- a. There was no difference in cholesterol levels between the two groups.
- b. The difference in the cholesterol levels was less than 0.1%.
- c. There is a less than 0.1% probability that the results obtained in this study were incorrect.
- d. There is a less than 0.1% probability that the results obtained in this study occurred because of a sampling error.
- e. If the null hypothesis is true, there is a less than 0.1% probability of obtaining a test statistic equal to or more extreme than the one obtained.

**51.** You are considering using a new influenza screening test. You find a study that evaluated 1000 patients with this new test. Of these 1000 patients, 400 had the disease. Three hundred of those had positive tests, and 100 of those had a negative test. Of the 600 that did not have the disease, 200 had positive tests, and 400 had negative tests. What is the positive predictive value of this test?

- a. 50%
- b. 60%
- c. 66%
- d. 75%
- e. 80%

**52.** You find that many of your patients that have gone to the emergency department with chest pain have a negative set of initial cardiac enzymes. Most of those with a negative set of initial enzymes did not have a heart attack. You decide to evaluate 100 of your patients who have gone to the emergency department with chest pain to find out if an initial set of negative enzymes by itself is a good predictor of those that are not having an MI. Of those 100 patients, 20 of them had acute MIs. Of those 20, 10 had a positive set of enzymes initially. Of the 80 that did not have an acute MI, none of them had a positive set of initial enzymes. Given this information, what is the negative predictive value of the initial set of cardiac enzymes in your patient population?

- a. 20%
- b. 22%
- c. 50%
- d. 89%
- e. 100%

# Preventive Medicine

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## Answers

**1. The answer is c.** (*Bope, pp 548-553; Mengel, pp 767-774.*) Hepatitis B infects approximately 1.25 million people in the United States and more than 450 million people globally. It is transmitted more efficiently than hepatitis C or HIV, and the likelihood of transmission increases with the level of HBV DNA in the serum. In high-prevalence areas, hepatitis B is most often vertically transmitted, but because of screening and immunization practices, it's most often transmitted horizontally in the United States. Studies have shown that compared to no intervention, treating the infant of a hepatitis B–positive mother with hepatitis B immune globulin within 12 hours of birth, and vaccination, substantially reduces the transmission rate. Therefore, all mothers should be screened for hepatitis B surface antigen, and if positive, the babies should be treated as described in this question. If the hepatitis status of the mother is unknown, the child should get the vaccine, and the mother should be tested. If the mother is found to be positive, the baby should receive immune globulin within 7 days.

**2. The answer is a.** (*Mengel, pp 767-774.*) Prior to the introduction of an effective vaccine, 1 in 200 children developed invasive *Hemophilus* disease before age 5, often leading to meningitis, hearing loss, or mental retardation. Vaccines against Hib have been 95% to 100% effective in preventing invasive Hib disease. The vaccine does not reduce the rate of otitis media, as most cases are caused by nontypeable *H influenzae*. Adverse reactions to the vaccine are very rare. In fact, no serious reactions have been linked to the vaccine, and systemic reactions like fever and irritability are infrequent. The most common side effects are limited to mild fever, local redness, swelling, or warmth. The vaccine should not be administered before 6 weeks of age, as immune tolerance to the antigen may be induced. The vaccine may be given with other vaccines.

**3. The answer is c.** (*ACIP, 2011; Mengel, pp 767-774.*) Varicella immunization is recommended for adults who have not had evidence of infection or immunization. US-born people born before 1980 are generally considered



immune, with the exception of health care workers and pregnant women. Two doses of vaccine are required, 4 to 8 weeks apart, regardless of a person's age, unless they have evidence of receiving one vaccine dose in the past. While many people who do not remember having chicken pox have serologic evidence of immunity, testing is not necessary, as the vaccine is well-tolerated in those already immune. While nonimmune pregnant women should not receive the vaccine until after delivery, household contacts of immunocompetent pregnant women do not need to delay vaccination. Rarely, people receiving the vaccine may develop infection. This occurs in approximately 1% of people vaccinated. However, the case is mild, and does not appear to be contagious.

**4. The answer is a.** (*ACIP, 2011.*) Hepatitis B vaccination is recommended for adults in various risk categories. Behavioral risk categories include sexually active persons with more than one sex partner in the last 6 months, persons seeking evaluation or treatment for a sexually transmitted disease, current or recent injection-drug users, and men who have sex with men. Occupational risk categories include health care personnel and public safety workers who may be exposed to blood or body fluids. Medical risk categories include persons with end-stage renal disease, persons with HIV infection, and persons with chronic liver disease. In this question, having a positive surface antibody means that the patient is immune. If the patient were to be surface antibody negative, the immunization schedule would be one injection at time 0, one between 1 and 2 months after that, and a third injection between 4 and 6 months after the second.

**5. The answer is c.** (*ACIP, 2011.*) Hepatitis A vaccination is indicated for men who have sex with men or users of injection drugs. Occupational indications include persons working with hepatitis A virus (HAV)-infected primates or with HAV in a research laboratory setting. Medical indications include chronic liver disease and persons that receive clotting factor concentrates. The patient is not at high risk for varicella, and therefore vaccination is not indicated. Meningitis vaccination is indicated for those with functional asplenia or travelers to endemic areas. College students can be counseled about the vaccination, especially if they are living in a dormitory. Pneumococcal vaccination is only indicated for those with chronic diseases and functional asplenia or residents of long-term care facilities. An MMR booster is not indicated.

**6. The answer is d.** (*Bope, pp 141-142.*) Rubella is normally a mild self-limited illness, but infection during pregnancy can result in fetal death or congenital defects known as congenital rubella syndrome (CRS). CRS is devastating, and rubella immunity is important for women considering pregnancy. If a woman is found to be rubella nonimmune, vaccination should not occur if she is pregnant or planning pregnancy in the next 4 weeks. Although the vaccine is contraindicated in pregnancy, inadvertent vaccination is not an indication for therapeutic abortion. If the patient is currently pregnant and nonimmune, she should be vaccinated as early in the postpartum period as possible.

**7. The answer is e.** (*McPhee, pp 1-18.*) Increasing reports of pertussis among US adults has stimulated vaccine development for older persons. A tetanus-diphtheria five-component acellular pertussis vaccine (Tdap) is available, and recommended for adults aged 19 to 64 to replace the next booster dose of tetanus.

**8. The answer is c.** (*Bope, pp 90-93.*) Influenza is a highly contagious viral infection. Vaccination is between 30% and 90% effective in preventing influenza or complications from influenza. Influenza vaccination is recommended annually for children aged 6 months and older. The minimum age for vaccination with the trivalent inactivated influenza vaccine (TIV) is 6 months, but the minimum age for the live, attenuated influenza vaccine (LAIV) is 2 years. In this case, since the mother wishes all her children be vaccinated, only the 4-month-old should be excluded because of age.

**9. The answer is e.** (*ACIP, 2011.*) The influenza vaccine is recommended for all persons aged 6 months and older. The minimum age for LAIV is 2 years, so that vaccine would be inappropriate for the child in this question. The minimum age for TIV is 6 months. It is recommended that practitioners administer two doses of vaccine (separated by at least 4 weeks) to children between the ages of 6 months and 8 years who are receiving the seasonal influenza vaccine for the first time, or who were vaccinated for the first time during the previous influenza season, but only received one dose. Since this is the child's first vaccination, he should receive two doses.

**10. The answer is e.** (*ACIP, 2011.*) The CDC Advisory Committee on Immunization Practices (ACIP) updated its recommendation for the use of

the 7-valent pneumococcal vaccination (PCV7) in children younger than 5 years of age who have not been vaccinated. This recommendation states that all healthy children aged 24 to 59 months who have not completed their primary immunization for PCV7 be given one dose of PCV7. If the child had received less than three doses of the PCV7 during his/her primary immunization series, two doses should be given at least 8 weeks apart. The usual schedule for the series is one vaccination at 2, 4, 6, and 12 to 15 months.

**11. The answer is d.** (*ACIP, 2011.*) The HPV vaccination is recommended for all adult women younger than 26 years of age who have not completed the vaccine series. History of genital warts or an abnormal Pap test are not, by themselves, evidence of prior infection with all HPV subtypes, and are not reasons to avoid vaccination. Persons who are sexually active but not in monogamous relationships are at risk for infection, and should therefore be immunized if they meet criteria.

**12. The answer is c.** (*ACIP, 2011.*) The quadrivalent HPV vaccination has been shown to be highly immunogenic, safe, and well-tolerated in females aged 9 to 26 in studies. To be most effective, the vaccine should be given before a female becomes sexually active. It can be administered when a patient has an abnormal Pap test or when a woman is breast-feeding. It can also be given when a patient is immunocompromised because of a disease or medication. It is not recommended for use during pregnancy. The vaccine was recently approved for use in males aged 9 to 26 to reduce the likelihood of genital warts. As in women, it is most effective if administered before exposure to HPV through sexual contact.

**13. The answer is b.** (*ACIP, 2011.*) Of the vaccines listed, only the Tdap is indicated in this patient. According to 2011 guidelines, the Tdap vaccine should be administered to patients 65 years and older who have close contact with an infant aged less than 12 months. The Tdap vaccine should be administered regardless of the interval since the most recent Td-containing vaccine. People born before 1957 do not need to be vaccinated with an MMR, as they are considered immune. People born before 1980 are considered immune to varicella, and therefore do not need vaccination. Although she has a medical indication for the pneumococcal polysaccharide vaccine, she had her first shot before the age of 65. Therefore, she should get a one-time revaccination 5 years after her initial vaccination. Intranasal influenza should only be used in healthy adults younger than the age of 50.

**14. The answer is e.** (*ACIP, 2011.*) The herpes zoster vaccination is currently recommended for adults 60 years of age or older regardless of whether or not they report a prior episode of herpes zoster. The vaccination is not approved for persons younger than the age of 60, though trials are currently underway to assess safety and efficacy in younger age groups.

**15. The answer is d.** (*AAFP, 2011.*) Determining which screening tests are appropriate for a patient is difficult, and requires individual judgment based on the clinical situation. The American Academy of Family Physicians has developed clinical preventive services charts based on age alone in low-risk adults, and rank the screen as “strongly recommend,” “recommend,” and “healthy behavior.” Strongly recommended screens are supported by good quality evidence and demonstrate substantial net benefit for the patient. It is strongly recommended that men are screened for lipid disorders at age 35, even in the absence of other risk factors. Screening would occur earlier in the presence of diabetes, a family history of heart disease by age 50, or with other risk factors.

**16. The answer is a.** (*AAFP, 2011.*) The USPSTF has found that CT scanning, chest x-ray, and sputum cytology can detect lung cancer at an earlier stage than no screening at all, but also found no evidence that any screening strategy actually improves mortality. Therefore, no screening is recommended for this patient.

**17. The answer is e.** (*AAFP, 2011.*) Of the interventions listed above, only prescribing folic acid has been shown to be beneficial prior to pregnancy. It will decrease the chance of neural tube defects in the baby. The other interventions should be done early in the pregnancy to ensure good pregnancy outcome.

**18. The answer is b.** (*AAFP, 2011.*) The American Academy of Family Physicians recommends screening for colorectal cancer using fecal occult blood testing, sigmoidoscopy, or colonoscopy in adults beginning at age 50 and continuing until age 75. The risk and benefits of these screening methods vary. When there is a family history of colon cancer, it is generally recommended to start screening 10 years before the cancer was found in the family member, or at age 50, whichever is sooner. This recommendation is consistent with the USPSTF recommendations.

**19. The answer is e.** (AAFP, 2011.) Mammographic screening has been shown to decrease mortality from breast cancer. However, screening interval and recommendations have changed based on evidence review. As recently as 2009, the USPSTF developed evidence-based recommendations to help guide physicians and patients. Those guidelines include recommendations that decisions to conduct screening before the age of 50 should be individualized, and take into account patient's risks and preferences. There is a stronger recommendation that women between the age of 50 and 74 should get screening mammograms every 2 years. Therefore, in this question, the correct answer is to begin routine screening at age 50.

**20. The answer is e.** (AAFP, 2011.) The issues surrounding breast self-examination (BSE) remain controversial. While it is true that most breast cancers are found by women (not by mammography or by clinical breast examination), the American Academy of Family Physicians (AAFP) and the USPSTF have reviewed the evidence and found that a significant number of additional imaging procedures and biopsies were performed for women performing BSE than control participants. The increased number of negative procedures and costs associated with this led the USPSTF and the AAFP to recommend *against* the performance of BSE for women at average risk for breast cancer. Prior to 2009, there was insufficient evidence to recommend for or against teaching or performing BSE.

**21. The answer is a.** (AAFP, 2011.) There is evidence supporting DRE and PSA testing as a prostate cancer screen, but concerns exist regarding false-positive tests and any actual reduction in mortality that is gained from doing the tests. Therefore, AAFP feels the evidence is insufficient to recommend for or against routine prostate cancer screening in men younger than 75 years. In patients who are interested in screening, physicians should discuss the potential benefits and harms with the patients before making a decision to test.

**22. The answer is d.** (AAFP, 2011.) There is a strong recommendation from AAFP for cervical cancer screening at least every 3 years for women who have ever had sex and have a cervix. However, the optimal age at which to begin screening is less clear. Indirect evidence, coupled with the natural history of HPV infection, indicates that screening can safely be delayed until 3 years after the onset of sexual activity or age 21, whichever comes first.

**23. The answer is a.** (AAFP, 2011.) Guidelines for low-risk women indicate that Pap testing should be conducted at least every 3 years in women who have ever had sex and still have a cervix. The guidelines regarding when to discontinue testing are not as clear. The USPSTF found evidence that the yield of screening was low in previously screened women after the age of 65. The American Cancer Society recommends discontinuing screening at age 70, but also notes that a woman who has had three or more documented normal, technically satisfactory Pap tests, and has had no abnormal Pap tests in the last 10 years can safely stop screening.

**24. The answer is a.** (AAFP, 2011.) The AAFP and the USPSTF recommend against routine referral for genetic counseling or routine genetic testing for breast cancer mutations when women do not meet specific high-risk criteria. In non-Ashkenazi Jewish women, high-risk criteria are:

- Two first-degree relatives with breast cancer, one of whom was diagnosed when younger than the age of 50.
- A combination of three or more first- or second-degree relatives with breast cancer regardless of the age at diagnosis.
- A combination of breast and ovarian cancer among first- and second-degree relatives.
- A first-degree relative with bilateral breast cancer.
- A combination of two or more first- or second-degree relatives with ovarian cancer, regardless of age at diagnosis.
- A first- or second-degree relative with both breast and ovarian cancer at any age.
- A male relative with breast cancer.

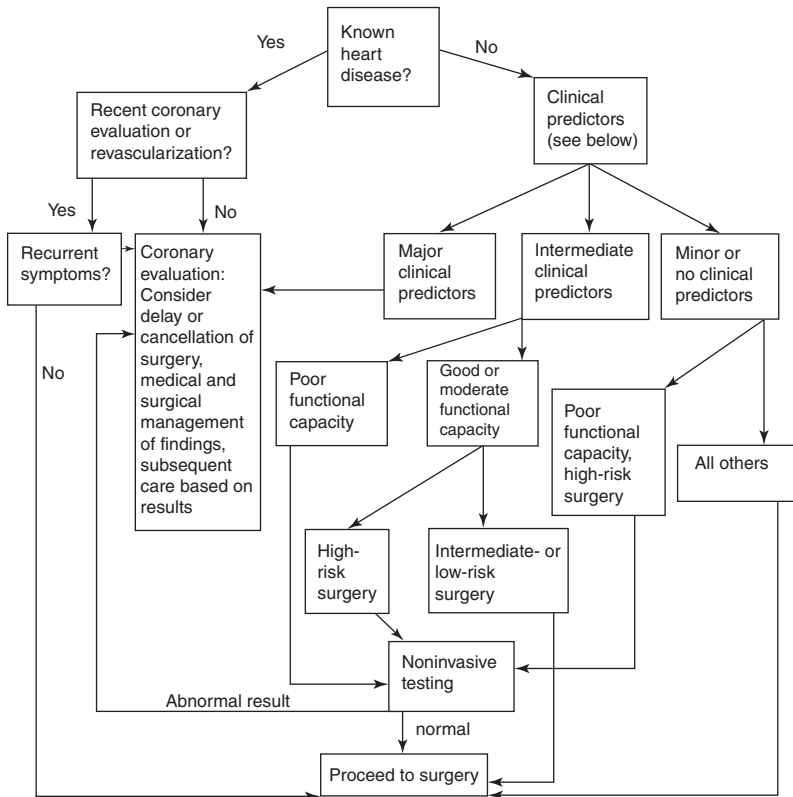
Ashkenazi Jewish women should be offered testing if any first-degree relative (or two second-degree relatives on the same side of the family) are diagnosed with breast or ovarian cancer. Since the patient in this question does not meet the criteria, she should not be offered testing.

**25. The answer is b.** (Mengel, pp 815-824.) The purpose of the preoperative evaluation is to identify and manage risk. The primary care physician is frequently asked to perform this evaluation on surgical patients. All surgeries involve some level of risk, and the evaluation allows the patient to balance the risks involved in surgery against the potential benefits, and allows the physician to minimize risks before, during, and after the procedure. Potential surgical complications involve infectious (wound infections, pneumonia,

urinary tract infections, bacterial endocarditis, and sepsis), cardiac (myocardial infarction, cardiac arrest, pulmonary edema, and complications of congestive heart failure), pulmonary (pneumonia, atelectasis, bronchitis, respiratory failure), thrombosis (peripheral venous thromboembolism, arterial thrombosis) adverse reactions to anesthesia, gastrointestinal (ulcer disease, ileus, hyperemesis), and psychologic (delirium, exacerbation of existing psychiatric disease) complications. Of the complications listed, cardiac events are the events that are most likely to be lethal. Pulmonary complications are most likely to be seen in children and are common in obese patients, but are less likely to be lethal.

**26. The answer is b.** (*Mengel, pp 815-824.*) The preoperative workup should include a risk assessment of the type of surgery being performed. As a general rule, preoperative workups should be more thorough for patients undergoing higher risk surgeries. There are three categories of risk: high risk, moderate risk, and low risk. Low-risk procedures have a risk of cardiac death less than 1% and include breast surgery, cataract surgery, superficial dermatologic surgery, and endoscopy. They generally do not require additional cardiac preoperative testing. Moderate-risk procedures have a risk of cardiac death between 1% and 5% and include carotid endarterectomies, head and neck surgeries, intrathoracic and intraperitoneal surgeries, orthopedic surgeries, and prostate surgeries. High-risk procedures have high anticipated blood loss and include aortic or peripheral vascular surgery. They generally have a risk of cardiac death greater than 5%.

**27. The answer is c.** (*Mengel, pp 815-824.*) The American College of Cardiology and the American Heart Association have printed guidelines for preoperative cardiac evaluation. If a patient has no known heart disease, the evaluator should look at clinical predictors for heart disease. Major clinical predictors would require coronary artery evaluation prior to surgery, and include unstable coronary syndromes, decompensated congestive heart failure (CHF), significant arrhythmias, or severe valvular disease. Intermediate clinical predictors include mild angina, a prior MI, compensated CHF, diabetes, and renal insufficiency. Intermediate clinical predictors require the evaluator to look at the patient's functional capacity to determine level of preoperative cardiac testing. In a patient with poor functional capacity, noninvasive testing is recommended. In the question above, the patient has diabetes (an intermediate clinical predictor) and poor functional capacity. Therefore stress testing is recommended.



Major Clinical Predictors	Intermediate Clinical Predictors	Minor Clinical Predictors
Unstable coronary syndromes Decompensated CHF Significant arrhythmias Severe valvular disease	Mild angina pectoris Prior myocardial infarction Compensated CHF Diabetes mellitus Renal insufficiency	Advanced age Abnormal electrocardiogram Rhythm other than sinus Low functional capacity History of stroke Uncontrolled hypertension

(Reproduced, with permission, from Mengel MB, Schweibert LP (eds). *Family Medicine Ambulatory Care and Prevention*. 5th ed. New York, NY: McGraw-Hill; 2009.)

**28. The answer is e.** (Mengel, pp 815-824.) Recent coronary revascularization is a risk for poor perioperative outcomes. People with clinically important coronary artery disease should defer noncardiac procedures until 6 months after revascularization, when possible. If surgery is necessary within



6 months after revascularization, repeated evaluation of the coronary arteries is necessary prior to surgery. In this case, because the surgery is elective, the patient should defer the surgery until 6 months has elapsed from the time of coronary revascularization. If the patient is asymptomatic at that time, the patient may be able to proceed to surgery without reassessment.

**29. The answer is a.** (*Mengel, pp 815-824.*) Asymptomatic patients who have had a normal stress test in the past 2 years, bypass surgery in the past 5 years, or angioplasty in the past 5 years are unlikely to have developed significant new disease. Current recommendations are that these people may proceed to surgery without further cardiac workup. However, some experts suggest screening ECG should be done in patients older than 55 or with known cardiac disease. Assessment of left ventricular function (such as an echocardiogram) is not recommended, as it will unlikely change the perioperative management of the patient.

**30. The answer is a.** (*Mengel, pp 815-824.*) Pulmonary complications from surgery are most common in surgeries that are anatomically close to the diaphragm. Preexisting respiratory disease increases the change of bad outcomes, and smoking is a risk factor for pulmonary problems after surgery. Despite this, chest x-ray is not indicated as a routine baseline test for patients undergoing surgery. It may be indicated for the evaluation of physical examination abnormalities or reported symptoms of dyspnea or cough, but it is unhelpful in the absence of these symptoms. Pulmonary function testing is useful for demonstrating the status of asthma or chronic obstructive pulmonary disease (COPD) prior to surgery, but would not be an effective routine test in the absence of these diagnoses or symptoms leading one to suspect these diagnoses. Pulse oximetry or arterial blood gasses are rarely useful in the preoperative patient without symptoms.

**31. The answer is a.** (*Bope, pp 158-162.*) More than 50 million Americans travel abroad each year. Of these, almost 50% will become ill while traveling. Most morbidity and mortality related to international travel is caused by common preventable health concerns, not by unusual diseases. Traveler's diarrhea is the most common illness, affecting 30% to 70% of travelers, depending on the location and duration of travel. It is followed by upper respiratory infection (URI), viral syndromes, skin conditions, parasitic infections, malaria, hepatitis, and other more rare infections.

**32. The answer is d.** (*Bope, pp 158-162.*) Heart disease is the most common cause of death while traveling, likely because it is such a common cause of death in general. The second most common cause of death (approximately 25%) is accidents. While traveling people engage in risky behavior that they otherwise might not indulge in. Dangerous recreation activities, increased drinking, driving in foreign countries all contribute to causing accidents. Discussing accident prevention is therefore the key when counseling patients planning to travel abroad.

**33. The answer is a.** (*Bope, pp 158-162.*) The CDC does not recommend antibiotic chemoprophylaxis for traveler's diarrhea because of the development of resistant organisms. Most of the times, the condition is self-limited. The CDC does recommend using common sense regarding food and water, eating nothing unless it is boiled, peeled, or cooked.

**34. The answer is a.** (*Bope, pp 158-162.*) Yellow fever is the only legally required immunization (and then, only for some countries). A single inactivated polio vaccine (IPV) booster is recommended for adult travelers who have had primary polio immunization, but who will be traveling to an area where polio is endemic. Cholera and typhus are generally not required immunizations for travelers. Hepatitis A is the most common vaccine-preventable illness acquired by travelers, but vaccination is not required.

**35. The answer is a.** (*South-Paul, pp 173-181.*) In some patients, COCs cause a small increase in blood pressure. This risk increases with age. Both estrogen and progestin are known to cause blood pressure elevations, so changing formulations of COC or using progestin-only pills may not lead to problem resolution. Once COCs are discontinued, blood pressure usually returns to normal within 3 months.

**36. The answer is e.** (*South-Paul, pp 173-181.*) Side effects of COCs include androgenic effects (hair growth, male pattern baldness, nausea.) and estrogenic effects (nausea, breast tenderness, and fluid retention). Weight gain is thought to be a common side effect, but multiple studies have failed to show it to be a statistically significant side effect. The side effect most frequently cited as the reason for stopping the use of COCs is irregular bleeding. It is common in the first 3 months of use and generally diminishes over time.

**37. The answer is c.** (*South-Paul, pp 173-181.*) The use of COC pills is associated with a threefold risk of venous thromboembolism. COCs have a protective effect against ovarian cancer and endometrial cancer. The risk of hemorrhagic stroke is not increased by the use of COCs, and they have not been shown in studies to impact carbohydrate metabolism in a statistically significant way.

**38. The answer is d.** (*McPhee, pp 743-750.*) It is important to counsel patients appropriately if they miss an oral contraceptive pill. If an active pill is missed at any time, and no intercourse has occurred in the past 5 days, two pills should be taken immediately and a backup method should be used for 7 days. If intercourse occurred in the previous 5 days, emergency contraception should be used immediately and pills should be restarted the following day. A backup method should be used for 5 days. There is no need to change contraceptive method.

**39. The answer is e.** (*South-Paul, pp 173-181.*) Progestin-only pills prevent conception through suppression of ovulation, thickening of cervical mucus, alteration of the endometrium, and inhibition of tubal transport. The effectiveness of this method is dependent on consistency of use. In fact, if a pill is taken even after 3 hours, an alternative form of contraception should be used for 48 hours. There is no hormone-free period with these pills, and they should be taken every day. The pills do not carry an increased risk for thromboembolism, and the World Health Organization has reported this form of contraception to be safe for women with a history of venous thrombosis, pulmonary embolism, diabetes, obesity, or hypertension. Nursing women can use this pill, but there is FDA approval for use in others as well. In general, progestin-only pills protect against ectopic pregnancy by lowering the chance of conception. However, if progestin-only pill users get pregnant, the chance of ectopic pregnancy is 6% to 10% higher than the rate found in women not using contraception. Therefore, users should be aware of the symptoms for ectopic pregnancy.

**40. The answer is d.** (*South-Paul, pp 173-181.*) Oral contraceptive pills containing estrogen and progestin components are contraindicated in smokers older than 35 years, because of an increased risk of thromboembolic events. An intravaginal ring or transdermal patch that releases estrogen and progestin is also contraindicated in smokers older than 35 years for the same reason. Women who use IUDs for contraception are at higher risk for acquiring

a sexually transmitted infection and developing pelvic inflammatory disease (PID) as compared to women who use barrier or other hormonal birth control methods, and patients should be screened carefully. An injectable long-acting progestin would therefore be the best choice in this woman.

**41. The answer is c.** (*South-Paul, pp 173-181.*) Emergency contraception is appropriate when no contraception was used (including cases of sexual assault), or when there is contraceptive failure. They should be used within 72 hours of intercourse, well before implantation (implantation occurs 5-7 days after intercourse). ECPs involve limited hormonal exposure, and therefore have not been shown to increase the risk of venous thromboembolism, stroke, or MI. In fact, there are no medical contraindications to the use of emergency contraception pills. They do not disrupt an already implanted pregnancy and do not cause birth defects. Progestin ECPs prevent 85% of expected pregnancies when used correctly, and combined ECPs prevent 75% of expected pregnancies. They are not 100% effective in pregnancy prevention. There is no need to perform a pregnancy test when prescribing.

**42. The answer is a.** (*South-Paul, pp 533-542.*) The pedigree shown is for an autosomal dominant condition. As the pedigree shows, males and females in the family are equally affected, and parents are transmitting the gene to their offspring (vertical inheritance). If this were an autosomal recessive trait, horizontal inheritance would be more present, with multiple children being affected from unaffected parents. X-linked recessive traits affect more males than females, and X-linked dominant traits affect more females than males.

**43. The answer is c.** (*South-Paul, pp 533-542.*) The pedigree shown is for an X-linked recessive condition. As the pedigree shows, the condition affects more males than females, and inheritance is through the maternal side of the family (diagonal inheritance). Female carriers have a 50% risk for each daughter to be a carrier and a 50% risk for each son to be affected. All daughters of an affected male are carriers, and none of his sons are affected. If this were an autosomal dominant condition, males and females would be equally affected, and parents would transmit the gene to their offspring. If this were an autosomal recessive trait, horizontal inheritance would be present, with multiple children being affected from unaffected parents. If it were X-linked dominant, more females would be affected than males.

**44. The answer is c.** (*South-Paul, pp 533-542.*) In the case of an autosomal recessive trait, if unaffected parents have an affected child, there is a 25% risk that each offspring from those parents will be affected. Both parents must be carriers of the trait, which means that each child born to them has a 25% risk of not carrying the gene, a 50% risk of being a carrier, and a 25% risk of having the disease.

**45. The answer is a.** (*South-Paul, pp 533-542.*) Cytogenetic analysis is a microscopic study of the chromosomes and is used to identify abnormalities in chromosome number, size, or structure. It is commonly ordered when patients are suspected of having a recognizable chromosomal syndrome (trisomy 21) and in newborns with multiple malformations of unknown etiology or with ambiguous genitalia. Direct DNA testing is indicated for patients affected or predisposed to a condition for which the gene change that causes the condition has been identified (cystic fibrosis). Biochemical tests identify or quantify metabolites or enzymes to measure activity, and are commonly used to diagnose and monitor disorders of metabolism. Linkage analyses identify genetic sequences that are physically in close proximity to a disease gene of interest.

**46. The answer is b.** (*Rosner, pp 51-55.*) Sensitivity is thought of as the probability that a symptom is present given that the person has the disease. In the above example, the “symptom” in question is a family history of breast cancer. Of women that have breast cancer, 5% have a family history; therefore the sensitivity of using family history as a predictor of breast cancer is 5%.

**47. The answer is d.** (*Rosner, pp 51-55.*) Specificity can be thought of as the probability that the symptom is *not* present given that a person does not have a disease. In the above example, the “symptom” is smoking. Of people who do not have lung cancer, 30% of them are smokers, indicating that 70% of them are not smokers. Of the people who do not have lung cancer, 70% of them do not smoke.

**48. The answer is c.** (*Rosner, pp 51-55.*) A false-negative is defined as a person who tests negative, but who is actually positive. In the above example, 2% of the positive people test negative. Therefore, the false-negative rate is 2% in this case. Sensitivity is defined as the probability that the test would be positive, given that the person has strep throat. The specificity is the probability that the test would be negative if the person does *not* have

strep. The false-positive rate is defined as the percent of people who test positive, but are actually negative. The positive predictive value is the probability that a person has an illness, given that the test is positive.

**49. The answer is b.** (*Rosner, pp 51-55.*) The incidence of a disease is the probability that a person with no prior disease will develop a new case of the disease over a specific time period. In this case, 1000 people developed diabetes. In the study, only 8000 people began with no prior disease. Therefore, the incidence is 1000/8000 or 12.5%. The prevalence is the probability of having a disease at a specific point in time, and is obtained by dividing the number of people with the disease by the number of people in the study.

**50. The answer is e.** (*Rosner, pp 207-215.*) The *p* value for any hypothesis test is the level at which we would be indifferent between accepting or rejecting the null hypothesis given the sample data at hand. It can also be thought of as the probability of obtaining a test statistic as extreme or more extreme than the actual test statistic obtained, given that the null hypothesis is true. It does not reflect the absolute difference in the data between groups and the *correctness* of the data in the sample.

**51. The answer is b.** (*Rosner, pp 51-55.*) The positive predictive value refers to the probability that a positive test correctly identifies an individual who actually has the disease. Using a  $4 \times 4$  chart:

	Disease Present	Disease Absent	Total
Test positive	A = 300	B = 200	500
Test negative	C = 100	D = 400	500
Total	400	600	1000
Positive predictive value = $A/(A+B)$ , or $300/500 = 60\%$			

**52. The answer is d.** (*Rosner, pp 51-55.*) The negative predictive value is the probability that a negative test correctly identifies an individual who does not have the disease. Using a  $4 \times 4$  chart:

	Disease Present	Disease Absent	Total
Test positive	A = 10	B = 0	10
Test negative	C = 10	D = 80	90
Total	20	80	100
Negative predictive value = $D/(C+D)$ , or $80/90 = 89\%$			

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# Doctor-Patient Issues

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## Questions

### Communication

**53.** You are performing a medical interview with a patient and having some difficulty obtaining accurate information regarding the events that brought him into the office. Which of the following physician communication tactics leads to the collection of the most accurate information?

- a. Controlling the interview with more directive questions
- b. Using medical terms that the physician feels the patient can understand
- c. Redirecting the patient if he/she strays from the relevant points
- d. Involving the patient in his/her treatment plan
- e. Using open-ended questions

**54.** You were involved in a minor motor vehicle accident on the way to work. As a result, you saw your first patient of the morning more than 1 hour after the scheduled appointment time. When you walk in, he appears extremely angry. Which of the following alternatives is the most patient-centered way to approach this situation?

- a. Explain what happened so that he will understand why you are late.
- b. Acknowledge his anger with a statement like, "You seem very angry."
- c. Apologize for the delay and efficiently take care of his problem.
- d. Explore the reasons for his anger if he brings it up.
- e. Help the patient understand that his anger should be directed at his illness, not at you.



**55.** You are having trouble caring for a 58-year-old woman with uncontrolled diabetes. Her measures of glucose control are always significantly higher than you'd like to see, and you feel that she may not be taking her medications as directed. Which of the following is the most effective way to measure her adherence to the prescribed medical regimen?

- a. Ask her if she is taking her medications.
- b. Look for a reduction in her blood glucose measurements in subsequent visits.
- c. Have her bring in her medications so that you may perform pill counts.
- d. Measure serum blood levels of her medications.
- e. Ask her specific questions about her medication names, dosages, and administration times.

**56.** You are seeing a 65-year-old woman who has smoked for 50 years. You want her to quit, and are considering different communication tactics to use in the discussion. Which of the following is likely to be the most powerful motivator?

- a. Point out the positive results that can be expected if she complies with your advice. "By quitting, you'll significantly reduce your chances of developing lung cancer."
- b. Point out the consequences of not following your advice. "If you don't quit, you might develop lung cancer."
- c. Empathize. "I'll bet that quitting is extremely difficult."
- d. Provide data. "Evidence shows that 1 in 20 patients who try can quit smoking cold turkey."
- e. Ask about her experience with the illness that she is at risk for. "Do you know anyone who has ever suffered with emphysema?"

**57.** A 23-year-old man is following up to discuss the results of laboratory tests you did at his complete physical examination 1 week ago. His human immunodeficiency virus (HIV) screen was positive, and you need to tell him this news. Which of the following is the most appropriate approach?

- a. Begin the session by inquiring about his understanding of HIV.
- b. Help him prepare for the information by using a statement like, "I'm afraid I have some bad news for you."
- c. Ensure you schedule enough time to discuss treatment goals and options.
- d. Make sure he brings a support person into the room before you disclose the test results.
- e. Offer hope by saying, "I'm sure there will be a cure for this disease soon."

**58.** Regarding patient education and counseling, which of the following statements is true?

- a. Patients usually understand and remember most information from their physician.
- b. Patients commonly believe that physicians give them too much information.
- c. Patients are more likely to make behavior changes if they are given several options for change from which to choose.
- d. Physician eye contact does not improve patient recall.
- e. Patients feel patronized when physicians repeat information.

### **Cultural Competency and Health Disparities**

**59.** You are treating a 61-year-old Chinese immigrant. You diagnose type 2 diabetes, but the patient is reluctant to make the dietary changes necessary to help treat the condition, as much of her high glycemic index diet is culturally based. Which of the following is the most culturally appropriate approach?

- a. Ask to involve her Americanized children in future communication to help encourage the changes.
- b. Since her culture believes that health is a balance between yin and yang, tell her that the dietary changes you suggest will restore this balance.
- c. Organize an appointment with the patient and a diabetes educator who can better take the time and explain the etiology and dietary regimen necessary for diabetes.
- d. Inquire as to the patient's concept of the etiology of diabetes and any treatments she would like to try.
- e. Use a Chinese interpreter to ensure your message is being heard appropriately.

**60.** You are caring for a patient originally from Mexico and are communicating with the help of a Spanish-speaking interpreter. Which of the following statements is true regarding the effective use of an interpreter?

- a. Ask the interpreter to explain your statements, when necessary.
- b. Arrange seats in a triad, and speak slowly, facing the interpreter.
- c. Act as if the interpreter is not present, speaking to the patient normally.
- d. Use as many nonverbal gestures as possible.
- e. If you get an unexpected response, repeat the same question over again.

**61.** You are interacting with a patient who has emigrated from Russia. The patient is not complying with the treatment plan you outlined for his hyperlipidemia. Which of the following is the most effective way to improve this situation?

- a. Speak with Russian colleagues to better understand the Russian culture.
- b. Refer the patient to a physician from the same cultural background as the patient.
- c. Study the Russian culture as it relates to illness and healing, and offer alternatives for treatment consistent with the cultural norms.
- d. Listen to the patient's perspective, express your treatment plan, and focus on similarities and differences.
- e. Examine the beliefs of Russian culture and use these beliefs to convince the patient to comply with treatment.

**62.** You are working at a medical office whose population includes a large proportion of Native American patients. Which of the following health issues has a higher prevalence in this population than in other American population groups?

- a. Hypertension
- b. Coronary artery disease
- c. Obesity
- d. Asthma
- e. Tuberculosis

**63.** You are working in an office that provides care to a large population of homeless patients. Which is true about medical illnesses in homeless children as compared with other groups of children?

- a. Homeless children are more likely to develop type 2 diabetes.
- b. Homeless children experience a higher number of ear infections.
- c. Homeless children are more likely to have chronic illness.
- d. Homeless children are more likely to have depression.
- e. Homeless children are more likely to have attention-deficit disorders.

**64.** You are working in an office that serves a large uninsured population. Which of the following is true regarding this population as compared to the privately insured population?

- a. This population has fewer chronic health conditions.
- b. This population has a lower mortality rate.
- c. This population has a better general health status.
- d. This population has a better mental health status.
- e. This population has a higher rate of chronic disease among children.

**65.** You are evaluating health disparities in your community and using mortality rates as a measure of overall health. Which of the following population subgroups in the United States has the lowest mortality rate at each age of the lifespan?

- a. African Americans
- b. Hispanic Americans
- c. Native Americans
- d. Asian Americans
- e. Non-Hispanic white

**66.** You are evaluating a Hispanic patient with multiple somatic complaints and suspect a mental health disorder. Which of the following is true regarding mental health disparities in the United States today?

- a. Mental health disorders are diagnosed less frequently in minority populations than in non-Hispanic white patients.
- b. It is uncommon for minority groups to express mental health disorders via somatization.
- c. Minority patients are more likely to be misdiagnosed than nonminority counterparts.
- d. Minorities who maintain cultural practices and resist involvement in the dominant culture have better mental health.
- e. Culture is less of a factor in mental health than in other organic syndromes or illnesses.

### **Ethics and Professionalism**

**67.** You are taking care of a 62-year-old woman with a urinary tract infection. You prescribe trimethoprim-sulfamethoxazole (Bactrim) for her infection, but forget to ask about her allergies. The next day, she returns with significant hives, asking if Bactrim contains “sulfa,” something she is allergic to. Which of the following fundamental principles of medical professionalism has been violated?

- a. The principle of primacy of patient welfare
- b. The principle of patient autonomy
- c. The principle of social justice
- d. The principle of professional competence
- e. The principle of honesty with patients

**68.** You are working with a physician who is treating a patient for hypertension. The patient has a documented allergy to angiotensin-converting enzyme inhibitors, and you note that the physician is prescribing them. You assume that the physician knows best, and do not let the physician know of the potential mistake. What professional responsibility have you violated?

- a. Commitment to honesty with patients
- b. Commitment to professional competence
- c. Commitment to maintaining appropriate patient relationships
- d. Commitment to improving quality of care
- e. Commitment to maintaining trust

**69.** You are working as a student in the emergency room. After a cardiac arrest and a prolonged attempt at resuscitation, a patient dies. The attending physician asks if you would like to gain experience by practicing intubations on the patient who has died. You feel that this relates to one of your professional responsibilities, to maintain clinical competence, and consider the offer. Which fundamental principle of professionalism and ethics would be violated if you do this?

- a. The principle of patient welfare
- b. The principle of patient autonomy
- c. The principle of social justice
- d. The principle of honesty with patients
- e. The principle of maintaining trust

**70.** In the elevator, your senior resident says, "Before I forget, make sure you send Mr Davis home on his usual HIV medications." You know that there are new medications that he could take, that might give him a better antiviral response. There are other health care providers in the elevator. What professional responsibility has your senior resident violated?

- a. Commitment to maintaining trust
- b. Commitment to improving quality of care
- c. Commitment to professional competence
- d. Commitment to scientific knowledge
- e. Commitment to patient confidentiality

**71.** One of your patients is 6 months pregnant, and is found to have a medical condition that, if left untreated, will be life-threatening to both her and the fetus. She believes that God will take care of her and the baby, and she refuses medical intervention offered to her. Which of the following best describes the principle of patient autonomy in this case?

- a. She has no right to refuse the intervention, based on the fact that her decision is lethal to both her and her unborn infant.
- b. She has no right to refuse the intervention, based on the fact that her decision is lethal to her infant.
- c. She has the right to refuse the intervention regardless of the condition.
- d. She has the right to refuse the intervention, only if the father of her baby agrees.
- e. She has the right to refuse the intervention if she is found competent to make the decision.

**72.** You are caring for a 38-year-old man with metastatic cancer. He thoroughly understands his condition, and realizes that he has only a few months to live. He asks that you do not tell his wife about his prognosis, as “she won’t be able to take it.” The patient’s wife sees you in the hallway and says, “tell me the truth . . . how is his condition?” Which of the following responses best reflects an ethically sound course of action?

- a. Tell her the truth about the situation because she has a right to know.
- b. Tell her the truth because you have the legal obligation to do so.
- c. Consult the ethics committee to help you make the decision.
- d. Do not tell the patient’s wife, but inform her that you will not tell her husband about the conversation you’ve just had.
- e. Do not tell the patient’s wife, but make an effort to encourage an open dialogue between her and her husband.

**73.** You are caring for a patient who has suffered with amyotrophic lateral sclerosis (ALS) for several years. During the past month, she has been hospitalized twice with aspiration pneumonia and has required mechanical ventilation. She was admitted to the hospital again 4 days ago with difficulty in breathing and was found to have another pneumonia. One day ago, her blood pressure fell to 60/36 mm/Hg and she began to appear septic. She is not responding to volume or pressers. Her creatinine rose today to 5.2 mg/dL and it is becoming harder to adequately ventilate her. Which of the following statements is most accurate regarding her situation?

- a. The patient's condition is physiologically futile and the physician should recommend withdrawal of all support except those needed for patient comfort.
- b. The patient is terminally ill and the physician should recommend withdrawal of support.
- c. The patient is terminally ill, but the physician cannot withdraw intervention as it would hasten death.
- d. The patient is experiencing an acute decompensation of a chronic condition and aggressive treatment is indicated.
- e. The principle of beneficence requires aggressive treatment in this case.

**74.** You are working in a small town emergency department with an attending physician trained in family medicine when the paramedics bring in a 55-year-old woman after a car accident. She suffered massive head trauma from the accident, and brain tissue is actually extruding from her skull. She had been intubated by the paramedic, and after careful evaluation, your attending physician has judged that no intervention can stop the patient's imminent death. When the attending physician meets her family, they demand that she be transferred to the operating room for neurosurgery. Which of the following is the most ethically sound response?

- a. The physician should continue physiologic support until a health care power of attorney is identified and can make treatment decisions.
- b. The physician should recommend a DNR (do not resuscitate) status, but continue support and discussions with the family.
- c. The physician should continue support until a court-appointed surrogate is identified.
- d. The physician should continue support, consult neurosurgery, and ask for his/her opinion on the case.
- e. The physician should refuse to pursue further treatment.

**75.** A patient with severe Alzheimer disease is admitted to the hospital for pneumonia. The patient is usually cared for at home, and has no living will or health care power of attorney. Code status is not obtained upon admission. During hospitalization, the patient suffers a cardiac arrest. Which of the following is most appropriate?

- a. The patient should be resuscitated.
- b. The patient should have cardiopulmonary resuscitation (CPR), but no intubation.
- c. The patient should have CPR, but no pressors should be given.
- d. The patient should not be resuscitated because care is futile.
- e. The patient should not be resuscitated because he has a poor quality of life.

**76.** While working in the hospital, you get called to help during a code blue. The patient is a 66-year-old Caucasian female with a history of hypertension. The arrest was witnessed by a floor nurse and the initial rhythm was ventricular fibrillation. Which of the following characteristics of this situation make CPR less likely to be successful?

- a. The fact that it was a witnessed arrest
- b. The fact that the initial rhythm was ventricular fibrillation
- c. The patient's comorbid hypertension
- d. The patient's age
- e. The patient's gender

**77.** You are working with a patient with advanced multiple sclerosis (MS). He has just been diagnosed with pneumonia and is being treated for respiratory failure. In the past, he has discussed with his family and his physician that he does not wish to be on permanent mechanical ventilation. Neurology consultation has determined that his respiratory insufficiency is due to a combination of his MS and pneumonia. The physician writes a DNR order, but the family disagrees. Which of the following is most correct in this situation?

- a. The DNR order should stand and be enforced.
- b. The court should determine if the DNR order should stand or not.
- c. The hospital ethics committee should be consulted.
- d. The physician should remove himself from the case.
- e. The DNR order should be reversed, but a "slow code" should be conducted if necessary.



**78.** You are caring for a patient who has just assumed the home care for his father. The father has inoperable lung cancer, and it is expected that he has less than 6 months to live. The father executed a valid “DNR” order while in the hospital during his last visit. The father and your patient want to be sure that in the event of an emergency requiring activation of emergency medical service providers, the emergency medical service (EMS) team does not resuscitate the father. Which of the following is true regarding DNR orders in the home?

- a. EMS providers must resuscitate patients if they are called to respond to an emergency.
- b. The hospital DNR orders automatically transfer to the home setting and nothing needs to be done to ensure they will be followed by EMS providers.
- c. In order for a DNR order to be followed in the home, the attending physician must re-write a DNR order, and the family must produce it when EMS providers enter the home.
- d. The family may simply state that the patient is a DNR and the EMS providers will refrain from resuscitation.
- e. With direction from the family, the EMS providers will perform a “slow code.”

**79.** You are caring for an obese patient who would like for you to prescribe amphetamines to help her lose weight. You feel this is an inappropriate treatment. According to the ethical principle of autonomy, which of the following is correct?

- a. You must respect patient autonomy and should comply with the patient’s treatment request.
- b. The patient must respect your decision not to prescribe amphetamines because of physician autonomy.
- c. The patient must respect your decision because the principle of physician paternalism overrides patient autonomy in this case.
- d. You should explain your preferences for treatment, then honor the patient’s preference.
- e. You should refuse to treat the patient.

**80.** You are caring for a woman who has lung cancer and is discussing treatment options with you. She is choosing radiation therapy over surgery, despite the fact that the 5-year survival rate for radiation is lower than the 5-year survival rate for surgery for her type of cancer. In both cases, the survival rate is lower than 25%. You think surgery is the better option. According to the ethical principle of autonomy, which of the following is correct?

- a. You should comply with the patient's treatment request.
- b. The patient should have surgery because of physician autonomy.
- c. The patient must respect your decision because the principle of physician paternalism overrides patient autonomy in this case.
- d. You should explain your preferences for treatment, then honor the patient's preference.
- e. You should refuse to treat the patient.

**81.** You are evaluating a 62-year-old man who has a new complaint of back pain. He lost his wife to breast cancer 8 years ago and has recently decided to marry his girlfriend. His workup includes lumbar spine x-rays that reveal metastatic lesions. The patient comes back to the office for the results and says, "I hope you don't give me any bad news. I'm leaving for my honeymoon in 2 days and don't want anything to ruin my week in paradise!" Which of the following statements is most accurate?

- a. The principle of patient autonomy dictates that you wait to tell the patient until his return.
- b. The principle of physician autonomy dictates that you tell the patient at this visit.
- c. The principle of beneficence dictates that you wait to tell the patient until his return.
- d. The principle of physician paternalism dictates that you tell the patient at this visit.
- e. The principle of honesty dictates that you tell the patient at this visit.

**82.** You are working with a patient who has been on benzodiazepines for more than 2 years. She was initially prescribed the medication for help with sleep, but you are now concerned that she has become dependent. After a brief discussion, the patient admits that she'd like to be off the medication. You decide to withdraw her from the medication using a trial of placebo sleeping aids. Which of the following statements is most correct regarding the use of placebos in this situation?

- a. Placebo use is never ethical.
- b. Placebo use is not ethical in this case.
- c. Placebo use is ethical in this case because the patient's diagnosis is likely depression, and depression has a high response rate to placebos.
- d. Placebo use is ethical in this case because the alternative to placebo use is unacceptable.
- e. Placebo use is ethical in this case because the patient is demanding treatment.

### **Complementary and Alternative Medicine**

**83.** The practice where you are working cares for a wide variety of patients. Which of the following subgroups is most likely to explore and use complementary and alternative medicine (CAM)?

- a. Children
- b. College students
- c. Men
- d. Women
- e. The elderly

**84.** Traditional therapies have offered limited benefit to a 55-year-old woman who suffers from migraine headaches, and she asks you about alternative therapies. She currently takes 325 mg of enteric-coated aspirin a day, and paroxetine, 20 mg daily. Which of the following has the lowest risk of toxicity or harm?

- a. St. John's wort
- b. Megavitamins
- c. Macrobiotic diet
- d. Ginkgo biloba
- e. Acupuncture

**85.** You are caring for a 38-year-old woman who is depressed. She would like to try an alternative therapy, but is worried about the risks of different modalities. Which of the following therapies is most risky?

- a. Meditation
- b. Guided imagery
- c. St. John's wort
- d. Homeopathy
- e. Acupuncture

**86.** You are caring for a 72-year-old man with hyperlipidemia. He is complaining of difficulty starting his urinary stream and increasing nocturia. Examination and laboratory evaluation reveals a diagnosis of benign prostatic hypertrophy. Which of the following botanical medicines has been shown to improve this situation?

- a. Ginkgo biloba
- b. Saw palmetto
- c. Garlic
- d. Bee pollen
- e. St. John's wort

**87.** You are working with a smoker who has failed several attempts to quit smoking. He decides to try hypnosis in an effort to finally quit. Which major domain of alternative medicine does this best fit under?

- a. Alternative health care systems
- b. Mind-body interventions
- c. Biologically based therapies
- d. Energy therapies
- e. Bioelectromagnetics

## Palliative Care

**88.** After a prolonged fight with colon cancer, your 68-year-old patient decides to forego further attempts at curative treatment and focus on palliative care. He has tried nonsteroidal anti-inflammatory agents and acetaminophen for management of his pain, but this has been ineffective. Which of the following would be the best initial pain-management regimen?

- a. A steroid burst to get the pain under control, then scheduled nonsteroidal anti-inflammatory medications to maintain pain control.
- b. A long-acting narcotic pain patch at the lowest dose that controls the pain.
- c. A short-acting narcotic on a scheduled basis, with the possibility of additional short-acting narcotics as needed for breakthrough pain control.
- d. A long-acting narcotic, with a short-acting narcotic as needed for breakthrough pain.
- e. A patient-controlled analgesia device using opioids.

**89.** Your patient has terminal cancer with a life expectancy of less than 3 months. You are managing her chronic cancer pain with morphine sulfate. She has been stable and on the same dosage of medication for weeks, but is now requiring increasing amounts of opiates to maintain pain control. Which of the following statements is true regarding this situation?

- a. The patient's disease is progressing and you should increase her medication dosage.
- b. The patient's disease is progressing and you should change medications.
- c. The patient is developing tolerance and you should increase her medication.
- d. The patient is developing tolerance and you should maintain the dosage of medication to avoid dependence.
- e. The patient is developing tolerance and you should slowly withdraw medication.

**90.** You are caring for a 68-year-old man with severe end-stage chronic obstructive pulmonary disease but a life expectancy longer than 6 months. One month ago, he developed a rash. The rash consisted of grouped vesicles on erythematous bases in a dermatomal pattern. You effectively treated the rash, but the patient complains of a persistent burning and itching pain in the same area as the rash. The pain is significant and keeps him from sleeping. What is the best approach for long-term pain management in this patient?

- a. Nonsteroidal anti-inflammatory agents
- b. Opiate analgesics
- c. Steroids
- d. Anticonvulsants
- e. Selective serotonin reuptake inhibitors

**91.** You are caring for a 65-year-old man with lung cancer. He was diagnosed 4 months ago, and is not expected to live for more than 2 months. He is experiencing dyspnea. His chest x-ray shows progression of his cancer, and his pulse oximetry shows a room air oxygen saturation of 94%. Which of the following is most likely to relieve his symptoms?

- a. Opioids
- b. Nebulized morphine
- c. Steroids
- d. Benzodiazepines
- e. Albuterol

**92.** You are caring for a 68-year-old man who has had colon cancer for 3 years. Therapies have been unsuccessful, and he has chosen palliative care only. He complains of excessive fatigue, feeling tired after minimal activity, and lacking energy to perform the activities of daily living. He denies depression, and feels he is handling his diagnosis well with the support of his family and friends. His laboratory evaluation is normal, except for mild anemia. Which of the following therapies would be most likely to help his symptoms?

- a. Transfusion
- b. Nutritional supplementation
- c. Selective serotonin reuptake inhibitors
- d. Sedative hypnotics
- e. A Psychostimulant, like methylphenidate

**93.** You are treating a 60-year-old patient with end-stage ovarian cancer. You are concerned that she may be developing depression. Which of the following would be the most reliable symptom of depression in this patient?

- a. Loss of appetite
- b. Fatigue
- c. Insomnia
- d. Sadness
- e. Anhedonia

**94.** You are caring for a 39-year-old woman who is dying of breast cancer. Her family wonders how to recognize the symptoms of impending death. Which of the following is a reliable sign that death is near in this patient?

- a. Delirium
- b. Episodic hyperalertness
- c. Decreased communication
- d. Desire for favorite food
- e. Increased attention to dates and time

**95.** You are making a home visit to a 68-year-old man with terminal cancer. His family says that his breathing seems to be labored. Upon evaluation, you know that this is the “death rattle” that often signals approaching death. Which of the following drugs would be most useful in controlling this symptom?

- a. Atropine
- b. Ketorolac
- c. Lorazepam
- d. Haloperidol
- e. Thorazine

### **Gay, Lesbian, Bisexual, and Transgender Issues**

**96.** A 19-year-old sexually active homosexual male asks you about his risk for hepatitis. He is currently asymptomatic and unsure of his immune status. Which of the following should you recommend?

- a. Vaccination against hepatitis A only
- b. Vaccination against hepatitis B only
- c. Vaccine against hepatitis C only
- d. Vaccinations against both hepatitis A and B
- e. Vaccinations against both hepatitis B and C

**97.** A 26-year-old homosexual man presents with blood on the toilet paper when wiping. Examination of the anal mucosa reveals this condition. Which of the following statements is true regarding this condition?



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- a. This condition is rarely seen in men who are not immunocompromised.
- b. The patient's physician should consider anal cytologic screening with a Papanicolaou (Pap) test.
- c. The patient should be treated with intramuscular penicillin once a week for 3 weeks.
- d. The patient should be treated with valciclovir.
- e. The patient should be treated with one dose of azithromycin.



**98.** A 30-year-old gay male asks you about how his sexuality impacts his cancer risks. Which of the following statements most accurately reflect his risk for cancer?

- a. Homosexual men have an increased rate of oral cancer.
- b. Homosexual men have an increased rate of colon cancer.
- c. Homosexual men have an increased rate of liver cancer.
- d. Homosexual men have an increased rate of testicular cancer.
- e. Homosexual men have an increased rate of anal cancer.

**99.** You are caring for a 42-year-old lesbian woman. She has recently left a 10-year monogamous relationship and is concerned about her risk for vaginal and other infections, once she resumes sexual activity with a new partner. Which of the following is true regarding her concern?

- a. The rate of sexually transmitted infections (STIs) among lesbians is less than the rate in heterosexual women.
- b. The rate of genital warts is higher in lesbians than in heterosexual women.
- c. The rate of bacterial vaginosis is higher in lesbians than in heterosexual women.
- d. The rate of genital herpes is higher in lesbians than in heterosexual women.
- e. Sexually active lesbians have a lower prevalence of HIV than women who have sex exclusively with men.

**100.** You are caring for a 40-year-old lesbian with no family history of breast cancer. She asks you about her risk of having breast cancer. Which of the following is true regarding breast cancer among lesbian women?

- a. Breast cancer rates do not differ between lesbians and heterosexual women.
- b. Breast cancer rates are higher among lesbians because of nonparity.
- c. Breast cancer rates are higher among lesbians because of obesity.
- d. Breast cancer rates are higher among lesbians because of alcohol and tobacco use.
- e. Breast cancer rates are lower among lesbians because they generally use less of oral contraceptives.

**101.** You are caring for a 25-year-old lesbian. She asks you about Pap testing in lesbian women. Which of the following is true about cervical cancer screening in this population?

- a. Lesbians do not need Pap testing.
- b. Lesbians do not need Pap testing, except if they are smokers.
- c. Lesbians need Pap testing, but less frequently than heterosexual women.
- d. Lesbians should be screened for cervical cancer at the same intervals that are recommended for heterosexual women.
- e. Lesbians should be screened for cervical cancer more frequently than heterosexual women.

**102.** You are taking the complete history of a patient new to your office. The patient is dressed as a woman, but is biologically male. Further history reveals that the patient takes female hormones and is considering sexual reassignment surgery. What term most specifically describes this person?

- a. Cross dresser
- b. Bigender
- c. Transvestite
- d. Transsexual
- e. Transgender

### Counseling for Behavior Change

**103.** You are caring for an unmarried 28-year-old woman. She is overweight, and you are conducting a brief intervention to help her develop an action plan for weight loss. Which of the following will be most effective?

- a. Let the patient know what has worked for you in your efforts to maintain a healthy weight.
- b. Discuss the impact of successful weight loss on her overall appearance.
- c. Work with her to agree to a weight loss goal, for example, losing 1 lb per week.
- d. Work with her to agree to an exercise goal, for example, walking 1 mile daily.
- e. Encourage her to set a start date for beginning her new dietary and exercise regimen.

**104.** You are addressing smoking cessation with a patient and are determining the patient's readiness to change his behaviors. During the discussion, you find that the patient is aware of the health impact of his smoking on him and his family. He understands the economic impact, and feels that if he were to quit, it would benefit him financially. He feels very addicted to cigarettes and says that he'd like to quit sometime in the future. According to the Stages of Change Model, at what stage of change is this patient?

- a. Precontemplation
- b. Contemplation
- c. Preparation
- d. Action
- e. Maintenance

**105.** You are caring for a 41-year-old male patient with high risk for heart disease. His dietary habits are increasing his risks, and you would like to work with him to develop healthier eating habits. Assuming he is in the "precontemplation" stage, what should your action be to move him toward changing his behavior?

- a. Educate him about the impact of diet on heart disease risk.
- b. Outline the costs of his behaviors and contrast those to the benefits of healthy eating.
- c. Show him the gap between his health goals and his current behavior.
- d. Brainstorm options for healthier eating with the patient.
- e. Assist him in developing a concrete action plan for behavior change.

**106.** You are working with a patient who recently retired from his job after 41 years. He is currently 67 years old and has hypertension and high cholesterol. His wife thinks he drinks too much, and during your visit, he admits to 3 alcoholic beverages per day. You have screened him for alcoholism, and he does not meet the criteria. You would like to negotiate a safe drinking amount for this patient. Which of the following best represents a safe level of alcohol intake for this patient?

- a. Seven drinks per week, no more than 3 per occasion.
- b. Fourteen drinks per week, no more than 4 per occasion.
- c. No more than 1 drink per day.
- d. No more than 2 beers or glasses of wine per day *or* no more than 1 alcoholic beverage per day.
- e. There is no safe drinking amount for this patient.

# Doctor-Patient Issues

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## Answers

**53. The answer is e.** (*South-Paul, pp 641-646.*) Studies have shown that physicians often interrupt patients before they completely express their concerns. Physicians who do this and control the interview with directive questions often miss valuable and important information. These behaviors result in an incomplete clinical picture and collection of inaccurate information. Information is also lost when physicians use medical jargon. Patients frequently believe they understand the jargon, but are often incorrect. Involving the patient in his/her treatment plan is important, but that does not lead to the collection of accurate information. The use of closed-ended questions limits the patients' ability to fully describe their concerns. Communication is enhanced and accuracy is improved when physicians use open-ended questions, allow patients to fully answer questions before interrupting, and avoid technical or medical jargon.

**54. The answer is b.** (*South-Paul, pp 641-646.*) Dealing with the angry patient is challenging. A natural response to anger is defensiveness, but this can escalate the situation. The best approach is for the physician to first recognize the anger, acknowledge it, try to understand it, and respond to it. If a physician senses that a patient is angry, but the patient has not volunteered this information, it is important to explore the anger. If the patient seems very upset, it may make him/her angrier if the provider minimizes the situation by saying something like, "you seem a little upset." If a patient is extremely angry, choose words that seem to match the intensity of his/her feelings. In some instances anger is displaced, and may be truly directed at the disease process or illness. In that case, the appropriate response is empathy. However, in this setting, the anger is likely a response to the wait time that the patient has endured and is less likely to be displaced. Placing the blame on your previous personal situation should be avoided—your patient likely will be empathetic to your situation, but it will not help meet his/her needs. It is important not to blame lateness on prior patients, even if that is the reason for the delay. It may make the current patient feel less important than the previous one. Apologizing for the delay may be appropriate,

but the most patient-centered response would be to acknowledge what the patient appears to be feeling.

**55. The answer is c.** (*South-Paul, pp 641-646.*) Adherence is a complex issue for physicians and patients. In patients who do not adhere to their doctors' advice, the reasons usually relate to the patients' beliefs, goals, and expectations. Asking the patient if he takes his medications is unlikely to yield accurate information, as the answer to this question is often an automatic "yes." However, patients will give accurate information about adherence about 80% of the time if the physician asks well-framed questions. By asking specific questions about names, dosages, and times, the physician will be more likely to elicit information about compliance. Another tactic may be to give permission for admitting noncompliance by saying something like, "Some of my patients find it difficult to remember to take their medications. Does this ever happen to you?"

Performing pill counts, measuring serum blood levels, and evaluating outcomes have not been shown in the medical literature to be effective measures of compliance.

**56. The answer is a.** (*South-Paul, pp 641-646.*) When motivating a patient to comply with a treatment regimen, it is important to explore their reasons for noncompliance. Once that is accomplished, the provider and patient should come to agreement on how to proceed. In this process, the physician can correct misconceptions, refer the patient to a trusted source of information, explore options, or suggest alternatives. Fear is not an effective motivator in most cases. Therefore, pointing out consequences of not following advice, or bringing up images of suffering patients is not effective. While empathy is appropriate to enhance the doctor-patient relationship, it is not always an effective motivational tool. Providing data often does not help, as patients do not see themselves as numbers and often do not understand how to apply the statistics to their situation. Patients are more likely to comply if you point out the positive results that can be expected by following your advice.

**57. The answer is b.** (*South-Paul, pp 641-646.*) When giving a patient bad news, attention should be given to the setting. Ensure the room is private and free of interruptions and that you have enough time for the visit. Some patients may want someone else present, but others may not. When suspicious that a test result may be positive, the physician may consider asking the patient in advance if they would like a support person present

when reviewing the results. By beginning the session with an inquiry of the patient's knowledge, you are effectively giving the diagnosis without allowing the patient to prepare. Using a "warning" statement allows the patient to mentally prepare for the upcoming information. The discussion of treatment goals and options will likely overwhelm the patient, and should be deferred to a subsequent session. The physician should be hopeful, but realistic. Ensuring a cure for the disease may be detrimental.

**58. The answer is c.** (*South-Paul, pp 641-646.*) Patients commonly believe their physician does not give them enough information. However, studies show that patients often misunderstand or do not remember the information that physicians give them. Techniques physicians can employ to improve recall include simplification, repetition, giving specific information, and checking for understanding. Patients generally appreciate this, and generally do not feel this is patronizing. Nonverbal techniques including decreased interpersonal distance, more eye contact, and leaning toward the patient have been shown to improve recall. Patients are more likely to make behavior change if presented with several choices. However, too many options may be overwhelming. Statements like, "Your options are . . ." and "Which option do you think will be best for you?" are often helpful.

**59. The answer is d.** (*South-Paul, pp 647-654.*) Health, illness, and treatment are strongly influenced by cultural contexts. Although those trained in the United States have illness and treatment concepts based on biomedicine, many in other cultures define illness in other ways with different disease classifications and responses to them. Asking a patient of another culture what she thinks may be causing the problem and about treatment options demonstrates respect for the patient and her culture. Having Americanized relatives try to convince her would not respect her cultural beliefs. Pretending to understand her cultural and health beliefs may cause resentment. Continuing to focus on the biomedical model does not respect the cultural aspects of disease. Using an interpreter, while often necessary, does not address the underlying cultural issue.

**60. The answer is a.** (*South-Paul, pp 647-654.*) Recommendations for working with a medically trained interpreter include:

- Greet the patient in his/her own language if possible.
- Introduce yourself to everyone present.

- Arrange the seats in a triad, and address the patient.
- Speak clearly, in a normal voice volume.
- Use common terms and simple language structure.
- Express one idea at a time and pause for the interpreter.
- Expect the interpreter to use first person singular, verbatim translation.
- Consider multiple meanings to nonverbal gestures.
- Ask the same questions in different ways if you get inconsistent or unconnected responses.
- Ask the interpreter to explain, but do not place the interpreter in the middle of conflicts.

**61. The answer is d.** (*South-Paul, pp 647-654.*) It is important to remember that physicians tend to focus on the biological process of disease, while patients focus on the illness experience, regardless of culture. Physicians should be familiar with the medically related cultural norms of the patients residing in their community, but also need to recognize that the norms are not stereotypical statements about all people from that culture. Individuals within groups may have different practices. As such, the most appropriate approach would be to Listen to your patient's perspective, Explain your plan, Acknowledge similarities and differences, Recommend an action, and Negotiate a plan (LEARN).

**62. The answer is c.** (*South-Paul, pp 655-663.*) In the 2000 census, Native Americans made up only 0.7% of the population, but the prevalence of diabetes, obesity, alcoholism, and suicide is substantially higher in this population than others.

**63. The answer is b.** (*South-Paul, pp 655-663.*) Homelessness results in poor health status and high service use among children. Homeless children experience a higher number of acute illness symptoms, including fever, ear infections, diarrhea, and asthma exacerbations. Unfortunately, the emergency department tends to be a primary source of care for this group, and visits are higher among this population.

**64. The answer is a.** (*South-Paul, pp 655-663.*) Interestingly, the uninsured have lower rates of chronic health conditions as compared with the insured population. The reason for this may reflect the fact that uninsured people often work in physically demanding jobs with fewer benefits. Those with chronic debilitating disease are unable to continue working and may

go on public assistance. The uninsured have a higher mortality rate, poorer general health status, and poorer mental health status. Uninsured children have similar rates of chronic disease and limitations of activity when compared with insured children.

**65. The answer is d.** (*South-Paul, pp 655-663.*) At each age of the lifespan, African Americans, Hispanics, and Native Americans have a higher mortality rate than white people. Only Asians, in aggregate, average lower mortality rates than white people.

**66. The answer is c.** (*South-Paul, pp 655-663.*) Mental health disparities have existed in minority cultures for decades. The practice of psychiatry is heavily influenced by culture, perceptions of illness, and appropriate treatment. Mental health disorders are diagnosed more commonly in non-white people than in their white counterparts. This may be partly due to poor validation of the *Diagnostic and Statistical Manual of Mental Disorder (Fourth Edition) (DSM [IV])* and the unfamiliarity of many psychiatrists with culturally defined syndromes and folk healing systems. Screening is difficult because there is a lack of language-specific validated instruments, and interpreters may miss nuances in translation. This leads to misdiagnosis. Many cultures express distress as somatic complaints. It is well known that feeling accepted in society, increased acculturation, and a good transition to the new culture decreases mental health issues, while increased resistance to new culture lowers mental health.

**67. The answer is a.** (*ABIM, 2011.*) There are three fundamental principles of professionalism. The first is the principle of primacy of patient welfare. This is based on a dedication to serving the interest of the patient, and deals with doing no harm. This is the principle violated in the question. The principle of patient autonomy involves empowering patients to make informed decisions regarding their treatment. The principle of social justice involves working to eliminate discrimination in health care. Professional competence is a professional responsibility, not a fundamental principle, and deals with commitment to lifelong learning and maintaining medical knowledge. Patient honesty is also a responsibility, and deals with informed consent and acknowledging medical errors.

**68. The answer is d.** (*ABIM, 2011.*) Improving quality of care is a professional responsibility that all physicians must embrace. The commitment



involves maintaining clinical competence, but also working collaboratively with other professionals to reduce medical error. That is the professional responsibility violated in this example. Honesty deals with informed consent and acknowledging errors with patients. Maintaining appropriate relationships deals with not exploiting patient relationships. Commitment to maintaining trust involves managing conflict of interests.

**69. The answer is b.** (ABIM, 2011.) Fundamental principles of professionalism (patient welfare, patient autonomy, and social justice) are central to the job of being a physician. Despite the fact that the patient would not be harmed if the student practiced the procedure, the patient was not given the chance to make an informed decision about participating in this activity. Therefore, autonomy has been violated.

**70. The answer is e.** (ABIM, 2011.) When other people can hear, it is important to ensure patient confidentiality. Appropriate safeguards should be applied to the disclosure of any patient information, including sensitive information regarding diagnosis and treatment. Despite the fact that the patient may do better on the new regimen, it is not appropriate to discuss it in the presence of others not associated with the patient's case.

**71. The answer is e.** (ABIM, 2011.) The principle of patient autonomy requires physicians to be honest with their patients about treatment options, as well as the options if treatment is refused. Patient's decisions about their care are paramount, as long as those decisions are made competently. However, in difficult cases such as this one, it is recommended that legal counsel be obtained.

**72. The answer is e.** (ABIM, 2011.) Patient confidentiality demands that you maintain safeguards related to the disclosure of patient information. This is dictated by the patient, even if the wife is the other person in the communication triad.

**73. The answer is a.** (Jonsen, pp 17-24) From an ethical perspective, decisions about indicated treatment are influenced by whether a patient is viewed as "dying," "terminally ill," or incurable. Many treatments become non-indicated when a patient is about to die. In this question, the patient's condition indicates that her organ systems are failing. Medical intervention at this point would offer no therapeutic benefit, and it is likely that her death is imminent. Physiologic futility is justification for the physician to

recommend withdrawal of interventions. The term “terminally ill” is more difficult to define. In clinical medicine, this term should be applied only to patients whom clinicians expect will die from a lethal progressive disease, despite treatment, in a relatively short period of time measured in months at the most. The patient described in the question is not terminally ill, she is dying. Her previous hospital admissions likely represented an acute decompensation in condition as a result of her chronic condition, but given her current situation, it would not be expected that she could return to any level of health after this episode. And, in the clinical condition described, the principle of beneficence (helping to remedy the condition) is superseded by quality of life and appropriate use of resources.

**74. The answer is e.** (*Jonsen, pp 24-30.*) In this case, it is impossible that the patient will be able to continue life regardless of any intervention, and the physician is ethically justified in refusing to pursue treatment. However, the physician should try to work with the family to resolve the care dispute. Most institutions have a policy for conflict resolution that prohibits unilateral decision making except in the cases of physiologic futility (as described in this case). Most policies allow physicians to withdraw from cases in which they judge continued treatment to be futile, if patients can be transferred to other institutions willing to accept them. The way physicians discuss this with patients’ families can improve relationships and outcomes, and it’s recommended that physicians avoid the word “futile” and ask the family to “consider redirecting clinical efforts toward palliation and comfort” (or similar terms). In this case, continuing support through a long process of identifying a court-appointed surrogate, finding a health care power of attorney, or working through the family dynamics would not be justified. A neurosurgical consultant would not add information to this case.

**75. The answer is a.** (*Jonsen, pp 30-39.*) All hospitalized patients who suffer unexpected cardiopulmonary arrest should be resuscitated unless there is conclusive evidence that the patient is dead, no physiologic benefit can be expected despite maximal therapy, or the patient has a valid DNR order. In the United States, the rate of DNR orders varies from 3% to 30% among hospitalized patients. Around two-thirds of hospital deaths and only 40% of deaths in the ICU are preceded by a DNR order.

**76. The answer is d.** (*Jonsen, pp 30-39.*) Studies show that the success of CPR varies with different types of patients. Survival after CPR is more likely when patients have respiratory rather than cardiac arrest, when their arrest

is witnessed, when the initial rhythm is ventricular tachycardia or fibrillation, when patients have few or no comorbid conditions, when there is an iatrogenic cause for the arrest, or for patients with a short duration of arrest. Large studies have shown that survival rates are lower for men, older patients, and black patients. Patients and families often overestimate the success of resuscitation. This may be because of the stark contrast between survival in real-life versus TV hospital dramas. In real life, around 10% to 17% of hospitalized patients that arrest survive to discharge, while a study of TV hospital dramas showed that 67% of televised “patients” survived.

**77. The answer is c.** (*Jonsen, pp 30-39.*) In this case, the patient would be unlikely to survive more than a short time without mechanical ventilation. Based on the patient’s prior wishes, a DNR order should be recommended, not written, by the physician. If the family agrees, the DNR order can be written. If the family disagrees, an ethics review should be conducted because the family’s decision to ventilate is in conflict with the patient’s own previously expressed wishes. The court should be the last resort in this case, and the physician should not have to remove himself from the case unless he feels the patient is being unduly harmed. A “slow code” refers to running a code, but performing activities in a nonurgent manner to lessen the chances of successful resuscitation. It is never ethically justified.

**78. The answer is c.** (*Jonsen, pp 30-39.*) Often, patients for whom DNR orders have been written in the hospital may be discharged with intent for the DNR order to be in effect in their homes. However, family members sometimes summon emergency services if a patient incurs a problem. Traditionally, EMS providers were not responsible for determining whether or not a patient had an advance directive, and resuscitated all patients for whom they were called. However, in recent years, a “portable DNR” order has become standard. The portable DNR is a physician order, written in standard form, that the patient can take with them to the home. Sometimes, these can be indicated on bracelets, necklaces, or wallet cards. When the patient produces this order, emergency service providers are authorized to refrain from CPR. Almost every state has laws mandating that out-of-hospital DNRs are followed. A “slow code” refers to a practice in which medical personnel perform CPR without energy or enthusiasm. This is unethical and should not be performed.

**79. The answer is e.** (*Jonsen, pp 47-51.*) Respect for autonomy is one aspect of a larger principle, respect for persons, which is a fundamental principle of all morality. Every individual has the right to choose his or her own actions. However, respect for patient autonomy does not imply that patients have the right to demand inappropriate treatment, or that physicians must comply with any and all patient requests if it conflicts with a physician's best judgment. Therefore, in this case where the physician feels the patient's request is unreasonable, the physician can refuse to comply with the patient wishes. The concept of "physician paternalism" is not a principle of ethics, it is a distortion of a therapeutic relationship in which a physician feels that his/her judgment alone should determine the course of treatment. As a principle, autonomy is a two-way street—and physician autonomy should also be respected by patients. However, physician autonomy does not take the place of patient autonomy when making clinical decisions. Respect for autonomy does imply that a physician should, after explaining his or her own preferences, honor the patient's preferences among medically reasonable options, but this would not apply if a treatment option is not felt to be medically reasonable.

**80. The answer is d.** (*Jonsen, pp 47-51.*) In this case, the patient has a poor survival and is choosing between what would be considered medically reasonable options. It is appropriate for the physician to explain his/her preferences, but allow the patient to choose in the end. Choice a assumes that the patient knows all available options and is making an informed decision that may or may not be accurate, and therefore answer d is a better choice. The concept of "physician paternalism" is not a principle of ethics, it is a distortion of a therapeutic relationship in which a physician feels that his/her judgment alone should determine the course of treatment. As a principle, autonomy is a two-way street—and physician autonomy should also be respected by patients. However, physician autonomy does not take the place of patient autonomy when making clinical decisions. Refusal to treat the patient in this case is not appropriate, as the patient is making a decision among medically reasonable options.

**81. The answer is e.** (*Jonsen, pp 51-65.*) Contemporary bioethics affirms the patient's right to the truth. Studies show that most patients with serious diagnoses want to know the results regardless of their initial fears. In this case, despite the patient's comments, truthful disclosure has implications for the patient's plans. This situation has less to do with autonomy, paternalism,

or beneficence than it does with truthful communication. Untruths undermine the physician-patient relationship and the trust that others have in the medical profession.

**82. The answer is b.** (*Jonsen, pp 51-65.*) Placebo treatment is a clinical intervention intended by a physician to benefit the patient not because of a physiologic effect, but because of the psychologic or psychosocial effect. Placebo use raises the problem of truth-telling, and there is broad consensus among ethicists that the clinical use of placebos is unethical. Exceptions to this include a condition that is known to have a high response rate to placebo, a condition for which the alternative to using a placebo is the use of a harmful drug or other treatment, or if the patient insists on a prescription and wants to be treated or cured. In this question, the patient is not demanding a medication for treatment, there is not a known high response rate, and the alternative (confronting the patient and determining a more open course of action) is not harmful to the patient. Since this case is not a justified exception, answer b is best.

**83. The answer is d.** (*South-Paul, pp 549-557.*) Rates of CAM use are significant in all populations, but studies have shown that women are consistently more likely to explore and use CAM. Women are frequently central to the health care decisions made in a family, and when surveyed, 49% of women have used CAM. Other surveys have shown that 50% of patients with cancer or HIV will use unconventional medical practices at some point during their illness. CAM is gaining public interest and becoming increasingly popular in the United States.

**84. The answer is c.** (*South-Paul, pp 549-557.*) When discussing CAM, physicians should help patients make informed choices. Many practices, including acupuncture, biofeedback, homeopathy, and meditation are low risk if used by competent practitioners. Many herbal substances can interact with traditional medications and cause harm. St. John's wort can cause serotonin syndrome when used with a selective serotonin reuptake inhibitor like paroxetine. Megavitamins carry with them the risk of toxicity. Special diets, including the macrobiotic diet (high-complex-carbohydrate, low-fat, vegetarian diet) may have harmful effects, including undesirable changes in weight and bowel habits. Ginkgo biloba has antiplatelet effects and may cause bleeding when taken with aspirin.

**85. The answer is c.** (*South-Paul, pp 549-557.*) The amount of research on CAM systems and practices is small compared with research on conventional medicine. Few studies exist on the safety and efficacy of most CAM treatments. Many practices such as meditation, guided imagery, homeopathy, and acupuncture are considered low risk, but require practitioner competence to avoid inappropriate use. Botanical preparations can be toxic and produce herb-drug interactions and are therefore more risky.

**86. The answer is b.** (*South-Paul, pp 549-557.*) In botanical medicine, there is research showing the benefit of herbal remedies in some areas. Ginkgo biloba has been shown in some small studies to help dementia. Garlic has been shown to help in the prevention of heart disease. St. John's wort has been shown to be effective in the treatment of depression, though recent studies in the United States have not supported the initial studies. Saw palmetto does show efficacy in the treatment of benign prostatic hypertrophy. Bee pollen is used to increase energy, but studies do not clearly indicate benefit.

**87. The answer is b.** (*South-Paul, pp 549-557.*) The National Center for Complementary and Alternative Medicine, National Institutes of Health, has grouped CAM modalities into several domains. Mind-body interventions include things like meditation, hypnosis, guided imagery, prayer, and mental healing. Alternative health care systems include Ayurvedic medicine, chiropractic medicine, and traditional Chinese medicine. Biologically based therapies include herbal therapies, special diets, and specific biologic therapies (like shark cartilage or bee pollen). Energy therapies include Qigong and Reiki therapy, and bioelectromagnetics include magnet therapy.

**88. The answer is c.** (*South-Paul, pp 558-565.*) The World Health Organization published guidelines for pain control in 1996. These guidelines have been well-studied and lead to effective pain control in most situations. In general, failing nonopioid pain control should lead to the use of opioid analgesics. Steroids have limited, if any, use in chronic cancer pain. Fentanyl patches, even at the lowest dose, may be excessive in opiate naïve patients, and should never be used alone. Most start with immediate-release morphine sulfate to determine a baseline need. This can be converted to sustained release quickly, and titrated based on pain control.

Patient-controlled analgesia devices have an important role, but require intravenous or subcutaneous administration, and should not be used first-line, unless pain is extreme.

**89. The answer is a.** (*South-Paul, pp 558-565.*) Managing chronic cancer pain with opiates is often concerning for physicians. Many fear addiction and are concerned about causing harm. It is important to remember that there is no specific limit to opioid dose, and medications should be titrated to pain control or development of significant side effects. Fear of addiction should not hinder the use of opiates in this situation. Addiction is a rare occurrence in patients with terminal illness, especially in patients without a history of drug abuse. In patients on previously steady doses, dose escalation generally means the disease is progressing rather than tolerance. Tolerance, like addiction, is rarely seen in these patients.

**90. The answer is d.** (*South-Paul, pp 674-689.*) Neuropathic pain, like that described from shingles in this question, frequently requires opioids in the short term, but often requires the use of other medications for long-term relief. Commonly used medications include tricyclic antidepressants, anticonvulsants (valproic acid, carbamazepine, and gabapentin are the most common), and antihistamines. The data on using selective serotonin reuptake inhibitors are unconvincing.

**91. The answer is a.** (*South-Paul, pp 674-689.*) Dyspnea, like pain, is a subjective sensation. It can be present in the absence of hypoxia. Opioids can relieve breathlessness associated with advanced cancer by an unclear mechanism. Nebulized morphine is not more effective than placebo. Steroids and albuterol are useful for dyspnea caused by bronchospasm, but that is unlikely in this case. Anxiolytics, like benzodiazepines and buspirone, may help if anxiety is a significant component, but that is usually expressed by patients as a feeling of “choking” or “suffocation.”

**92. The answer is e.** (*South-Paul, pp 674-689.*) Excessive fatigue seen with end-stage cancer may result from direct tumor effects, paraneoplastic neuropathy, or tumor involvement of the central nervous system (CNS). It is often an effect of therapy. When no specific cause is apparent, as in this question, therapy is difficult. Transfusion is unlikely to be beneficial given his hemoglobin level. There is no evidence that the patient has a nutritional deficit, and supplementation may not be helpful. Although fatigue is

frequently seen as a symptom of depression and may respond to selective serotonin reuptake inhibitor therapy, in this case it is unlikely. Sleeping pills would not help unless insomnia is the cause. A short course of steroids or a psychostimulant can increase energy and improve mood.

**93. The answer is e.** (*South-Paul, pp 674-689.*) It is commonly assumed that all patients with cancer are, and should be, depressed. Physicians often do not recognize depression because they feel they would be depressed in the same situation. While neurovegetative symptoms are a compelling indication of depression in the physically healthy patient, they may be less reliable for the diagnosis of depression in patients with advanced cancer. Loss of appetite may be due to therapy, fatigue may be due to insomnia from untreated pain. Sadness may be appropriate, given the diagnosis. Anhedonia is a useful, if not the most useful symptom to monitor. Also helpful are hopelessness, guilt, and a wish to die.

**94. The answer is c.** (*South-Paul, pp 674-689.*) As death approaches, there are several signs that portend its arrival. Delirium may be a result of medication, and by itself is not a good indicator. Other indicators are:

- Remaining bedbound
- Confusion
- Cool and mottled extremities
- The “death rattle”
- Decreased hearing/vision
- Difficulty swallowing
- Decreased conversation
- Decreased oral intake
- Disorientation to time
- Drowsiness progressing to somnolence for extended periods
- Dry mouth
- Hallucinations
- Increased distance from all but a few intimate others
- Decreased attention span
- Profound weakness

**95. The answer is a.** (*South-Paul, pp 674-689.*) Atropine can decrease secretions and help the “death rattle.” Other medications that may be useful include scopolamine, glycopyrrolate, mycosamine, or morphine. Ketorolac



may help pain, lorazepam may help restlessness, haloperidol and thiorazine may help agitation and hallucinations, both of which are also symptoms of impending death.

**96. The answer is d.** (*South-Paul, pp 664-673.*) The unique health needs of gay men may often be overlooked by physicians, especially if not alert to appropriate and sympathetic sexual history-taking. Since hepatitis A is transmitted orally/fecally, and many gay men participate in oral/anal sexual activity, vaccination against hepatitis A is appropriate. Since hepatitis B is transmitted through blood and body fluids, and sometimes by anal intercourse, hepatitis B vaccination is indicated. There is no vaccination against hepatitis C.

**97. The answer is b.** (*South-Paul, pp 664-673.*) The picture above represents infection with human papillomavirus (HPV). The prevalence of this infection is high, and in one study, 65.9% of HIV-negative gay men were found to be positive for anal HPV. Penicillin treats syphilis, valciclovir treats herpes, and azithromycin treats *Chlamydia* and gonorrhea (2 g of azithromycin are needed to treat gonorrhea and *Chlamydia*). Men infected with HPV have been shown to have anal dysplasia, and cytologic screening should be considered for gay men positive for HPV.

**98. The answer is e.** (*South-Paul, pp 664-673.*) The increase in anal cancer in homosexual men is due to the increase in anal HPV infection seen in the gay male population. This is even seen in men without HIV. The other cancers listed do not seem to have an increased incidence in gay men.

**99. The answer is c.** (*South-Paul, pp 664-673.*) Generally, lesbians are felt to be at less risk for STIs than heterosexual women. However, most studies indicate comparable rates of STIs between lesbians and heterosexual women. Interestingly, the type of STI is different. Genital warts and genital herpes are more common in heterosexuals, with bacterial vaginosis being more common in lesbians. There is a mistaken belief that lesbians are not at risk for acquiring HIV. However, it has been shown that sexually active lesbians have a higher prevalence of HIV than women who have sex exclusively with men.

**100. The answer is a.** (*South-Paul, pp 664-673.*) Survey data from almost 12,000 women found no difference in breast cancer rates between lesbians

and heterosexual women. Intuitively, one would think cancer rates would be higher because of nulliparity and higher rates of obesity. However, well-designed prospective studies have not been done to establish that as a fact.

**101. The answer is d.** (*South-Paul, pp 664-673.*) Cervical cancer may be less prevalent in women who have never had heterosexual vaginal intercourse; however, even in women reporting that they have never had sex with a man, up to 20% were found to have HPV DNA. Also, many physicians assume self-reported lesbians to have never had sex with a man, when some studies have reported that up to 79% of lesbians have reported having sex with a male in the past. Therefore, physicians should follow Pap smear screening guidelines in place for all women regardless of the woman's reported sexuality.

**102. The answer is d.** (*South-Paul, pp 664-673.*) Transgender is an umbrella term describing a group of people who cross culturally defined gender categories. Cross dressers wear the clothes of the other gender, but may not completely identify with that gender. Bigender individuals identify with both genders. Transvestites dress as another gender, but have not considered surgery. Transexuals wish to change their sex, and have considered or undertaken surgery.

**103. The answer is d.** (*Mengel, pp 760-766.*) The components of an effective brief intervention for lifestyle change should have the following components:

- It should be patient-focused (framed around the patient's needs and interests).
- It should be health-connected (review the projected impact of the intervention on the patient's physical or emotional health).
- It should be behavior-oriented (focused on what the patient can "do" differently).
- It should be realistic.
- It should be controllable (framed in terms of what the patient can reasonably control, for example, exercise daily rather than a specific amount of weight loss).
- It should be measurable.
- It should be practical.

Answer a is not patient focused. Answer b is not health-connected, it is appearance-connected. Answer c is not as controllable as answer d. Answer e is incorrect, as once an intervention is agreed upon, the caregiver should encourage the patient to begin to make changes immediately.

**104. The answer is b.** (Mengel, pp 760-766.) The Stages of Change Model can be applied to virtually any change in lifestyle or behavior. It outlines the current stage of change, what it represents for the patient, and the provider's task. The stages are outlined below:

Stage of Change	Description of Patient
Precontemplation	No intention to change, may be unaware of the problem
Contemplation	Aware of the problem, but unwilling to make a change; may feel stuck, or say he/she will do it in the future
Preparation	Planning to make a change, usually within 1 month
Action	Involved in implementing or making a change
Maintenance	Has sustained change for some time, usually around 6 months
Addressing relapse or relapse prevention	Patient behavior starts to slip, falls back to old behaviors

In this question, the patient best fits in the contemplation stage.

**105. The answer is a.** (Mengel, pp 760-766.) All of the actions listed in the answers would be appropriate at some stage of change, but in the pre-contemplation stage, education is the provider action that will best move the patient toward the next step in making a change. The following table outlines the recommended provider actions at each stage of change.

Stage of Change	Provider Task
Precontemplation	Education about the health area
Contemplation	Cost-benefit analysis; develop discrepancy between patient goals and current behavior
Preparation	Brainstorm options; assist in developing a concrete action plan
Action	Encourage tracking/monitoring actions; validate patient and provide feedback; discuss and elicit social support
Maintenance	Check progress; troubleshoot slips/concerns of the patient; reinforce successes and build patient confidence
Addressing relapse or relapse prevention	Judge choices, not the patient; focus on past success; identify new supports that reinforce healthy behavior

**106. The answer is c.** (*Mengel, pp 760-766.*) Managing alcohol use is challenging. If a person is alcoholic or has a history of substance abuse, there is no safe drinking amount. However, if patients do not have this history, it is important to know how much alcohol use is considered “too much.” General guidelines for nonpregnant women are no more than 7 drinks per week, and no more than 3 per any one occasion. For men, the guidelines are no more than 14 per week and no more than 4 per any one occasion. For patients older than age 65, it is recommended that they ingest no more than 1 drink per day. There is not a difference between the recommended amounts of beer, wine, or alcohol—1 beer is equivalent to 1 glass of wine or 1 alcoholic beverage.

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# Acute Complaints

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## Questions

**107.** You are evaluating a 41-year-old man in your office who reports abdominal pain. He says the pain began suddenly and is located in the right lower quadrant. He describes the pain as “gnawing” and it seems to get worse after eating. He has vomited twice since the pain began. Which historical feature would lead you toward an emergent evaluation?

- a. The pain’s location in the right lower quadrant
- b. The fact that the pain began suddenly
- c. The description of the pain
- d. The fact that it is worse after eating
- e. The fact that it is associated with emesis

**108.** A 42-year-old woman presents to your office complaining of the recent onset of abdominal pain. She describes pain that starts in the mid-epigastric region, radiating to the back. It is associated with nausea and vomiting. What is the most likely diagnosis?

- a. Acute appendicitis
- b. Pancreatitis
- c. Gallbladder disease
- d. Esophageal spasm
- e. Gastroesophageal reflux disease (GERD)

**109.** An 80-year-old man presents with mild, crampy, bilateral lower quadrant pain, decreased appetite, and low-grade fever for about 48 hours. Which of the following is the most likely diagnosis?

- a. Small-bowel obstruction
- b. Appendicitis
- c. Constipation
- d. Irritable-bowel syndrome (IBS)
- e. Pancreatitis

**110.** While performing an abdominal examination on a 42-year-old woman in your office, she suddenly stops inspiratory effort during deep palpation of the right upper quadrant. Of which of the following problems is this most suggestive?

- a. Hepatitis
- b. Gallstones
- c. Cholecystitis
- d. Pancreatitis
- e. Right-sided renal calculi

**111.** A 56-year-old is complaining of gnawing abdominal pain in the center of her upper abdomen associated with a sensation of hunger. She has a long history of alcohol abuse, and notes darker stool over the last 3 weeks. Which of the following is the most likely cause of her illness?

- a. Alcoholism
- b. Nonsteroidal anti-inflammatory drug (NSAID) abuse
- c. *Helicobacter pylori* infection
- d. Gallstones
- e. Gastroparesis

**112.** A 26-year-old man complains of heartburn. He also complains of regurgitation, belching, and occasional dry cough. His symptoms are worse when he is lying down. He denies melena, weight loss, or dysphagia. What is the appropriate next step, if you suspect GERD in this patient?

- a. Treat with H<sub>2</sub>-receptor antagonists, a proton pump inhibitor, or a prokinetic agent and evaluate the response.
- b. Obtain a barium swallow.
- c. Obtain a computed tomographic (CT) scan of the abdomen with oral and intravenous (IV) contrast.
- d. Obtain an ultrasound of the abdomen.
- e. Perform an esophagogastroduodenoscopy (EGD).

**113.** You are seeing a 75-year-old patient with complaints of heartburn, regurgitation, and belching. You suspect GERD. Which symptom, if present, would necessitate a referral for an upper endoscopy?

- a. Pain radiating to the back
- b. Dysphagia
- c. Chronic use of NSAIDs for coexisting arthritis
- d. Bloating
- e. Nausea

**114.** A 44-year-old woman is admitted to the hospital for acute right upper quadrant pain consistent with biliary colic. Her symptoms have been present for 4 hours, and she also has fever and a positive Murphy sign. She has a history of asymptomatic gallstones, identified incidentally several years ago. Her laboratory evaluation is as follows:

White blood cell (WBC):	17.5 K/ $\mu$ L (H) with a left shift
Aspartate aminotransferase (AST):	88 U/L (H)
Alanine aminotransferase (ALT):	110 U/L (H)
Alkaline phosphatase:	330 U/L (H)
Bilirubin (total):	3.2 mg/dL (H)

What would the next test of choice be?

- Ultrasound of the abdomen
- CT scan of the abdomen
- Magnetic resonance imaging (MRI) of the abdomen
- Endoscopic retrograde cholangiopancreatography (ERCP)
- Cholescintigraphy

**115.** You are seeing a patient who reports the abrupt onset of deep epigastric pain with radiation to the back associated with nausea, vomiting, sweating, and weakness. On examination, his abdomen is distended and tender in the epigastric area. Which of the following is the most common cause of this condition?

- Gallstones
- Alcohol abuse
- Iatrogenic cause
- Idiopathic cause
- Hyperlipidemia

**116.** You are seeing a 53-year-old man who was hospitalized for pancreatitis. His admission laboratory studies include a WBC count of 18,000/mm<sup>3</sup>, glucose of 153 mg/dL, lactate dehydrogenase (LDH) of 254 IU/L, and AST of 165 U/L. According to Ranson criteria, which of these factors suggest a poor prognosis in this patient?

- Age
- WBC count
- Glucose
- LDH
- AST



**117.** You are evaluating a patient new to your practice who is complaining of abdominal pain. The pain has been present on and off for more than 2 years, and has been present more often than not for the preceding 6 months. She reports that her pain is related to defecation and is associated with diarrhea. Which of the following is true regarding diagnostic testing for her condition?

- a. A normal complete blood count (CBC) is necessary for diagnosis.
- b. A normal erythrocyte sedimentation rate (ESR) is necessary for diagnosis.
- c. A colonoscopy is necessary for diagnosis.
- d. Normal stool cultures are necessary for diagnosis.
- e. No tests are necessary to diagnose this condition.

**118.** You are seeing a 46-year-old man who reports 3 months of discomfort centered around his upper abdomen. It is associated with heartburn, frequent belching, bloating, and occasional nausea. What is the most likely result that will be found after workup for these symptoms?

- a. Peptic ulcer disease.
- b. GERD.
- c. Gastric cancer.
- d. Gastroparesis.
- e. No cause is likely to be identified.

**119.** You are caring for a 26-year-old generally healthy woman. She is sexually active and currently in a monogamous relationship. You recently completed her annual examination. Her Pap smear reports “atypical squamous cells of undetermined significance.” Human papillomavirus (HPV) testing was negative. Which of the following is the most appropriate next step?

- a. Repeat the Pap smear immediately.
- b. Treat the patient with metronidazole and repeat the Pap smear when the course of antibiotics is finished.
- c. Repeat the Pap smear in 4 to 6 months.
- d. Repeat the Pap smear in 1 year.
- e. Perform colposcopy.

**120.** You are caring for a 24-year-old generally healthy woman. She is sexually active and currently in a monogamous relationship, using oral contraceptives. You recently completed her annual examination. Her Pap smear reports “atypical squamous cells of undetermined significance.” HPV testing was positive. Which of the following is the most appropriate next step?

- Repeat the Pap smear immediately.
- Repeat the Pap smear in 4 to 6 months.
- Repeat the Pap smear in 1 year.
- Perform colposcopy.
- Treat the patient with imiquimod (Aldara) and repeat the Pap smear after the treatment is complete.

**121.** You are caring for a 33-year-old woman without medical concerns. She is married and monogamous, and on oral contraceptives. Her Pap test 8 months ago reported “atypical squamous cells of undetermined significance.” You repeated the Pap test 4 months later, and it was normal. You repeated it last week, and the results once again reported “atypical squamous cells of undetermined significance.” HPV testing is unavailable. Which of the following is the most appropriate next step?

- Repeat the Pap test immediately.
- Repeat the Pap test in 4 to 6 months.
- Repeat the Pap test in 1 year.
- Perform colposcopy.
- Treat the patient with fluconazole (Diflucan) and repeat the Pap test after the treatment is complete.

**122.** You are caring for a 28-year-old healthy unmarried woman. She is sexually active and has had more than one partner in her past. She had a Pap test 1 month ago that reported “atypical squamous cells of undetermined significance.” HPV testing was not done, and you decide to perform colposcopy. The colposcopy did not reveal cervical intraepithelial neoplasia (CIN). Which of the following is the most appropriate next step?

- Repeat the Pap test in 4 to 6 months.
- Repeat the colposcopy in 4 to 6 months.
- Repeat the Pap test in 1 year.
- Repeat the colposcopy in 1 year.
- Treat the patient with fluconazole (Diflucan) and repeat the Pap test after the treatment is complete.

**123.** You are caring for a 58-year-old postmenopausal woman who is not on estrogen replacement therapy. You perform her annual Pap test, and the results are reported as “atypical cells of undetermined significance.” HPV testing was not performed. Which of the following is the most appropriate next step?

- a. Repeat the Pap test immediately.
- b. Repeat the Pap test in 1 year.
- c. Perform colposcopy.
- d. Treat with fluconazole (Diflucan) and repeat the Pap test after the treatment is complete.
- e. Treat with a 4-week course of vaginal estrogen cream and repeat Pap testing.

**124.** You are caring for a 28-year-old generally healthy woman. She is currently not sexually active, but has had multiple partners in the past. You recently completed her annual examination. Her Pap smear reports “atypical squamous cells of undetermined significance, favor low-grade squamous intraepithelial lesion.” Which of the following is the most appropriate next step?

- a. Repeat the Pap smear immediately.
- b. Repeat the Pap smear in 4 to 6 months.
- c. Repeat the Pap smear in 1 year.
- d. Perform colposcopy.
- e. Perform endometrial biopsy.

**125.** You are caring for a 34-year-old generally healthy woman. She is sexually active and currently in a monogamous relationship with her husband, using oral contraceptives. You recently completed her annual examination. Her Pap smear reports “atypical glandular cells,” but does not specify if those cells are endocervical or endometrial in origin. She has not had any abnormal vaginal bleeding. Which of the following is the most appropriate next step?

- a. Repeat the Pap smear immediately.
- b. Repeat the Pap smear in 4 to 6 months.
- c. Repeat the Pap smear in 1 year.
- d. Perform colposcopy.
- e. Perform endometrial biopsy.

**126.** You are caring for a 46-year-old generally healthy woman. She is sexually active with her husband only. You recently completed her annual examination. Her Pap smear reports “atypical glandular cells” and are reported to be of endometrial origin. She does not report any abnormal vaginal bleeding. Which of the following is the most appropriate next step?

- a. Repeat the Pap smear immediately.
- b. Repeat the Pap smear in 4 to 6 months.
- c. Repeat the Pap smear in 1 year.
- d. Perform colposcopy.
- e. Perform endometrial biopsy.

**127.** A laboratory analysis of one of your patients reveals a microcytic anemia. The red cell distribution width (RDW) is elevated. Which of the following is the most likely diagnosis?

- a. Iron deficiency
- b. Sideroblastic anemia
- c. Thalassemia
- d. Aplastic anemia
- e. Chronic renal insufficiency

**128.** A 60-year-old man is being evaluated for fatigue, weakness, and exercise intolerance. Laboratory assessment reveals:

Hemoglobin:	9.1 mg/dL (L)
Serum iron:	46 $\mu$ g/dL (L)
Ferritin:	9 ng/mL (L)
Total iron binding capacity (TIBC):	626 $\mu$ g/dL (H)
Mean corpuscular volume (MCV):	76 fL (L)

What is the most common cause of this condition?

- a. Blood loss
- b. Poor nutrition
- c. Inadequate absorption of iron
- d. Chronic disease
- e. Folic acid deficiency

**129.** You are performing a presurgical clearance evaluation on a 44-year-old otherwise healthy African-American male who is undergoing a laparoscopic cholecystectomy. His CBC is shown below:

Hemoglobin:	10.6 g/dL (L)
Mean corpuscular volume (MCV):	54 fL (L)
Red blood cell (RBC) count:	6.3 M/ $\mu$ L (H)
Red cell distribution width (RDW):	14.1 (NL)

What is the most appropriate step prior to surgery?

- a. Oral iron replacement for 4 weeks, then recheck before surgery
- b. Parenteral iron replacement for 4 weeks, then recheck before surgery
- c. Transfusion
- d. Hemoglobin electrophoresis
- e. Erythropoietin

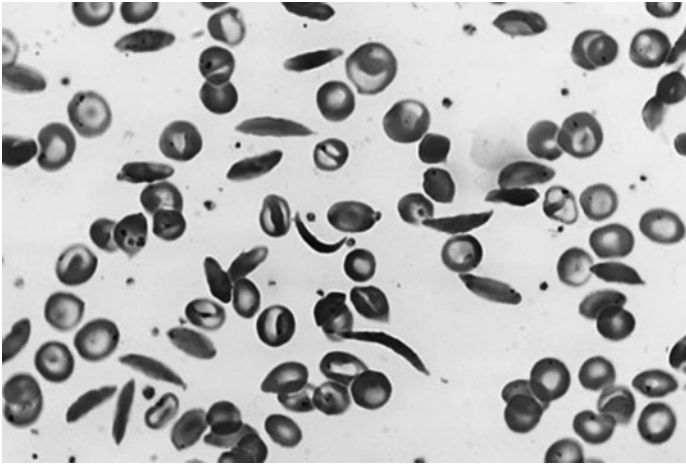
**130.** You are evaluating a 26-year-old woman with fatigue. She also complains of light-headedness and paresthesias in her hands and feet. On examination, her vital signs are normal, but you note pallor and glossitis. Laboratory evaluation reveals a hemoglobin of 9.8 g/dL (L) and an MCV of 102 fL (H). Which of the following would be most likely to treat her condition?

- a. Diet rich in green leafy vegetables
- b. Diet rich in iron
- c. Vitamin B<sub>12</sub> supplementation
- d. Folic acid supplementation
- e. Iron supplementation

**131.** A 68-year-old man complains of fatigue. He has a history of hypertension, well-controlled with hydrochlorothiazide. He has recently lost 30 lb on a high-protein, low-carbohydrate diet. He drinks 2 to 3 beers daily, and smokes 10 cigarettes daily. Laboratory evaluation reveals a macrocytic anemia and vitamin B<sub>12</sub> deficiency. Which of the following is the most likely cause?

- a. Side effects of hydrochlorothiazide
- b. High-protein diet
- c. Low-carbohydrate diet
- d. Alcohol intake
- e. Inadequate vitamin B<sub>12</sub> absorption

**132.** A 3-year-old African-American boy is brought in by his parents with inconsolable crying. He reports extreme pain in his hands and upper extremities. Laboratory evaluation reveals a hemoglobin of 8.2 mg/dL. His peripheral blood smear is shown as follows:



(Reproduced, with permission, from Lichtman MA, Shafer MS, Felgar RE, Wang N. Lichtman's Atlas of Hematology. Access Medicine. New York, NY: McGraw-Hill. [accessmedicine.com](http://accessmedicine.com).)

Which of the following measures would be most likely to reduce these events in the future?

- Chronic use of analgesics
- Adequate hydration
- Immunization against streptococcal pneumonia
- Monthly transfusions
- Daily penicillin prophylaxis until the age of 5 years

**133.** You are seeing a 25-year-old male patient with a rash. It began as pink spots on his extremities, but the lesions have begun to coalesce and become purple in color. He recently returned from a hiking trip in the western mountains. Which of the following is the most likely cause?

- Lyme disease
- Rocky Mountain spotted fever
- Tularemia
- Brown recluse spider bite
- Black widow spider bite

**134.** You are caring for a person who presents with severe symptoms. He started with fatigue, myalgias, arthralgias, headache, and low-grade fever several weeks ago. He also noted a “rash” on his upper back near the right scapula that looked “like a bull’s eye.” That rash has since resolved. Currently, he complains of musculoskeletal pain and attacks of joint pain and swelling for the past week, and today he reports pleuritic chest pain. On examination, he has lymphadenopathy, tenderness in his joints, and right axillary adenopathy. You also notice a friction rub. What is the best treatment for this condition?

- a. Doxycycline for 14 to 21 days
- b. Amoxicillin for 14 to 21 days
- c. Tetracycline for 2 to 3 days after the patient becomes afebrile
- d. Streptomycin intramuscularly for 1 week
- e. Ceftriaxone intravenously for 2 to 3 weeks

**135.** You are seeing a patient who is complaining of an itching scalp. There are erythematous papules on her scalp, and you note small black bulbs at the bases of several hair follicles. Which of the following is the preferred treatment option for this condition?

- a. Extermination of the home
- b. Permethrin 1%
- c. Permethrin 5%
- d. Lindane 1%
- e. Oral ivermectin (Stromectol)

**136.** A 16-year-old camp counselor sees you to evaluate a severely pruritic rash. You note pruritic erythematous papules in between his fingers, on his wrists, and around his waist. For which of the following is this distribution characteristic?

- a. Flea bites
- b. Bedbugs
- c. Body lice
- d. Scabies
- e. Chigger bites

**137.** You are seeing a 21-year-old patient with pruritic, erythematous papules in clusters on his ankles and legs. He noticed the rash the day after he stayed in a hotel on his way back from a Spring Break vacation in Florida. Based on this history and description, which is the most likely culprit?

- a. Flea bites
- b. Bedbugs
- c. Spider bites
- d. Scabies
- e. Lice

**138.** While you are working in the emergency room, a 17-year-old patient presents with a cat bite. He was helping a neighbor get his cat out of a tree 3 hours ago, and was bitten on the hand. On examination, you note erythema with some purulent discharge around a fairly deep wound with a jagged laceration. You irrigate the wound thoroughly and do not see tendon involvement. What is the best option in this case?

- a. Hospitalization.
- b. Treat with amoxicillin/clavulanic acid as an outpatient for 5 days.
- c. Treat with amoxicillin/clavulanic acid as an outpatient for 10 days.
- d. Treat with amoxicillin/clavulanic acid and perform primary closure of the wound.
- e. Treat with amoxicillin/clavulanic acid along with clindamycin, and perform primary closure of the wound.

**139.** A 20-year-old man presents to you 30 minutes after being stung by a bee on his right thigh. He was stung by a bee twice last year. The first sting caused a 3-cm × 3-cm area of erythema, induration, and pain around the sting site. The second sting caused a similar 5-cm × 7-cm area. When you examine him, he has an expanding 2-cm × 2-cm area of erythema, induration, and pain around the sting site on his thigh. He reports pruritis, fatigue, and some nausea, but denies dyspnea. Which of the following is true?

- a. This is a typical local reaction, and should spontaneously resolve within hours.
- b. This is a large local reaction, and the patient has minimal risk for the development of anaphylaxis upon subsequent exposure.
- c. This is a large local reaction, and the patient is at significant risk for the development of anaphylaxis upon subsequent exposure.
- d. This is considered a toxic systemic reaction, and increases his risk for anaphylaxis if he is exposed in the future.
- e. This is considered a mild anaphylactic reaction.



**140.** A 15-year-old adolescent boy comes to your office complaining of bilateral breast enlargement. He is otherwise healthy and on no medications. On examination, there is mildly tender palpable breast tissue bilaterally. The rest of his physical examination, including his testicular examination, is normal. Which of the following is true?

- a. No further workup is necessary.
- b. Serum liver studies will help to elucidate the cause.
- c. Thyroid function assessment will help to elucidate the cause.
- d. Serum estradiol, testosterone, and leutinizing hormone levels are needed to elucidate the cause.
- e. His serum chorionic gonadotropin level is likely to be elevated.

**141.** A 22-year-old woman is seeing her physician with complaints of breast pain. It is associated with her menstrual cycle and is described as a bilateral “heaviness” that radiates to the axillae and arms. Examination reveals groups of small breast nodules in the upper outer quadrants of each breast. They are freely mobile and slightly tender. Which of the following statements is most accurate?

- a. The patient has bilateral fibroadenomas, and reassurance is all that is necessary.
- b. The patient has bilateral fibroadenomas, and a mammogram is necessary for further evaluation.
- c. The patient has bilateral fibrocystic changes, and reassurance is all that is necessary.
- d. The patient has bilateral fibrocystic changes, and a mammogram is necessary for further evaluation.
- e. The patient has bilateral mastitis and antibiotic therapy is needed.

**142.** A 35-year-old woman presents to you concerned about a breast mass. Examination reveals no skin changes, diffusely nodular breasts bilaterally with a more dominant, firm, and nontender fixed nodule on the left side. The nodule is approximately 7 mm in size, in the upper outer quadrant of the left breast. Her mammogram is negative. Which of the following statements is true?

- a. The patient should be reassured and resume routine care.
- b. The mass should be closely followed with repeat mammogram in 3 to 6 months.
- c. The patient should undergo testing for breast cancer genetic mutations, and base further workup on the results.
- d. The patient should be referred for an ultrasound and possible biopsy.
- e. If clear amber fluid is aspirated from the mass, it is likely benign, and no further workup is necessary.

**143.** A 28-year-old woman comes to see you for a tender and erythematous area on her breast. She is nursing her 6-week-old son. You diagnose mastitis. Which of the following is true regarding this condition?

- a. Restricting caffeine and methylxanthine may be efficacious.
- b. Evening primrose oil has been shown to help with symptoms.
- c. Applying ice several times a day will help relieve symptoms.
- d. The patient should discontinue nursing.
- e. Antibiotic therapy is indicated.

**144.** You are seeing a 36-year-old woman with a complaint of nipple discharge. Which of the following characteristics of the discharge is most suspicious for breast cancer?

- a. Spontaneous discharge
- b. Green discharge
- c. Bilateral discharge
- d. Discharge associated with menses
- e. Bloody discharge

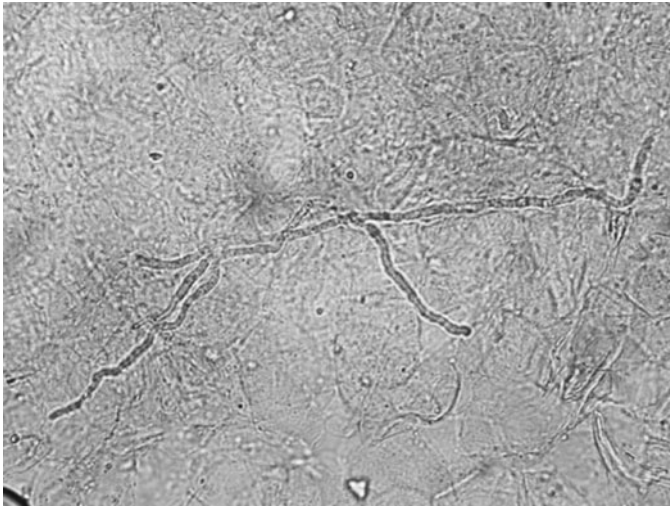
**145.** On screening physical examination of a 36-year-old woman, you find a single left breast mass. It is approximately 1 cm in size, firm, and smooth. You perform a mammogram which is characterized as BI-RADS 2. What does this most likely indicate?

- a. The physician should continue routine screening at the usual intervals.
- b. The physician should perform additional tests (spot compression mammogram, ultrasound) to evaluate the mass as soon as possible.
- c. The physician should follow the mass clinically and perform diagnostic mammogram of the left breast in 6 months.
- d. Tissue diagnosis is needed.
- e. The mass is almost certainly cancerous.

**146.** You are evaluating a 21-year-old woman with an erythematous, tender, and edematous hand. She reports that while playing with her cat 3 days ago, he bit her and punctured the skin. The area around the bite is inflamed, and there is a purulent discharge from the puncture site. Which of the following is the most likely infecting organism?

- a. *Clostridium perfringens*
- b. *Staphylococcus aureus*
- c. *Streptococcus pyogenes*
- d. *Pasteurella multocida*
- e. *Haemophilus influenzae*

**147.** You are seeing a 14-year-old high school wrestler for a skin condition. About a week ago, he noted a patch of erythematous skin on his right thigh. The patch has enlarged since he first noted it, and the central part of the lesion seems to be clearing. He reports that it is mildly pruritic. You scrape the lesion and evaluate the shavings under the microscope using potassium hydroxide. The slide is shown below. Which of the following is the most likely diagnosis?



*(Reproduced, with permission, from Usatine RP, Smith MA, Chumley H, Mayeaux EJ Jr, Tysinger J. The Color Atlas of Family Medicine. New York, NY: McGraw-Hill; 2009: 542.)*

- a. Tinea corporis
- b. Tinea cruris
- c. Pityriasis rosea
- d. Nummular eczema
- e. Impetigo

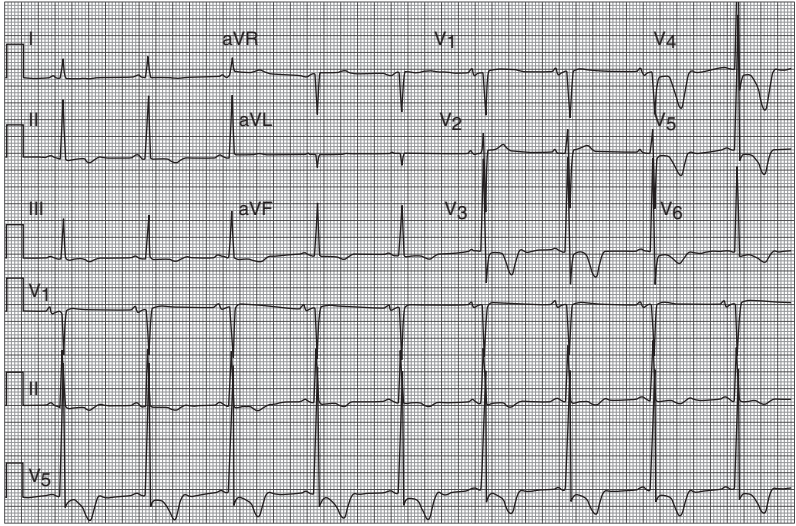
**148.** You are evaluating a 40-year-old male patient in the office who is complaining of chest pain. His father had a myocardial infarction at age 42, and the patient is quite concerned. Which characteristic, if included in the history, decreases the likelihood that his chest pain is cardiac in origin?

- a. The pain is worse with inspiration.
- b. The pain radiates to his right arm.
- c. The pain radiates to his left arm.
- d. The pain is associated with nausea.
- e. The pain is associated with sweatiness.

**149.** You are evaluating a 61-year-old man in the office who is complaining of chest pain. Given his history and risk factors, you are concerned about myocardial ischemia, and order an ECG. Which of the following ECG features, if present, would most markedly increase the likelihood of an acute myocardial infarction?

- a. Any ST-segment elevation greater than or equal to 1 mm
- b. Any ST-segment depression
- c. Any Q wave
- d. Any conduction defect
- e. New conduction defect

**150.** A 43-year-old woman with a history of well-controlled hypertension and diabetes presents to your office complaining of intermittent chest pain for the last 3 months. The last episode was 1 week ago, after climbing four flights of stairs at work. The pain was relieved with rest. An ECG in your office is shown below. She is currently asymptomatic. Which of the following is the most appropriate next step?



(Reproduced, with permission, from Ferry D. *Basic Electrocardiography in Ten Days*. New York, NY: McGraw-Hill; 2001: 35.)

- Reassure the patient and have her return if symptoms continue.
- Reassure the patient, but increase her medication to ensure tight control of her blood pressure and glucose levels.
- Admit the patient to the hospital for serial enzymes.
- Obtain the patient's treadmill stress ECG.
- Obtain the patient's treadmill stress echocardiogram.

**151.** You are evaluating a 75-year-old woman with diabetes and hyperlipidemia who is complaining of chest pain. She reports having occasional chest pain with exertion for years, but yesterday she reported chest pain while walking up steps, then she passed out. On examination, she is afebrile with mildly elevated blood pressure. Cardiac auscultation demonstrates a harsh, rasping crescendo-decrescendo systolic murmur heard best at the second intercostal space at the right upper sternal border. Her carotid pulse is small and rises slowly. Which of the following is the most likely diagnosis?

- a. Pulmonary embolism (PE)
- b. Aortic dissection
- c. Left ventricular hypertrophy (LVH)
- d. Aortic stenosis
- e. Mitral valve prolapse

**152.** You are caring for a 38-year-old male patient who reports episodic chest pain. He reports that the pain feels like “tightness,” is located right behind his sternum, lasts less than 3 minutes, and is relieved with rest. He takes no medications, has no family history of coronary disease, and has never smoked. His ECG in the office is normal. Which of the following tests should be done to determine whether or not his chest pain is due to ischemia?

- a. Exercise ECG
- b. Resting echocardiogram
- c. Stress echocardiography
- d. Radionuclide angiography
- e. Electron beam CT

**153.** You are caring for a 41-year-old man who is complaining of difficulty with defecation. He reports a recent onset of having fewer bowel movements per week that include difficult passage of stool. He denies hematochezia, melena, or weight loss. He has no family history of colon cancer or inflammatory bowel disease. His physical examination and fecal occult blood test in the office are negative. What initial laboratory testing is indicated in the workup of his condition?

- a. No blood tests are needed.
- b. Thyroid-stimulating hormone (TSH) only.
- c. TSH and electrolytes only.
- d. TSH, electrolytes, and ionized calcium only.
- e. TSH, electrolytes, ionized calcium, and complete blood count.

**154.** You are seeing a 28-year-old woman who is complaining of constipation. She reports that her symptoms have been present since she can remember, and no dietary changes have seemed to benefit her. She has never tried pharmacologic therapy in the past. Which of the following would be the best first-line therapy for her?

- a. Psyllium (Metamucil)
- b. Magnesium hydroxide (Milk of Magnesia)
- c. Bisacodyl (Dulcolax)
- d. Saline enemas
- e. Lubiprostone (Amitiza)

**155.** A 33-year-old healthy nonsmoking man presents to you for evaluation of his chronic cough. He says the cough has been present for about 8 weeks. Initially, he went to an urgent care where he received antitussives and a bronchodilator. Those did not help, and he returned 1 week later and was given a course of azithromycin. His cough has continued to persist. His symptoms are worse when he lies down for sleep, and are associated with a sore throat. He has also noticed that when he drinks caffeine or alcohol, the cough seems to worsen. Which of the following is the most likely diagnosis?

- a. GERD
- b. Asthma
- c. Side effect from a medication
- d. Chronic bronchitis
- e. Pertussis

**156.** You are treating a 52-year-old woman with a 40-pack-year history of smoking. She reports a productive cough that has been present for the last 3 to 4 months, beginning in the fall. She remembers having the same symptoms last year in the fall, and attributed it to a “cold that she just couldn’t kick.” She does not have fevers, reports mild dyspnea when walking up stairs, and denies hemoptysis. Which of the following is the most likely diagnosis?

- a. Irritation of airways from cigarette smoke
- b. Chronic bronchitis
- c. Postnasal drainage due to seasonal allergies
- d. Lung cancer
- e. Asthma

**157.** Four weeks ago, you treated a 22-year-old woman for acute bronchitis. Although she feels much better, the cough has persisted. She has used bronchodilators, antihistamines, and antitussives. Which of the following is the best course of treatment at this time?

- a. A 10-day course of amoxicillin
- b. A 5-day course of azithromycin
- c. A steroid nasal spray
- d. An NSAID
- e. An oral steroid taper

**158.** You are seeing an 18-year-old man who has had a cough for 2 weeks. It started like a typical “cold,” but has persisted. Over the last 3 days, the cough has come in “spasms” and he barely has time to catch his breath during the coughing episodes. Nasopharyngeal swab confirms the diagnosis of pertussis. Which of the following treatments is recommended?

- a. A 10-day course of amoxicillin
- b. A 10-day course of amoxicillin/clavulanate
- c. A 7-day course of erythromycin
- d. A 5-day course of azithromycin
- e. A supportive therapy without antibiotics, but in isolation

**159.** You are seeing a 6-month-old boy whose mother reports that he has had diarrhea for almost 2 weeks. He has had four to six bowel movements a day, with a loose to liquid consistency. His mother stays at home with him and the child is not in day care. His symptoms began after his young cousins visited for Christmas. Which of the following is the most likely cause of his diarrhea?

- a. Rotavirus
- b. Norwalk virus
- c. Giardiasis
- d. *Salmonella*
- e. Enterotoxigenic *Escherichia coli*



**160.** A 30-year-old man returned from a vacation in Mexico 1 day ago. He spent the last 3 days of his trip with loose, more frequent bowel movements that are continuing without resolution. He has not had bloody stool or fever. His examination is normal, except for mildly diffuse lower abdominal pain. Which of the following is the best empiric treatment option for his condition?

- a. Erythromycin
- b. Ciprofloxacin
- c. Metronidazole
- d. Doxycycline
- e. Vancomycin

**161.** A 22-year-old healthy male sees you for “diarrhea.” He reports frequent loose stools without bleeding. You determine that he likely has a virally mediated process and recommend supportive care. Which of the following dietary measures should you recommend?

- a. The patient should fast until the diarrhea resolves.
- b. The patient should not eat solids, but should drink an oral rehydrating solution.
- c. The patient should drink milk.
- d. The patient should drink fruit juice.
- e. The patient can eat rice and potatoes.

**162.** A 33-year-old woman is seeing you with a chief complaint of “dizziness.” Upon further characterization, she describes “unsteadiness” and a feeling that “her balance is off.” Based on this description, which of the following terms should be used to characterize her complaint?

- a. Vertigo
- b. Orthostasis
- c. Presyncope
- d. Dysequilibrium
- e. Light-headedness

**163.** A 42-year-old woman is seeing you to follow up with a new complaint of “dizziness.” She reports that symptoms first began several months ago. At that time, she reported a subjective hearing loss and a ringing in her left ear only. Symptoms were mild, and her physical examination was normal, so you elected to follow her. Since that time, her symptoms have progressed to include dizziness and some facial numbness. Which of the following is her most likely diagnosis?

- a. Vestibular neuronitis
- b. Benign positional vertigo
- c. Acoustic neuroma
- d. Meniere disease
- e. Cerebellar tumor

**164.** In the evaluation of a 55-year-old man complaining of dizziness, you perform the Dix-Hallpike (Nysten-Barany) maneuver several times. You had the patient sit on the edge of the examining table and lie down suddenly with the head hanging 45° backward and turned to either side. With this maneuver, the vertigo was reproduced immediately and symptoms did not lessen regardless of repetition. The direction of the nystagmus changed with changing the direction that the head is turned, and the symptoms were of mild intensity. Which of the following is the most likely cause of the vertigo?

- a. Stroke
- b. Vestibular neuronitis
- c. Benign positional vertigo
- d. Meniere disease
- e. Acoustic neuroma

**165.** You are caring for a 26-year-old man with vertigo. You have diagnosed him with a peripheral vestibular disorder, and are considering treatment options. Which of the following would be the first-line therapy?

- a. NSAIDs
- b. Antihistamines
- c. Antiemetics
- d. Antibiotics
- e. Benzodiazepines

**166.** You are evaluating a 56-year-old farmer who is complaining of dyspnea. His history includes being hospitalized for bronchiolitis as a young child leading to childhood asthma, and a history of pneumonia 2 years ago, for which he was also hospitalized. He has a 20-pack-year history of smoking. Which of the following increase his risk for having restrictive lung disease as the cause of his dyspnea?

- a. A history of childhood bronchiolitis
- b. A history of asthma
- c. A smoking history
- d. A recent history of pneumonia
- e. His occupation as a farmer

**167.** You are evaluating a 71-year-old male patient with the complaint of shortness of breath. It mainly occurs with exertion. He also complains of fatigue, and needs to sleep propped up on two pillows. On physical examination, you note a large apical impulse and jugular venous distension (JVD). He has fine crackles in the bases of both lungs with decreased breath sounds. Which of the following would be the most appropriate treatment?

- a. Bronchodilators
- b. Antibiotics
- c. Steroids
- d. Anticoagulants
- e. Diuretics

**168.** You are seeing a 3-year-old child whose mother says she is having trouble in breathing. This is her third episode of difficulty in breathing in the last year. On examination, you note nasal flaring and sternal retractions with accessory muscle use. You auscultate expiratory wheezes bilaterally. Which of the following is the most likely diagnosis?

- a. Bronchiolitis
- b. Asthma
- c. Pneumonia
- d. Ventricular septal defect
- e. Valvular disease

**169.** You are evaluating a 69-year-old woman with a history of asthma and ischemic cardiomyopathy who is complaining of dyspnea. You are not sure if her symptoms are related to asthma or congestive heart failure (CHF), and you order a b-type natriuretic peptide to help in her evaluation. The level is found to be 76 pg/mL (normal is 0-100 pg/mL). Which of the following is most correct regarding the interpretation of this laboratory value?

- a. The probability that her symptoms are related to CHF is near zero.
- b. The probability that her symptoms are related to CHF is low.
- c. The probability that her symptoms are related to CHF is moderate.
- d. The probability that her symptoms are related to CHF is high.
- e. The probability that her symptoms are related to CHF is indeterminate.

**170.** You are seeing a sedentary, obese 41-year-old woman who presents to you with acute shortness of breath. She has tachycardia, but no other abnormal examination findings. You order a D-dimer and it comes back low. Which of the following is the most appropriate option?

- a. Order a spiral CT of the chest.
- b. Order a ventilation-perfusion (V/Q) scan.
- c. Order Doppler-flow studies of her lower extremities.
- d. Order a pulmonary angiogram.
- e. Reassure the patient that her symptoms are not concerning at this time.

**171.** One of your patients is dying of end-stage breast cancer. She is complaining of dyspnea. Which of the following treatment options would be most beneficial?

- a. Bronchodilators
- b. Steroids
- c. Anxiolytics
- d. Opioids
- e. Pulmonary rehabilitation program

**172.** A 23-year-old sexually active woman visits a free clinic reporting a sudden onset of dysuria that began 2 days ago. On further questioning, she also reports urinary frequency, some back pain, and a pink discoloration to her urine. She denies vaginal discharge or irritation and has been afebrile. The clinic has no microscope or urine dipsticks available. Based on this history, what is her most likely diagnosis?

- a. Acute bacterial cystitis
- b. Urethritis
- c. Pyelonephritis
- d. Interstitial cystitis
- e. Vulvovaginitis

**173.** You suspect acute cystitis in an otherwise healthy woman. Which of the following features decrease the likelihood of a urinary tract infection (UTI)?

- a. Absence of fever
- b. Absence of urgency
- c. Absence of frequency
- d. Absence of dysuria
- e. Absence of vaginal discharge

**174.** An 18-year-old woman is seeing you for back pain, frequency, and dysuria. She has never had a UTI in the past, and though she recently became sexually active, she denies vaginal discharge or risk for sexually transmitted infection. In this setting, when would a urine culture be necessary?

- a. If a urine dipstick was negative.
- b. If a urine dipstick was positive for leukocyte esterase only.
- c. If a urine dipstick was positive for leukocyte esterase and blood.
- d. If a microscopic evaluation of her centrifuged urine revealed more than 5 WBCs per high-powered field.
- e. If a microscopic evaluation of her centrifuged urine revealed significant bacteriuria.

**175.** You are evaluating a 25-year-old woman who reports frequent UTIs since getting married last year. In the last 12 months, she has had five documented infections that have responded well to antibiotic therapy. She has tried voiding after intercourse, she discontinued her use of a diaphragm, and tried acidification of her urine using oral ascorbic acid, but none of those measures decreased the incidence of infections. At this point, which of the following would be an acceptable prophylactic measure?

- a. An antibiotic prescription for the usual 3-day regimen with refills, to be used when symptoms occur
- b. Single-dose antibiotic therapy once daily at bedtime for 12 months
- c. Single-dose antibiotic therapy once daily at bedtime for 2 years
- d. Single-dose antibiotic therapy after sexual intercourse
- e. Antibiotics for 3 days after sexual intercourse

**176.** A 36-year-old woman comes to your office complaining of recurrent dysuria. This is her fourth episode in the past 10 months. Initially, her symptoms were “classic” for a UTI. She was treated without obtaining urine dipstick or microscopic evaluation. For the second episode, her urinalysis was positive for blood only. Her culture was negative, as was evaluation for nephrolithiasis. The third episode was similar, also with a negative culture. All episodes have resolved with a standard course of antibiotic therapy. Which of the following is the most appropriate next step?

- a. Evaluate for somatization disorder.
- b. Order cystoscopy.
- c. Treat for chronic vaginitis.
- d. Use a 14-day regimen of antibiotics.
- e. Use daily single-dose antibiotic therapy for prophylaxis.

**177.** A screening urinalysis in a female patient reveals asymptomatic bacteriuria. In which of the following patients would treatment be indicated?

- a. A sexually active teenager
- b. A pregnant 26-year-old woman
- c. A 45-year-old woman with uncontrolled hypertension
- d. A menopausal woman
- e. An otherwise healthy 80-year-old woman

**178.** You are seeing a 34-year-old man with urinary symptoms. He reports frequency, urgency, and moderate back pain. He is febrile and acutely ill. He has no penile discharge. His urinalysis shows marked pyuria. He has never had an episode like this before, and has no known urinary tract abnormalities. Which of the following is the most likely diagnosis?

- a. Gonococcal urethritis
- b. Nongonococcal urethritis
- c. Acute bacterial cystitis
- d. Pyelonephritis
- e. Acute prostatitis

**179.** You are seeing a 25-year-old patient complaining of a left-sided earache. She describes the pain as deep, and it worsens with eating. Her ear examination is normal, but she has tenderness and crepitus during palpation of the left temporomandibular joint. Which of the following would be the most appropriate next step?

- a. Antibiotic therapy
- b. Treatment with NSAIDs
- c. Dental referral
- d. MRI of the temporomandibular joint
- e. Obtaining an ESR

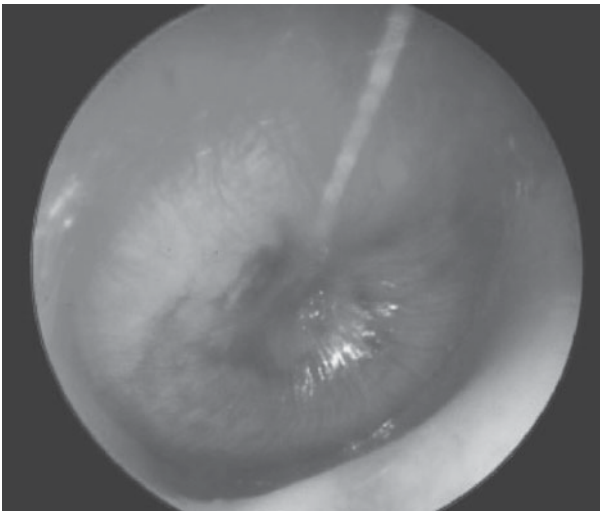
**180.** The mother of a 9-month-old infant brings him in for irritability. The child has been fussy and has not been sleeping well for 2 days. His highest temperature has been 100°F, and he has had a clear runny nose and cough. On examination, the child is crying and irritable. Which physical examination finding, by itself, is insufficient to diagnose acute otitis media?

- a. Opaque tympanic membrane
- b. Bulging tympanic membrane
- c. Impaired tympanic membrane mobility
- d. Erythematous tympanic membrane
- e. Purulent discharge in the ear canal

**181.** You are seeing a 4-year-old male child 2 weeks after being diagnosed with left acute otitis media. He completed his therapy, and is afebrile, acting well, and apparently back to normal. On examination, he has a persistent effusion in the left ear. There is no erythema, purulence, or hearing loss. Which of the following is the most appropriate next step?

- a. Reassurance and reevaluation in 2 to 4 weeks
- b. Ten-day course of a second-line antibiotic
- c. Regular use of a decongestant and reevaluation in 2 weeks
- d. Regular use of an antihistamine and reevaluation in 2 weeks
- e. Referral to an otolaryngologist

**182.** You are seeing a 6-year-old patient whose mother brought him in for severe ear pain and fever. On examination, he is febrile with a temperature of 102.5°F, and his right tympanic membrane is shown below:



*(Reproduced with permission from Knoop K, Stack L, Storrow A. Atlas of Emergency Medicine. 2nd ed. New York, NY: McGraw-Hill; 2002: 118. Courtesy of Richard A. Chole.)*

Which of the following would be the best initial treatment?

- a. A weight-adjusted dose of Tylenol
- b. A weight-adjusted course of amoxicillin
- c. A weight-adjusted course of amoxicillin-clavulanate
- d. A weight-adjusted 3-day course of azithromycin
- e. A weight-adjusted 5-day course of azithromycin



**183.** You are seeing a 16-year-old student complaining of ear pain. His pain has been present for 2 days. He denies fever and has no symptoms of upper respiratory infection. On examination, his ear canal is tender, erythematous, and swollen. His tympanic membrane is obscured by discharge and debris. Which of the following is the treatment of choice for this patient?

- a. Flushing of the ear canal with hydrogen peroxide
- b. Acetic acid washes
- c. Topical antibiotics
- d. Systemic antibiotics
- e. Oral steroids

**184.** You are seeing a 45-year-old obese diabetic woman who reports bilateral lower extremity peripheral edema. In addition to diabetes, she has arthritis, hypertension, and depression. Which of the following medications is the likely cause of her edema?

- a. Fluoxetine
- b. Metformin
- c. Naproxen
- d. Lisinopril
- e. Hydrochlorothiazide

**185.** You are evaluating a 47-year-old woman complaining of bilateral lower extremity edema. She denies dyspnea, and on examination has no rales, JVD, or ascites. Her cardiac examination is normal. What should be the next step in the evaluation of her edema?

- a. Echocardiogram
- b. Thyroid-stimulating hormone (TSH) assessment
- c. Liver function studies
- d. Lower extremity Doppler
- e. Urinalysis

**186.** You are evaluating a 40-year-old woman with a new onset of bilateral lower extremity edema. She denies dyspnea, and on examination has no rales or JVD. On evaluation, she has an abdominal fluid wave. Which of the following should be the next step in the evaluation of her edema?

- a. Echocardiogram
- b. TSH assessment
- c. Liver function tests
- d. Lower extremity Doppler
- e. Urinalysis

**187.** You are evaluating a 38-year-old man complaining of swelling of his right leg. He denies dyspnea. On examination, he is obese. You note pitting edema on the right without signs of trauma, erythema, or inflammation. Which of the following would be the most appropriate next step in the evaluation of his edema?

- a. Echocardiogram
- b. Lower extremity Doppler
- c. Spiral CT scan of his lungs
- d. V/Q scan
- e. Urinalysis

**188.** You are evaluating a 63-year-old diabetic man who noted unilateral lower extremity edema. He denies dyspnea or recent trauma. On evaluation, you note pitting edema on the right with well-demarcated erythema from the ankle to the mid thigh. Which of the following is the best treatment option?

- a. Vascular surgery referral
- b. Diuresis
- c. Compression stockings
- d. Anticoagulation
- e. Antibiotics

**189.** You are evaluating a 55-year-old man with hypertension and hyperlipidemia who complains of unilateral lower extremity edema. It has been present on and off for almost a year. He denies dyspnea or recent trauma, and has no evidence of inflammation. Which of the following would be the best treatment option for his condition?

- a. Diuresis
- b. Anticoagulants
- c. Elastic stockings
- d. Sodium restriction
- e. Angiotensin-converting enzyme (ACE) inhibitor

**190.** You are evaluating a 6-year-old girl brought in by her parents to discuss bed-wetting. She was toilet trained in the daytime at the age of 3 years, and was dry at night at about 3 1/2 years of age. Four months ago, her parents had another child, and the 6-year-old began to wet the bed at night. She has no medical condition that would account for the change. Which of the following terms correctly describes this condition?

- a. Childhood incontinence
- b. Primary monosymptomatic enuresis
- c. Secondary monosymptomatic enuresis
- d. Non-monosymptomatic enuresis
- e. Primary intentional enuresis

**191.** You are seeing a 7-year-old girl whose parents brought her in to have her bed-wetting evaluated. She has been toilet trained during the day since the age of 4, but still wets the bed at night. Her father wet the bed until the age of 8 years. Her physical examination reveals no abnormalities and her urinalysis is normal. Which of the following statements is true regarding this situation?

- a. This problem is likely due to maturational delay.
- b. Her father's history is inconsequential in this situation.
- c. It is unusual for young girls to have a problem with enuresis.
- d. The problem is likely due to her being a deep sleeper.
- e. There is likely an organic cause to her problem.

**192.** You are counseling a parent whose 7-year-old son wets the bed at night. Which of the following interventions has proven to be the most effective cure for this condition?

- a. Frequent nighttime wakening to encourage voiding
- b. Use of an alarm that wakes the child when he wets at night
- c. Use of desmopressin (synthetic DDAVP)
- d. Use of tricyclic antidepressant medications (eg, imipramine)
- e. Use of an anticholinergic antispasmodic (eg, oxybutynin)

**193.** You are evaluating a 6-year-old boy. His mother has brought him in because he wets the bed. He has never been dry at night and his parents are starting to get concerned. You obtain a thorough voiding history, and find the child to be completely normal on physical examination. He is otherwise developmentally normal. His urinalysis is normal and his post-void residual is also normal. What should be the next step in the workup of this patient?

- a. Observation
- b. X-rays of the lumbar and sacral spine
- c. Renal ultrasound
- d. Voiding cystourethrogram (VCUG)
- e. Both renal ultrasound and VUCG

**194.** You are discussing enuresis therapy with the mother of an 8-year-old girl that you care for. The mother is not interested in pharmacologic therapies, but would like to discuss using a moisture-sensitive alarm. Which of the following is true regarding the use of these alarms for nocturnal enuresis?

- a. The goal of this alarm is to wake the child just after the initiation of urination.
- b. The success rate is greater for boys than for girls.
- c. The success rate is less than 50%.
- d. If the process will be successful, it only takes 3 to 4 weeks on average.
- e. The alarms are easier for families because the child takes responsibility for the treatment.

**195.** You are seeing a 13-month-old Caucasian boy. His growth chart is shown on the next page. His past medical history and physical examination are otherwise unremarkable, and he is meeting his developmental milestones. Which of the following is most likely to reveal the cause of his growth pattern?

- a. Thorough dietary history
- b. Serum albumin levels
- c. Serum prealbumin levels
- d. Assessment of the TSH
- e. Serum IgA levels

**196.** You are evaluating a 9-month-old Caucasian girl for poor weight gain. She has gone from the 75th percentile to the 10th percentile in height and weight. She has had recurrent respiratory infections and diarrhea, but cultures obtained have been negative. Which of the following will be the most useful test in this setting?

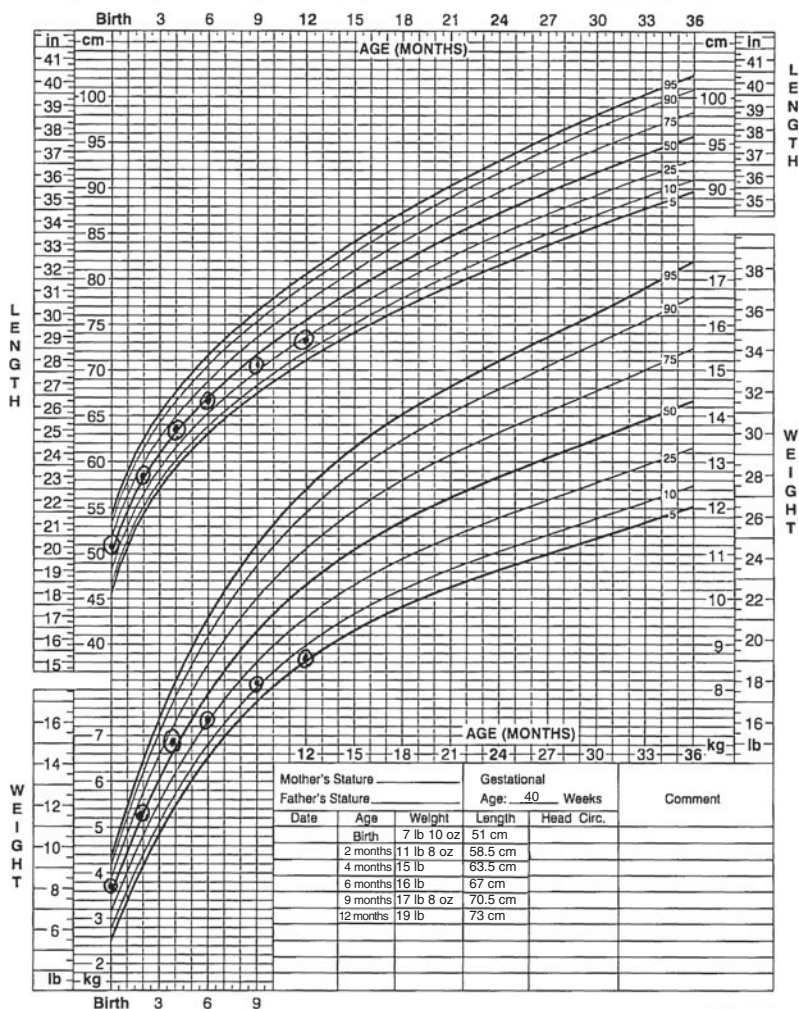
- a. Mantoux test for tuberculosis
- b. Assessment for human immunodeficiency virus (HIV)
- c. Stool for ova and parasites
- d. Sweat chloride test
- e. Renal function tests

**197.** You are evaluating an infant for poor weight gain. History from his mother reveals that he has frequent “wet burps” after eating. He coughs during and after eating, and his mother has heard him “wheeze” on occasion. He has not had diarrhea. Which of the following tests, if any, would be best to reveal the diagnosis?

- a. No testing is necessary.
- b. Esophageal pH probe.
- c. Stool hemocult.
- d. Lactose tolerance test.
- e. Abdominal ultrasound.

Birth to 36 months: Boys  
Length-for-age and Weight-for-age percentiles

NAME \_\_\_\_\_ RECORD # \_\_\_\_\_



Published May 30, 2000 (modified 4/20/01).  
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).  
<http://www.cdc.gov/growthcharts>



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**198.** You are doing a well-child check on a 9-month-old infant. His growth chart reveals failure to thrive. When you ask his mother about his eating habits, she reports that he frequently refuses the bottle. His mother says that he is so irritable he often won't eat. On examination, he is small, but shows no physical abnormalities. However, the child does not smile or vocalize and seems withdrawn. When you ask his mother about this, she shrugs her shoulders and says, "that's just how he is." Which of the following tests, if any, would be best to reveal the diagnosis in this case?

- a. No testing is necessary.
- b. Complete blood count.
- c. Sweat chloride test.
- d. Head CT or MRI.
- e. Chromosomal testing.

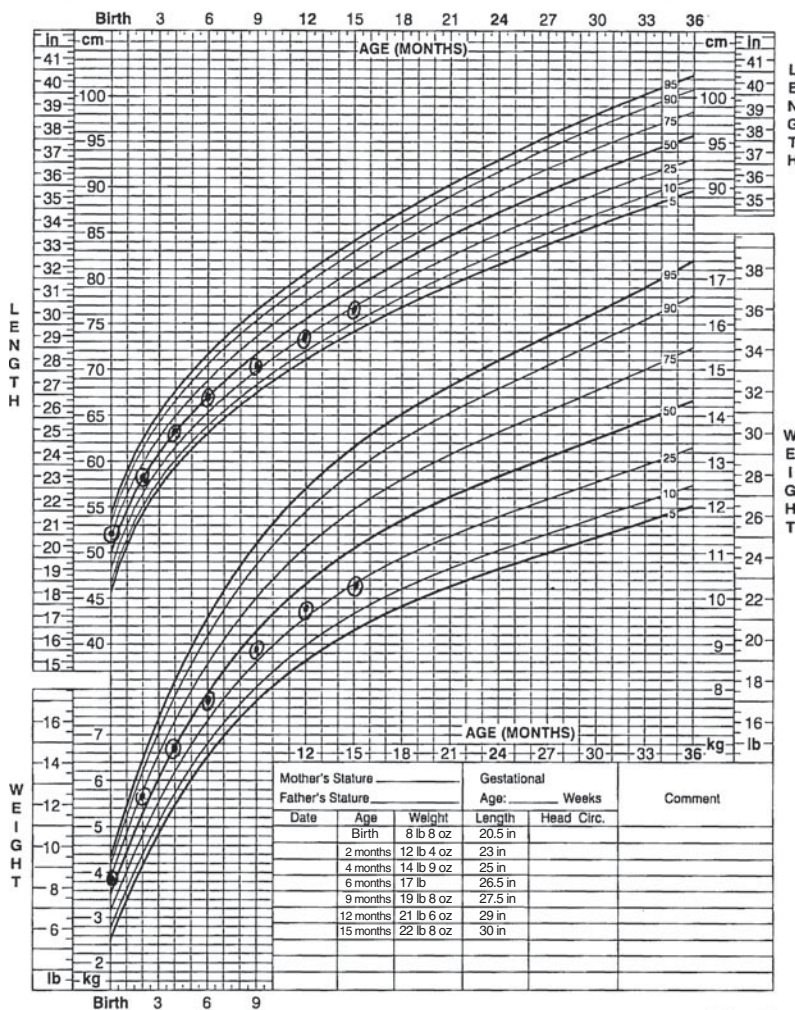
**199.** You are seeing a 15-month-old boy for a well-child check. His parents have no concerns and his developmental history is normal. His growth chart is shown. Which of the following is the most likely observation?

- a. Familial short stature
- b. Failure to thrive
- c. Hypothyroidism
- d. A normal breast-fed infant
- e. Constitutional growth delay

Birth to 36 months: Boys  
Length-for-age and Weight-for-age percentiles

NAME \_\_\_\_\_

RECORD # \_\_\_\_\_



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<http://www.cdc.gov/growthcharts>



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**200.** You have been following a 15-month-old male infant. At 9 months, his height was at the 25th percentile while his weight was at the 5th percentile. At his 12-month visit, his weight and height are unchanged, so you asked his family to bring in a detailed dietary history and counseled them on a healthy diet. At his 15-month visit, his weight is up slightly, and his vital signs are as follows:

Blood pressure:	62/32 mm Hg (low)
Heart rate:	72 beats/min
Respiratory rate:	16 breaths/min
Temperature:	98.8°F

Which of the following is the best therapeutic option for this child?

- a. Nutritional instruction to take two times the normal caloric intake
- b. Iron supplementation with increased caloric intake
- c. Zinc with increased caloric intake
- d. Referral to social services for neglect
- e. Hospital admission

**201.** A 19-year-old male patient presented to your office with a 3-day history of fatigue, sore throat, and low-grade fevers. On examination, his temperature was 100.3°F, and you noted an exudative pharyngitis with cervical adenopathy. You sent a throat culture and started him on amoxicillin prophylactically. Two days later, he presents for follow-up with continued symptoms and a diffuse, symmetrical erythematous maculopapular rash. Which of the following is the most likely cause of his symptoms?

- a. Scarlet fever
- b. Allergic reaction to amoxicillin
- c. Viral exanthem
- d. Mononucleosis
- e. Measles

**202.** A 33-year-old obese but otherwise healthy woman comes to your office complaining of fatigue. It has been present for about 2 weeks, and she describes feeling “tired” with “no energy.” She denies any change in her work or home schedule. Given this brief history, which of the following is most likely?

- a. Physiologic fatigue
- b. Depression
- c. Hypothyroidism
- d. Chronic fatigue syndrome
- e. Chronic idiopathic fatigue

**203.** A 23-year-old woman presents to your office to discuss fatigue. She describes a “lack of energy” and “tiredness,” but denies weakness or hypersomnolence. Which of the following is the next step in the workup?

- a. Screen for depression.
- b. Screen for sleep apnea.
- c. Screen for anemia.
- d. Screen for hypothyroidism.
- e. Screen for pregnancy.

**204.** You are discussing fatigue with one of your 53-year-old female patients. She reports that her symptoms have occurred for the past 6 months, and have been getting progressively worse. She reports increased stress and working longer hours at work, and she is drinking a glass of red wine each evening after work to relax. Which component of her history points to a physical cause of her fatigue?

- a. Symptoms for 6 months
- b. Progressively worsening
- c. Associated with increased stress
- d. Occurring when working longer hours
- e. Alcohol overuse

**205.** You are evaluating a 56-year-old African-American man complaining of fatigue. He describes this as a lack of stamina, but has motivation to do things. Sleep refreshes him, but he tires quickly at work. His physical examination is unremarkable. Which of the following should be included in your initial workup to help ascertain the diagnosis?

- a. Chest x-ray
- b. ECG
- c. HIV test
- d. Prostate cancer screen
- e. Drug screen

**206.** A mother brings her son in to see you emergently. He is almost 2 years old, and began to have significant abdominal pain, vomiting, and bloody stool today. He is currently hemodynamically stable, in obvious pain, and on examination you notice a palpable firm tube-like mass in his left lower quadrant. Which of the following is the most likely diagnosis?

- a. Juvenile polyposis
- b. Colitis
- c. Anal fissure
- d. Intussusception
- e. Meckel diverticulum

**207.** A 34-year-old man reports a 1-day history of hematemesis. He feels well, but does describe occasional abdominal discomfort. He denies alcohol use. On examination, his abdomen is slightly tender without peritoneal signs. His stool is not bloody, but his fecal test for occult blood is positive. Which of the following is the most appropriate next step?

- a. Gastric lavage
- b. Barium study
- c. Endoscopy
- d. Red cell scan
- e. Angiography

**208.** You are evaluating a 44-year-old man with painless, large volume intestinal hemorrhage. You suspect a Meckel diverticulum as the possible cause. Which of the following is the best test to confirm this diagnosis?

- a. Esophagogastroduodenoscopy
- b. Sigmoidoscopy
- c. Colonoscopy
- d. Technetium-99m pertechnetate scintigraphic study
- e. Laparotomy

**209.** A 56-year-old man is found to have asymptomatic diverticulosis on screening colonoscopy. He is concerned about his risk for GI bleeding from the diverticula. Which of the following statements is most accurate regarding his concern?

- a. Severe diverticular bleeding is relatively common, occurring in up to 50% of patients with diverticulosis.
- b. Diverticular bleeding is usually triggered by the ingestion of nuts, berries, seeds, popcorn, or other relatively indigestible material.
- c. Diverticular bleeding resolves spontaneously in the vast majority of cases.
- d. In patients with diverticular bleeding undergoing colonoscopy, blood emanating from a diverticulum is usually seen.
- e. If colonoscopy fails to localize the source of active bleeding, a subtotal colectomy is needed to ensure no future bleeding.

**210.** You are evaluating a 26-year-old man with rectal pain. The pain was initially associated with bright red blood on the toilet paper after a bowel movement. Over the last day, his pain has worsened. On examination, he has an exquisitely tender purple nodule distal to the dentate line. Which of the following is the best treatment for his condition?

- a. Hydrocortisone suppositories
- b. Rubber-band ligation
- c. Sclerotherapy
- d. Incision and drainage
- e. Excision

**211.** You are evaluating a 30-year-old male patient in the office with hematochezia. He has had chronic constipation, and reports bright red blood from his rectum associated with extremely painful bowel movements. After defecation, he complains of a dull ache and a feeling of “spasm” in the anal canal. The pain resolves within a few hours. On external examination, no abnormalities are noted. Which of the following is his most likely diagnosis?

- a. Anal fissure
- b. Thrombosed external hemorrhoid
- c. Internal hemorrhoid
- d. Thrombosed internal hemorrhoid
- e. Perianal abscess

**212.** You are talking with a 24-year-old woman complaining of a headache. She reports that before she has the headache, she experiences visual symptoms associated with slight nausea. When the headache occurs later, it is throbbing, pulsating, and unilateral. During the headache, she experiences light sensitivity. Sleep improves the symptoms. Her symptoms are disrupting her daily life and you decide to try prophylactic therapy. Which of the following is the most studied prophylactic agent to use?

- a.  $\beta$ -Blockers
- b. Calcium channel blockers
- c. Selective serotonin reuptake inhibitors (SSRIs)
- d. Anticonvulsants
- e. Ergotamines

**213.** One of your patients has been on  $\beta$ -blocker therapy for migraine prophylaxis. Her symptoms are not controlled and she is interested in trying another prophylactic medication. Which class of antidepressants has the strongest evidence base for prophylactic use in migraines?

- a. Tricyclic antidepressants
- b. SSRIs
- c. Monoamine oxidase inhibitors (MAOIs)
- d. Selective norepinephrine reuptake inhibitors
- e. Bupropion

**214.** You are caring for a patient who is complaining of a headache. Which of the following, if present, represents a “red flag” and necessitates a workup?

- a. Headache that presents after the age of 50 years
- b. Headache with a consistent location
- c. Frequent, severe headaches
- d. Visual disturbances with the headache
- e. Severe nausea with the headache

**215.** You are seeing a 27-year-old male migraine sufferer. His attacks happen approximately monthly, and he would like to discuss abortive therapy. Which of the following options is the best initially prescribed option?

- a. Acetaminophen
- b. NSAIDs
- c. A triptan
- d. Ergotamines
- e. Narcotics

**216.** You are discussing migraine management with a 30-year-old woman. She wants to use prophylactic medications, but had debilitating fatigue and symptoms of depression on  $\beta$ -blockers. Which of the following medications is an acceptable alternative?

- a. Nifedipine
- b. Verapamil
- c. Diltiazem
- d. Amlodipine
- e. Nicardipine

**217.** A 38-year-old man comes to the office to discuss his headache symptoms. He describes the headaches as severe and intense, “like an ice pick in my eye!” The headaches begin suddenly, are unilateral, last up to 2 hours, and are associated with a runny nose and watery eye on the affected side. He gets several attacks over a couple of months, but is symptom-free for months in between flare-ups. Which of the following is the best approach for prophylactic management of the attacks?

- a. SSRIs
- b. Triptans
- c. NSAIDs
- d. Calcium channel blockers
- e. Ergotamine

**218.** A 42-year-old man that you treat suffers from cluster headaches. He would like a medication to take when he has an attack (abortive therapy). Which of the following would be best for treatment of the acute episodes?

- a. Indomethacin, 120 mg by mouth
- b. Oxycodone, 5 to 10 mg by mouth
- c. Sumatriptan, 50 to 100 mg by mouth
- d. Ergotamine, 1 to 2 mg by mouth
- e. Hundred percent oxygen, administered via a nasal canula

**219.** You are talking with a 33-year-old woman who is complaining of headaches. She has had these headaches for 5 months, and they are increasing in frequency. She reports that the headaches may last anywhere from an hour to several days. They are now occurring about 5 to 10 times a month, without relationship to her menstrual cycle. She describes the headache as bilateral, and the pain is described as a pressure around her forehead. She denies nausea, is not sensitive to sound, but is sensitive to light during an attack. On examination, she has no obvious neurologic deficit. Which of the following is the best approach to take at this point?

- a. Prescribe a triptan for abortive therapy.
- b. Prescribe NSAIDs and follow up if no improvement.
- c. Order blood work to rule out secondary cause.
- d. Order a CT of the brain.
- e. Order an MRI of the brain.

**220.** You are evaluating a 56-year-old generally healthy man who is seeing you after finding blood in his urine. He denies pain, dysuria, frequency, or urgency. He is a smoker, and has worked for years in the printing industry. Which of the following is the most likely cause of his hematuria?

- a. Acute prostatitis
- b. Chronic prostatitis
- c. Cystitis
- d. Urinary stones
- e. Bladder carcinoma

**221.** A 16-year-old girl comes to your office complaining of blood in her urine. She is asymptomatic and not menstruating. Urinalysis reveals grossly pink urine, but urine dipstick is negative for blood. Which of the following foods is the likely cause?

- a. Spinach
- b. Strawberries
- c. Raspberries
- d. Beets
- e. Carrots

**222.** On a routine urinalysis, a 30-year-old man was found to have hematuria. His urinalysis is negative for casts and protein, but is positive for moderate blood. His urine culture is negative. IV pyelogram and serum creatinine are both normal and you send urine cytology just to be safe. It is also normal. Which of the following is most appropriate in this case?

- a. Reassurance and periodic monitoring
- b. Renal ultrasound
- c. Cystoscopy
- d. ASO titer
- e. Renal biopsy

**223.** You are caring for a 45-year-old obese man who is complaining of poor sleep. He reports that he can fall asleep relatively quickly, but wakes up hours later unable to return to sleep for the rest of the night. He has stopped using caffeine, but this has not improved his symptoms. His medications include propranolol, hydrochlorothiazide, and naproxen as needed. He is a smoker, and drinks two to three glasses of wine nightly after work. Which of the following is the most likely reason for his sleep problems?

- a. Obesity
- b. Propranolol
- c. Hydrochlorothiazide
- d. Naproxen
- e. Alcohol

**224.** You are caring for an insomniac and counseling him regarding the importance of sleep hygiene. Which of the following is an important aspect of sleep hygiene that you should share with the patient?

- a. Exercise before bed.
- b. Eat a meal close to bedtime.
- c. Ingest a moderate amount of alcohol to help with sleep.
- d. Go to bed when you are tired.
- e. If you have difficulty falling asleep, watch television in bed until you become sleepy.



**225.** You are caring for a patient who complains of transient insomnia. His problems are associated with stressful times at work, and generally inhibits his activities approximately three to four times per month. When he is impacted, he generally can fall asleep easily, but has difficulty maintaining sleep. He wakes up at around 1:30 AM and finds it difficult to get back to sleep. He has eliminated caffeine and has maintained effective sleep hygiene. Which of the following medications work best to maintain sleep?

- a. Zolpidem (Ambien)
- b. Eszopiclone (Lunesta)
- c. Zaleplon (Sonata)
- d. Diphenhydramine (Benadryl)
- e. Melatonin

**226.** A 45-year-old woman comes to your office after her husband noticed that her “skin turned yellow.” She reported “flu symptoms” a couple of weeks ago, with weakness, loss of appetite, nausea, and abdominal pain for 2 days. She has felt better since, but noted the skin discoloration yesterday. On examination, her skin tone, conjunctivae, and mucous membranes are yellow-tinged. Serologies indicate acute hepatitis A infection. Which of the following is true about this infection?

- a. She is most infectious while she is jaundiced.
- b. Most infected adults are asymptomatic.
- c. This infection never results in chronic hepatitis.
- d. Relapses are common.
- e. Fecal shedding of the virus continues until liver enzymes have normalized.

**227.** You are examining a newborn whose mother has a positive screen for hepatitis B surface antigen (HBsAg). Which of the following is true regarding this situation?

- a. When acquired early in life, the large majority of those infected with hepatitis B will have chronic disease.
- b. If the child has a normal immune system, his likelihood of developing chronic disease is small.
- c. A higher percentage of adults infected with hepatitis B will develop chronic disease as compared with children.
- d. A high percentage of children acutely infected will develop fulminant liver disease.
- e. When hepatitis B is transmitted perinatally, the child generally develops the typical symptoms of acute hepatitis.

**228.** You are following a patient after an acute hepatitis B infection. His serologies are shown below:

- HBsAg: Positive
- HBeAg: Positive
- IgM anti-HBc: Negative
- IgG anti-HBc: Positive
- Anti-HBs: Negative
- Anti-HBe: Negative

Which of the following terms best describes his disease status?

- a. Acute infection, early phase
- b. Acute infection, recovery phase
- c. Chronic infection, replicating virus
- d. Chronic infection, nonreplicating virus
- e. Previous exposure with immunity

**229.** You check serologies on a patient exposed to hepatitis B. His serologies are shown below:

- HBsAg: Negative
- HBeAg: Negative
- IgM anti-HBc: Negative
- IgG anti-HBc: Negative
- Anti-HBs: Positive
- Anti-HBe: Negative

Which of the following terms best describes his disease status?

- a. Acute infection, early phase
- b. Acute infection, window phase
- c. Acute infection, recovery phase
- d. Previous exposure with immunity
- e. Vaccination

**230.** You are following a patient after an acute hepatitis B infection. His serologies are shown below:

- HBsAg: Positive
- HBeAg: Positive
- IgM anti-HBc: Positive
- IgG anti-HBc: Negative
- Anti-HBs: Negative
- Anti-HBe: Negative

Which of the following terms best describes his disease status?

- Acute infection, early phase
- Acute infection, recovery phase
- Chronic infection, replicating virus
- Chronic infection, nonreplicating virus
- Previous exposure with immunity

**231.** You are evaluating a 74-year-old woman for the recent onset of incontinence. She has diabetes, controlled by diet but with recently increasing sugars, and hypertension, controlled with a combination of lisinopril/hydrochlorothiazide. She has complained of constipation recently and has not had a bowel movement for 3 days. Microscopic analysis of her urine is positive for bacteria, but she does not report dysuria, urgency, or frequency. Which of the historical features mentioned is inconsequential in the workup of her incontinence?

- Hyperglycemia
- Diuretic use
- Constipation
- Bacteruria
- Postmenopausal state

**232.** You are caring for a 42-year-old woman complaining of incontinence. She reports often having a strong, immediate need to void, followed by an involuntary loss of urine. She says her symptoms develop so suddenly, she often urinates while trying to get to the bathroom. Which of the following best describes the type of incontinence she is experiencing?

- Functional incontinence
- Senile incontinence
- Urge incontinence
- Stress incontinence
- Overflow incontinence

**233.** A 44-year-old mother of two reports leakage of a small amount of urine with sneezing. Recently, it began to occur with exercise. She denies recent life stressors. Which of the following best describes the type of incontinence she is experiencing?

- a. Functional incontinence
- b. Senile incontinence
- c. Urge incontinence
- d. Stress incontinence
- e. Overflow incontinence

**234.** One of your patients, a 70-year-old man, complains of frequently dribbling urine throughout the day. On occasion, he loses a large amount of urine without warning. He is otherwise healthy and takes no other medications. Based on his profile and symptoms, which of the following terms best describes his symptoms?

- a. Functional incontinence
- b. Senile incontinence
- c. Urge incontinence
- d. Stress incontinence
- e. Overflow incontinence

**235.** You are seeing a 74-year-old man who is complaining that he is leaking urine. You have ruled out secondary causes and choose to measure his “postvoid” residual. It is 250 mL. Which of the following is true?

- a. Postvoid residual measurement has no place in the workup of incontinence.
- b. This amount is below what is expected, and leads one to suspect urge incontinence.
- c. This amount is about average, and is not helpful in determining this patient’s type of incontinence.
- d. This amount is more than average, but is not helpful in determining this patient’s type of incontinence.
- e. This amount is more than average, and would lead one to suspect overflow incontinence.

**236.** You are treating a 40-year-old woman for incontinence. She would prefer not to use medications, and would like to try pelvic floor strengthening (Kegel) exercises. Which of the following types of incontinence has shown the best response to pelvic floor strengthening exercises?

- a. Functional incontinence
- b. Stress incontinence
- c. Urge incontinence
- d. Overflow incontinence
- e. Mixed incontinence

**237.** One of your patients has tried and failed behavioral therapy for incontinence. He describes a strong urge to urinate, followed by involuntary loss of urine. Which of the following would be the best medication for him to use?

- a. Oxybutynin (Ditropan)
- b. Pseudoephedrine (Sudafed)
- c. Trimethoprim-sulfamethoxazole (Bactrim, Septra)
- d. Finasteride (Proscar)
- e. Terazosin (Hytrin)

**238.** You are treating a 45-year-old man for hypertension. Since beginning therapy, he complains of urinary leakage and urgency. Which antihypertensive class is most likely to cause this?

- a. Thiazide diuretics
- b. ACE inhibitors
- c.  $\beta$ -Blockers
- d. Calcium channel blockers
- e.  $\alpha$ -Blockers

**239.** An obese 29-year-old woman is complaining of polyuria. Her work-up, including serum glucose, is negative. She is not taking any prescription medications. Which of the following, if present in her history, is the most likely cause?

- a. Marijuana abuse
- b. Over-the-counter diet pill use
- c. Over-the-counter decongestant use
- d. Over-the-counter sleeping pill use
- e. Caffeine overuse

**240.** You are evaluating a 5-year-old girl whose mother brought her in to evaluate jaundice. Laboratory evaluation reveals a conjugated hyperbilirubinemia. Which of the following is the most likely cause of her problem?

- a. G6PD deficiency
- b. Gilbert disease
- c. Crigler-Najjar syndrome
- d. Wilson disease
- e. Viral hepatitis

**241.** You are caring for a 65-year-old man with new-onset jaundice. Laboratory evaluation reveals conjugated hyperbilirubinemia. Statistically speaking, which of the following is the most likely cause of his condition?

- a. Hemolytic anemia
- b. Viral hepatitis
- c. Extrahepatic obstruction
- d. Metastatic disease
- e. Heart failure

**242.** You are evaluating a 45-year-old woman with significant jaundice. Her alkaline phosphatase is seven times normal, and her transaminases are twice normal. You perform an ultrasound of her right upper quadrant, and it is negative for obstruction and shows no bile duct dilation. You still suspect obstruction. Which of the following should be the next step in the workup?

- a. CT of the abdomen
- b. Endoscopic retrograde cholangiopancreatography (ERCP)
- c. Percutaneous transhepatic cholangiography (PTC)
- d. Magnetic resonance cholangiopancreatography (MRCP)
- e. Nuclear scintigraphy of the biliary tree (HIDA)

**243.** You are evaluating a 14-year-old female patient whose mother brought her in for evaluation. Despite the fact that all of her friends have started menstruating, the daughter has not. On examination, she has no breast development, no axillary or pubic hair, and her pelvic examination reveals normal-appearing anatomy. She has not lost weight recently and is not excessively thin. Which of the following is the most likely cause of her primary amenorrhea?

- a. Gonadal dysgenesis
- b. Hypothalamic failure
- c. Pituitary failure
- d. Polycystic ovarian syndrome
- e. Constitutional delay of puberty

**244.** You are seeing a 17-year-old patient who began menstruating at age 14, and has been relatively regular since age 15. She made an appointment to be seen today because she stopped having periods 2 months ago. She denies sexual activity. Which of the following is the most likely cause of her secondary amenorrhea?

- a. Polycystic ovarian syndrome
- b. Functional hypothalamic amenorrhea
- c. Pregnancy
- d. Hypothyroidism
- e. Hyperprolactinemia

**245.** A 16-year-old woman comes to your office complaining of unpredictable menstrual periods. She began her periods at age 14 and they have never been predictable. She denies sexual activity in her lifetime, has no systemic illness, uses no medications regularly, and her physical examination is normal. Which of the following is her most likely diagnosis?

- a. Pregnancy
- b. Ovulatory bleeding
- c. Anovulatory bleeding
- d. Uterine leiomyoma
- e. Endometrial polyposis

**246.** A healthy 60-year-old woman is seeing you to evaluate vaginal bleeding. She has not had a menstrual period for approximately 7 years, but 3 months ago noted occasional pink spotting. Since then, it has increased in amount and has become almost continuous. She is currently sexually active with her husband. On examination, she appears well, her pelvic examination is normal, and screens for sexually transmitted infections are negative. Which of the following should be your next step?

- a. Pelvic ultrasound to evaluate for fibroids.
- b. Pelvic CT scan to evaluate for pelvic tumor.
- c. Laparoscopy to evaluate for endometriosis.
- d. Endometrial biopsy.
- e. Begin hormone-replacement therapy to regulate bleeding.

**247.** You are considering treatment for a 19-year-old female patient with primary dysmenorrhea. Which of the following should be your first-line therapy?

- a. Use of NSAIDs during menses
- b. Use of NSAIDs daily
- c. Use of opiates during menses
- d. Use of an SSRI daily
- e. Use of combined oral contraceptive pills daily

**248.** You are evaluating a 32-year-old woman complaining of amenorrhea. She has mild hypertension, hypothyroidism, GERD, and depression. On evaluation, her prolactin level was found to be 89 ng/mL (H). Which of the following medications would be most likely to cause the elevated prolactin level?

- a. Proton pump inhibitors
- b. SSRIs
- c. Thiazide diuretics
- d. ACE inhibitors
- e. Thyroid hormone replacement



**249.** You are evaluating 34-year-old woman reports amenorrhea for 4 months. She has never been “regular,” but has never gone this long without a period. Her laboratory evaluation is normal, including a negative pregnancy test. You give her medroxyprogesterone acetate (Provera) for 7 days, and the next week, she reports having a period. Which of the following is the most likely cause of her amenorrhea?

- a. Premature ovarian failure
- b. Ovarian neoplasm
- c. Turner syndrome
- d. Asherman syndrome
- e. Polycystic ovarian syndrome

**250.** A 45-year-old woman in your practice is complaining of amenorrhea. During the workup, you discover her testosterone and dehydroepiandrosterone sulphate (DHEA-S) levels are elevated. Which of the following should be your next step?

- a. CT scanning of the adrenal glands
- b. Hysteroscopy
- c. Hysterosalpingogram
- d. MRI of the brain
- e. Karyotyping

**251.** You are evaluating a 16-year-old girl who has never menstruated. She has normal secondary sexual characteristics and her laboratory evaluation is negative. She has no withdrawal bleeding after a progestin challenge and you choose to perform an estrogen-progestin challenge. She has no withdrawal bleeding after that challenge as well. Which of the following is the most likely reason for her amenorrhea?

- a. Outflow tract obstruction
- b. Hypergonadotropic amenorrhea
- c. Hypogonadotropic amenorrhea
- d. Polycystic ovarian syndrome
- e. Pituitary adenoma

**252.** You are caring for a 70-year-old hospitalized male who is currently 1 day out from a carotid endarterectomy. You are called to the floor at 3 AM because the patient removed his peripheral IV and is demanding to go home. Reviewing his chart, you see he has a history of hypertension and hyperlipidemia, both of which are well controlled with medication. He is working part time as an auto mechanic and lives at home with his wife. On evaluation, he is agitated but responds to questions, is oriented to person only, and denies chest pain, palpitations, shortness of breath, dizziness, or other problems. Which of the following characteristics points to delirium instead of dementia in this case?

- a. The acute onset of his symptoms
- b. The fact that he is disoriented to time and place
- c. His history of hypertension
- d. The fact that he is responsive to questions
- e. The fact that this happened in the early morning hours

**253.** You are in the emergency room caring for a 47-year-old man who was brought in by his wife. She states that he had the acute onset of confusion. His past medical history is unremarkable, without evidence of drug or alcohol use. On examination, you find his blood pressure to be 210/130 mm Hg, his pulse to be 97 beats/min, and his respirations to be 20 breaths/min. His temperature is 98.4°F. Strength, sensation, and gait are normal. He has no tremor. Which of the following would you expect to find on ophthalmologic examination?

- a. Pinpoint pupils
- b. Dilated pupils
- c. Papilledema
- d. Sixth cranial nerve palsy
- e. Anisocoria of 1 mm

**254.** You are evaluating a homeless person in the emergency department who is displaying hyperalert confusion. Withdrawal from which of the following substances is most likely to cause this state?

- a. Levothyroxine
- b. Fluoxetine
- c. Oxycodone/acetaminophen
- d. Alcohol
- e. Amphetamine

**255.** You receive a telephone call from the mother of a 19-year-old patient. During the day, she complained of a headache, body aches, and a low-grade fever. She went to bed 30 minutes ago and her mother is now finding it difficult to arouse her. Which of the following tests would be most likely to reveal the diagnosis?

- a. Urinalysis
- b. CBC
- c. Toxicology screen
- d. Pregnancy test
- e. Lumbar puncture

**256.** You are seeing a 78-year-old man who was brought to the office by his daughter. The daughter says her father is becoming increasingly forgetful. His medical history is significant for a 20-year history of type 2 diabetes and well-controlled hypertension. On examination, he is mildly hypertensive with otherwise normal vital signs. He is oriented to time, place, and person, but is unable to complete “serial sevens” on a mini-mental status examination. Which of the historical features make this diagnosis more consistent with dementia as opposed to delirium?

- a. His history of hypertension
- b. His history of diabetes
- c. His current level of orientation
- d. His inability to complete serial sevens
- e. The recent onset of his symptoms

**257.** A 53-year-old woman is seeing you because of chronic nausea and vomiting. She has a 15-year history of type 2 diabetes mellitus. Her symptoms are worse after eating and on occasion she will vomit food that appears to be undigested. Her weight is stable and she does not appear dehydrated. Which of the following is the best treatment for her condition?

- a. An anticholinergic medication, like scopolamine (Transderm Scop)
- b. An antihistamine, like promethazine (Phenergan)
- c. A benzamide, like metoclopramide (Reglan)
- d. A cannabinoid, like dronabinol (Marinol)
- e. A phenothiazine, like chlorpromazine (Thorazine)

**258.** You are evaluating a 63-year-old man who complains of abdominal pain, distension, nausea, and vomiting. It began rather suddenly this morning, though he has had mild pain for several days. His past history is significant for a recent partial sigmoid resection for diverticulosis and an appendectomy at 23 years of age. On examination, he is afebrile, his mucous membranes are dry, but he has no orthostatic symptoms. His abdomen is distended and diffusely tender, and his bowel sounds are hyperactive. Which of the following is the most likely cause of his nausea and vomiting?

- a. Gastroenteritis
- b. Ileus
- c. Obstruction
- d. Diverticulosis
- e. Diverticulitis

**259.** You are seeing a 12-year-old girl who asked her mother to take her to the doctor for nausea and vomiting. She was diagnosed as having viral gastroenteritis in the emergency department more than 6 weeks ago, but since that time has had difficulty keeping food down. She states that whenever she eats, she gets nauseated and vomits within 10 to 30 minutes. She has been using antiemetics to control her symptoms, but they do not work consistently. She has always done well in school, and denies social stressors. Her medical history is unremarkable, but she was treated for depression last year. On examination, she is well-nourished, interactive, and in no distress with no signs of dehydration. Her weight is 147 lb (5 lb less than at her well examination 6 months ago) and her height is 5 ft. Which of the following is the most likely cause of her symptoms?

- a. Chronic gastroenteritis
- b. Psychogenic vomiting
- c. Anorexia nervosa
- d. Bulimia nervosa
- e. Central nervous system malignancy

**260.** You are seeing a 6-year-old boy with nausea and vomiting. His symptoms began acutely last evening, starting with malaise, headache, low-grade fever, body aches, and diarrhea. On examination, he has dry mucous membranes, but no orthostatic symptoms. He has diffuse mild abdominal pain without rebound or involuntary guarding. Which of the following is the best treatment for his condition?

- a. Nothing by mouth until his symptoms improve
- b. Oral rehydration with clear liquids, advancing the diet as tolerated
- c. IV rehydration, advancing to oral as tolerated
- d. Antiemetics, given intravenously or intramuscularly
- e. Trimethoprim/sulfamethoxazole therapy

**261.** You are seeing a 44-year-old woman with hypertension controlled with lisinopril, who presents with severe nausea and vomiting. She reports having months of occasional right upper quadrant pain, usually after eating out with her husband, that resolves within a couple of hours. Over the last 24 hours, her symptoms have been severe, and she is unable to eat or drink without vomiting. Her pain is significant, radiates to her back, and is better when she leans forward. On laboratory evaluation, her amylase is elevated, and her ALT is elevated. Which of the following would be the best approach to avoid recurrent problems in her case?

- a. Discontinue lisinopril.
- b. Avoid calcium in the diet.
- c. Work with the patient to remain sober.
- d. Remove the patient's gallbladder.
- e. Use medication to lower the patient's triglyceride level.

**262.** You are seeing a 48-year-old man who complains of nausea and vomiting. He is nauseated before breakfast, and he describes the vomiting as "severe" and "projectile." His symptoms are associated with headache and dizziness, but improve throughout the day. Which of the following is the most likely diagnosis?

- a. Gastroparesis
- b. Cholelithiasis
- c. Pancreatitis
- d. Vestibular disorder
- e. Brain tumor

**263.** A new mother brings her infant to see you to discuss his vomiting. He is 4 weeks old and is exclusively breast-fed. He vomits with every meal. On examination, his abdomen is distended with normal bowel sounds, and he appears dehydrated. He has lost 4 oz since his visit with you 2 weeks ago. Which of the following is the most likely diagnosis?

- a. Allergy to breast milk
- b. GERD
- c. Pyloric stenosis
- d. Intussusception
- e. Small-bowel obstruction

**264.** You are evaluating a 31-year-old man with the acute onset of nausea and vomiting. It is associated with significant epigastric pain that radiates to the back and occurs after eating any type of food. It is somewhat better if he does not eat at all. Which of the following tests is most likely to be abnormal in this case?

- a. CBC
- b. Amylase and lipase level assessment
- c. Hemocult testing of the stool
- d. Abdominal x-rays
- e. Upper endoscopy

**265.** A 42-year-old woman is seeing you to evaluate nausea and vomiting. It happens about 60 minutes after eating a big meal and is associated with pain in the epigastric area. Which of the following tests is most likely to be abnormal in this case?

- a. Amylase and lipase level assessment
- b. Hemocult testing of the stool
- c. Abdominal x-rays
- d. Ultrasound
- e. Upper endoscopy

**266.** You are treating a 26-year-old woman for nausea. Which of the following antiemetics is most likely to cause extrapyramidal reactions in the patient?

- a. Trimethobenzamide (Tigan)
- b. Prochlorperazine (Compazine)
- c. Promethazine (Phenergan)
- d. Metoclopramide (Reglan)
- e. Ondansetron (Zofran)

**267.** You are caring for a 51-year-old man complaining of neck pain for several weeks. He denies injury or illness. The pain is aggravated by movement, worse after activities, and there is a dull ache in the interscapular region. His examination reveals a limited range of motion, no tenderness to palpation, no radiation, and no neurologic signs. Which of the following is the most likely diagnosis?

- a. Osteoarthritis
- b. Chronic mechanical neck pain
- c. Cervical nerve root irritation
- d. Whiplash
- e. Cervical dystonia

**268.** You are seeing a 66-year-old man complaining of right-sided neck pain. He suffers from neck stiffness and complains that his right hand has become “numb.” On examination, you confirm paresthesia of his fingers that continues up the back of his arm, and his pain worsens when he turns his head to the right. Which of the following studies, if any, should be your next step in the workup?

- a. Cervical spine radiographs.
- b. CT scan of his neck.
- c. MRI of his neck.
- d. Electromyography (EMG).
- e. No testing is necessary.

**269.** You are seeing a 67-year-old man who is following up in your office 2 days after being involved in a motor vehicle collision. He was the restrained driver and was going 45 mi/h when he ran into a car that was stopped in front of him. Thankfully, he denies head injury or loss of consciousness. He was ambulatory after the event and only had slight neck pain, but was taken to the emergency department for evaluation. They released him that evening without any imaging studies. On follow-up with you, he denies neck pain or numbness and tingling in his extremities. His range of motion is appropriate for his age. What testing, if any, should be done at this time?

- a. No testing is needed.
- b. He should have C-spine radiographs.
- c. He should have a CT scan of the neck.
- d. He should have an MRI of the neck.
- e. He should have an EMG.

**270.** You perform a Spurling test on a 36-year-old woman complaining of neck pain. The test causes neck discomfort only. What is the most likely diagnosis for this patient?

- a. Herniated disk
- b. Spinal stenosis
- c. Osteoarthritis
- d. Mechanical neck pain
- e. Cervical dystonia

**271.** You are evaluating a patient with cervical dystonia. Which of the following treatment options is best supported by evidence?

- a. Botulinum toxin
- b. Physical therapy
- c. Stretching techniques
- d. Use of a cervical collar
- e. Ice/heat

**272.** You are evaluating a 33-year-old woman complaining of palpitations. Which of the following characteristics, if present, increase the likelihood that the symptoms are cardiac in etiology?

- a. The fact that the patient is female
- b. The fact that the patient has a sister with similar symptoms
- c. Her description of the symptoms as an “irregular heartbeat”
- d. The fact that her father has a history of heart disease
- e. The fact that the episodes last less than 1 minute

**273.** You are seeing a hypertensive 56-year-old woman who is complaining of a “fluttering in her chest.” She describes a rapid heart rate and to her it seems irregular. She is otherwise well, and denies shortness of breath, light-headedness pedal edema, or other acute symptoms. On examination, her pulse rate is rapid and irregular. Which of the following is her most likely diagnosis?

- a. Atrial fibrillation
- b. Paroxysmal supraventricular tachycardia (PSVT)
- c. Stable ventricular tachycardia
- d. Stimulant abuse
- e. Hyperthyroidism



**274.** You are seeing a 32-year-old otherwise healthy woman who is complaining of palpitations. She describes the sensation as a “flip flop” in her chest. They only last an instant and are not associated with light-headedness or other symptoms. She denies other symptoms. Which of the following is the most likely etiology of her complaint?

- a. Atrial fibrillation
- b. PSVT
- c. Ventricular premature beats
- d. Stimulant abuse
- e. Hyperthyroidism

**275.** You are seeing a 19-year-old African-American student who reports that he can “feel his heartbeat.” It happens with exercise and is associated with some light-headedness and shortness of breath. On examination, his heart has a regular rate and rhythm, but you hear a holosystolic murmur along his left sternal border. It increases with Valsalva maneuver. Which of the following is the most likely cause of his symptoms?

- a. Mitral valve prolapse
- b. Hypertrophic obstructive cardiomyopathy
- c. Dilated cardiomyopathy
- d. Atrial fibrillation
- e. CHF

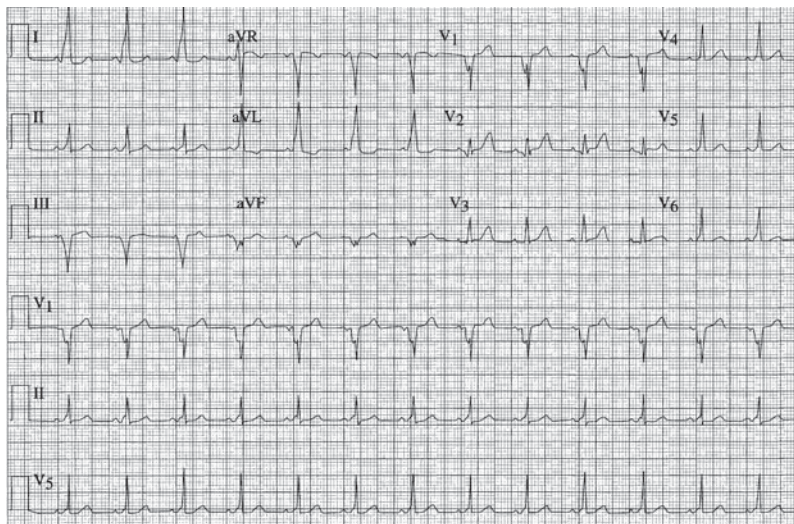
**276.** A 32-year-old woman reports that she sometimes “skips heartbeats.” Her medical and social histories include moderate daily caffeine use, but are otherwise unremarkable. Her physical examination and 12-lead ECG are normal, as are her CBC, electrolytes, and TSH. Which of the following is the next appropriate step in her workup?

- a. Reassure her and continue observation.
- b. Perform ambulatory ECG monitoring (a 24-Holter monitor, or a continuous loop event recorder).
- c. Electrophysiology consultation.
- d. Stress testing.
- e. Echocardiography.

**277.** You are evaluating a 23-year-old swimmer who is complaining of episodes of symptomatic rapid heart beating. Twice during swim practice, he develops a sensation that his heart is racing. When he measures his heart rate, he finds it to be between 140 and 160 beats/min. The first episode lasted approximately 4 minutes and the second lasted more than 10 minutes. He denies light-headedness or other symptoms during the events. Limited laboratory evaluation and ECG are normal. Which of the following is the next step in the evaluation?

- Reassure and continue observation.
- Ambulatory ECG monitoring.
- Consultation with an electrophysiologist.
- Stress testing.
- Echocardiography.

**278.** You are seeing a man complaining of symptomatic palpitations. His ECG is shown below:



(Reproduced, with permission, from Ferry D. *Basic Electrocardiography in Ten Days*. New York, NY: McGraw-Hill; 2001: 177.)

Which of the following is the likely diagnosis?

- Sinus tachycardia
- Supraventricular tachycardia
- Wolff-Parkinson-White syndrome
- Ventricular tachycardia
- Premature atrial contractions

**279.** You are caring for a 23-year-old woman complaining of pelvic pain. She reports one-sided pain that is diffuse and dull, but occasionally sharp. Menses have been normal. She denies fever. Based on this history alone, which of the following is the most likely cause of the pain?

- a. Pelvic inflammatory disease (PID)
- b. Ectopic pregnancy
- c. Ovarian cyst
- d. Uterine leiomyoma
- e. Appendicitis

**280.** You are caring for a 21-year-old woman complaining of pelvic pain. She reports a gradual onset of bilateral pain associated with fever, vomiting, vaginal discharge, and mild dysuria. Her pelvic examination demonstrates uterine, adnexal, and cervical motion tenderness. Which of the following is the best treatment option?

- a. Ceftriaxone 250 mg IM in a single dose
- b. Oral doxycycline 100 mg twice a day for 14 days
- c. Ceftriaxone 250 mg IM in a single dose plus oral doxycycline 100 mg twice a day for 14 days
- d. Ceftriaxone 250 mg IM in a single dose plus oral doxycycline 100 mg twice a day for 14 days plus oral metronidazole 500 mg twice a day for 14 days
- e. Inpatient admission for parenteral antibiotics

**281.** You are caring for a 27-year-old woman complaining of pelvic pain. She reports localized pain on the left side that has increased in severity over the last 2 days. She also reports nausea. On examination, you note a tender adnexal mass on the left. Which of the following is the most likely cause?

- a. PID
- b. Ectopic pregnancy
- c. Ovarian cyst
- d. Uterine leiomyoma
- e. Appendicitis

**282.** You are evaluating a 33-year-old woman with chronic pelvic pain. She reports cyclic pain, generally during the premenstrual period and during her menses. She has been trying to conceive for 15 months without success. Her pelvic examination is normal. Which of the following tests would be most helpful in determining the cause of her pain?

- a. CBC
- b. ESR
- c. CA-125 levels
- d. Transvaginal pelvic ultrasound
- e. MRI

**283.** You are evaluating a 14-year-old girl with pelvic pain. She denies being sexually active and you do not suspect abuse. On pelvic examination, you confirm that she has never been sexually active, see no discharge, and find no cervical motion tenderness, but feel an ovarian mass on the right side. Which of the following is the most appropriate next step in this situation?

- a. Reassurance and use of NSAIDs for pain control
- b. Reassurance and repeat pelvic examination in 6 to 8 weeks
- c. Transvaginal pelvic ultrasound
- d. CT scanning of the abdomen and pelvis
- e. MRI evaluation of the pelvis

**284.** You are evaluating an 18-year-old male with a sore throat. It has been present for 3 days and is associated with fever, aches, and fatigue. On examination, he has an exudative pharyngitis, soft palate petechiae, and posterior cervical adenopathy. Which of the following is the most likely diagnosis?

- a. Group A streptococcal infection
- b. Group A streptococcal colonization
- c. *Corynebacterium diphtheriae* infection
- d. Gonorrhea infection of the throat
- e. Infectious mononucleosis

**285.** A 7-year-old boy comes to see you for a sore throat. He reports fevers, chills, myalgias, and pain on swallowing. On examination, you note anterior adenopathy, erythematous tonsils, and edema of his uvula. He has no drug allergies. Which of the following would be the best treatment for his condition?

- a. Symptomatic care
- b. Antiviral therapy
- c. Doxycycline (Vibramycin)
- d. Amoxicillin (Amoxil)
- e. Erythromycin (Emycin)

**286.** An 11-year-old patient has a history of recurrent pharyngitis with repeatedly positive streptococcal rapid antigen detection tests. You test him when he is asymptomatic and find that the test continues to be positive. Assuming that the patient has no allergies, what would be the best treatment for him?

- a. No antibiotics are required.
- b. Penicillin (PenVK).
- c. Amoxicillin (Amoxil), using high dosages.
- d. Azithromycin (Zithromax).
- e. Clindamycin (Cleocin).

**287.** You are treating a 16-year-old patient with a sore throat. She has had 3 days of symptoms and does not have nasal congestion or cough. She also reports laryngitis. On examination, she has an erythematous pharynx without exudate. Which of the following is the most appropriate therapy based on the symptoms described?

- a. Supportive care
- b. Penicillin (PenVK)
- c. Amoxicillin (Amoxil)
- d. Erythromycin (Emycin)
- e. Clindamycin (Cleocin)

**288.** You are caring for a 19-year-old who came in for evaluation of his sore throat. He has been ill for 24 hours. In addition to the sore throat, he has a fever, but no cough. On physical examination, his temperature is 101°F, tender anterior cervical adenopathy, and tonsillar exudate. Which of the following is the next best step in his care?

- a. Reassurance and observation for a few more days.
- b. Perform a rapid streptococcal screening test.
- c. Perform a throat culture.
- d. Treat with penicillin.
- e. Treat with steroids.

**289.** You are caring for a married, monogamous 40-year-old man who complains of severe pain in his left testicle. You diagnose epididymitis. Which of the following is the most likely cause?

- a. *Neisseria gonorrhoeae*
- b. *Chlamydia trachomatis*
- c. *Ureaplasma*
- d. *Mycoplasma*
- e. *Enterobacter*

**290.** You are seeing a 14-year-old boy who was brought emergently to your office after developing severe testicular pain while weight lifting. He had a sudden onset of severe pain without fever. On examination, his cremasteric reflex is absent, and Prehn sign is negative. His urinalysis is normal. Which of the following is the most likely diagnosis?

- a. Epididymitis
- b. Testicular torsion
- c. Inguinal hernia
- d. Orchitis
- e. Testicular cancer

**291.** You are seeing a 23-year-old sexually active male who presents to have a testicular mass evaluated. He noticed it approximately 3 months ago, but was afraid to have it evaluated. It is painless and has caused him no symptoms, and he does not think it has enlarged since he first noticed it. On examination, you note a nodule on his left spermatic cord. What is the appropriate diagnostic test in this situation?

- a. Scrotal ultrasound.
- b. Abdominal and pelvic CT.
- c. Urinalysis.
- d. Urethral smear.
- e. No testing is necessary.

**292.** You are caring for a teenager who complains of acne. It is most apparent on his forehead and his cheeks. It is causing a great deal of stress in his life and impacting his self confidence. Of the following, which is most likely a contributing factor to his condition?

- a. Leaning his face on his hands while sitting at his desk at school
- b. Eating fast food
- c. Not washing his hair often enough
- d. Eating chocolate
- e. Not eating enough vegetables

**293.** You are caring for a 20-year-old male patient who is concerned about facial acne. He has had moderate symptoms since his teenage years, but has not ever tried a formalized treatment regimen. Which of the following tests or sets of tests is best to help guide treatment of his disorder?



*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill; 2009:3.)*

- a. Free testosterone.
- b. Dihydroepiandrosterone sulfate (DHEAS).
- c. Free testosterone and DHEAS.
- d. Free testosterone, DHEAS, follicle-stimulating hormone, and luteinizing hormone.
- e. No laboratory examinations are required.



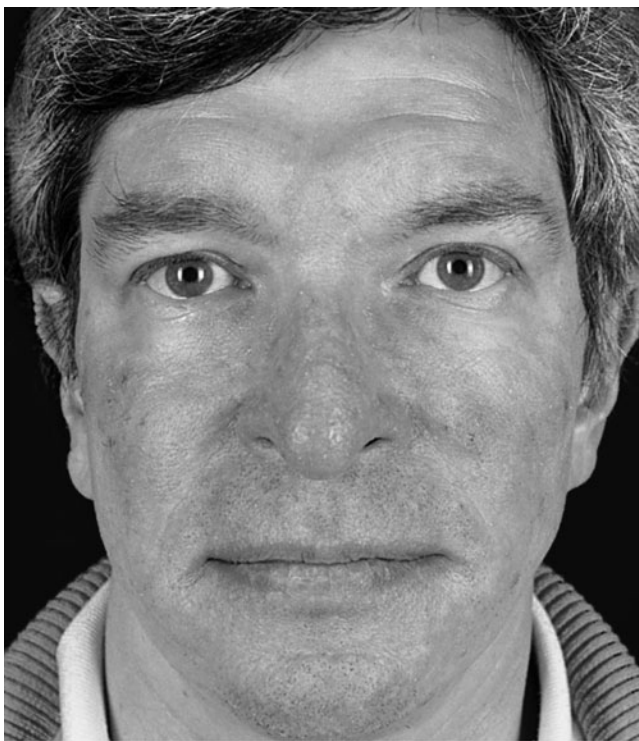
**294.** You are caring for a 13-year-old girl with acne. She is becoming increasingly concerned about her appearance and is worried about getting teased at school because of her skin. After assessment, you diagnose her with mild acne. Of the following treatment regimens, which would be best for her at this time?

- a. Topical antibiotics
- b. Benzoyl peroxide gel
- c. Topical antibiotics and benzoyl peroxide gel
- d. Topical retinoids
- e. Topical antibiotics, benzoyl peroxide gel, and topical retinoids

**295.** You are caring for a 16-year-old girl with moderate acne. Her current regimen includes topical retinoids, benzoyl peroxide gel, and oral tetracycline, but after 4 months on this regimen, she has not had improvement. You are considering treatment with oral isotretinoin (Accutane). In addition to ensuring that pregnancy is prevented during her therapy, which of the following must occur during her therapy?

- a. She must avoid Tylenol use.
- b. She must stop wearing her contacts.
- c. She must stop her tetracycline.
- d. She must be screened for depression every 3 months.
- e. She must not use topical glucocorticoids.

**296.** You are caring for a 45-year-old man who reports a 2- to 3-year history of episodic flushing of the cheeks, nose, and forehead. Over the last several months, this has been more constant, and he has developed papules and some pustules on his cheeks. His picture is shown below:

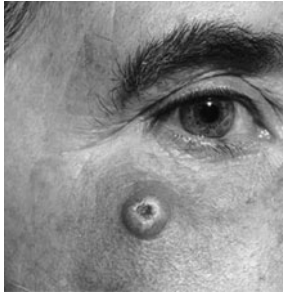


*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill; 2009:10.)*

Which of the following is the most effective treatment for this condition?

- Topical metronidazole cream
- Topical sodium sulfacetamide
- Topical antibiotics
- Topical steroids
- Oral antibiotics

**297.** A 55-year-old male patient comes to you with concerns about a nodule underneath his right eye. The nodule is shown below. He reports that it “popped up” a couple of weeks ago and has been growing ever since. Which of the following is the most likely diagnosis?



*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill; 2009:287.)*

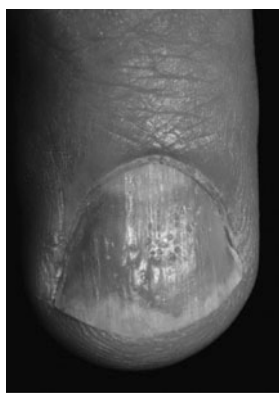
- a. Verruca vulgaris
- b. Molluscum contagiosum
- c. Keratoacanthoma
- d. Nodular basal cell carcinoma
- e. Squamous cell carcinoma

**298.** You are caring for a 28-year-old man with a rash. The rash has been present for 3 to 4 years and has remained fairly stable. A picture of his rash is shown below. He also has fingernail changes also shown below. Which of the following is the best therapeutic choice for his rash?

- a. Topical fluorinated glucocorticoids
- b. Topical pimecrolimus (Elidel)
- c. Oral Penicillin
- d. Oral retinoids (Accutane)
- e. Oral Methotrexate

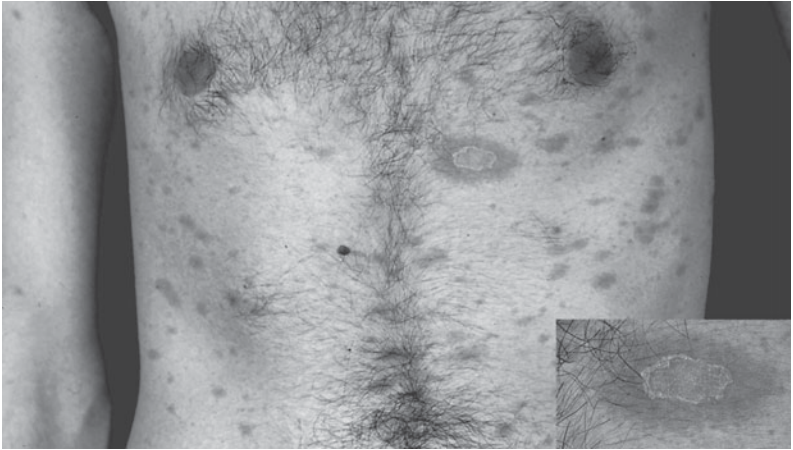


*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill; 2009:55.)*



*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill, 2009:1007.)*

**299.** You are talking with a 24-year-old man who reports an outbreak of a mildly pruritic rash. The rash initially began with a large pink patch on his chest, to the left of his sternum breast. About a week later, he noted a more generalized eruption. The rash is shown below. Which of the following treatments is indicated?



*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill; 2009:119.)*

- a. Antihistamines
- b. Antibiotics
- c. Antivirals
- d. Antifungals
- e. Cyclosporine

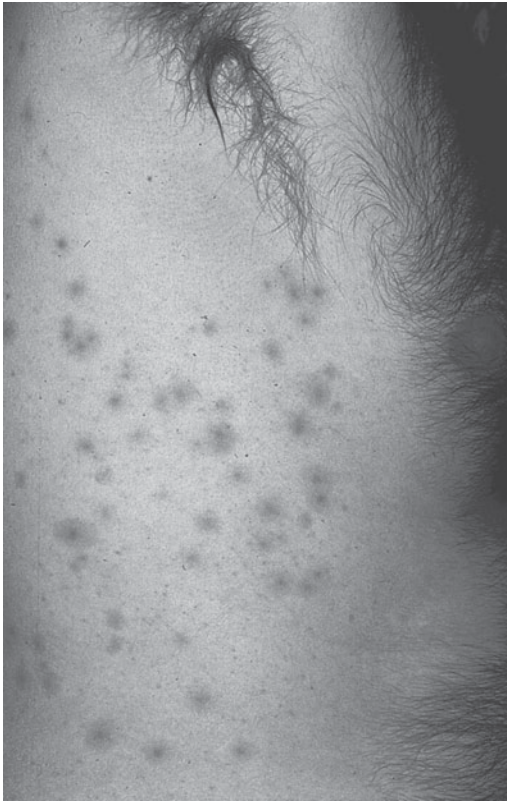
**300.** You are seeing a young child whose mother brings him in with a rash. It developed on his upper lip underneath his nose. He has had cold symptoms with a runny nose recently. His picture is shown below. Which of the following is the most likely cause of this rash?



(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill; 2009:589.)

- a. Infection with group A  $\beta$ -hemolytic streptococci
- b. Infection with *S aureus*
- c. Infection with an *Enterococcus* species
- d. Infection with *H influenzae*
- e. Infection with a *Pseudomonas* species

**301.** After returning from a ski trip in the mountains, your 35-year-old patient developed a rash. He has multiple erythematous pustules over his legs, arms, and chest. They are not pruritic and do not seem to be spreading. He denies any new soaps, lotions, foods, or medications. He did spend time in a hot tub on the trip. A picture of his rash is shown below. Which of the following is the best treatment option for this patient?



(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill; 2009:982.)

- a. Reassurance and follow-up if no improvement
- b. Topical steroid medication
- c. Systemic steroid medication
- d. Topical antibiotics with activity against *Streptococcus* and *Staphylococcus* species
- e. Oral antibiotics with activity against *Pseudomonas* species

**302.** You are seeing a 21-year-old man with a skin infection on his lip. It began with a burning at the site of the infection, then an eruption of vesicles. The rash is shown below. Which of the following is true of the treatment for this infection?



*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill; 2009:821.)*

- a. Oral antiviral agents are less effective in treating primary infections than treating recurrences.
- b. Oral therapy begun within 2 days of onset is the best treatment for recurrent outbreaks.
- c. Chronic suppression with daily therapy is beneficial for oral herpes.
- d. Acyclovir resistance makes it a poor choice for therapy.
- e. Famciclovir is less effective for cutaneous infections than valacyclovir.

**303.** Your patient is known to have genital herpes. He is starting to date a new partner, and she does not have genital herpes. Which of the following statements regarding this situation is true?

- a. In this case, it is recommended to use antiviral therapy only when the infection is active, but to start the medication at the first sign of an outbreak.
- b. Daily therapy with an antiviral agent has been demonstrated to eliminate asymptomatic viral shedding.
- c. Daily therapy with an antiviral agent can change the natural course of the infection in the affected patient.
- d. Daily therapy with an antiviral agent can be associated with resistance to the antiviral medication used.
- e. Daily therapy with an antiviral agent may reduce the risk of HIV transmission and acquisition.



**304.** An otherwise healthy 61-year-old male patient complains of a burning sensation on the back of his right shoulder for 24 hours, and subsequent development of the rash shown below. Which of the following is true about treatment for this condition?



*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill; 2009:839.)*

- a. Antiviral therapy is not indicated if the lesions have been present for more than 72 hours.
- b. Antiviral therapy decreases the overall duration of pain.
- c. Treatment with corticosteroids will decrease the likelihood of postherpetic neuralgia.
- d. Narcotics are rarely necessary for this condition.
- e. Antiviral resistance is common.

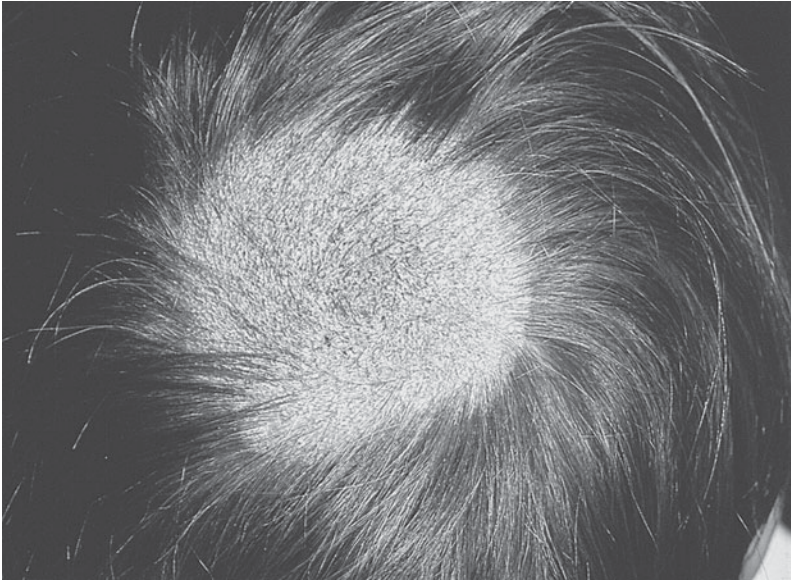
**305.** You are seeing a young girl whose mother brings her in for evaluation. She has had 3 days of low-grade fever and runny nose. Today, she awakened with an erythematous rash on her cheeks as shown below. Which of the following is the most likely cause of her symptoms?



*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 5th ed. New York, NY: McGraw-Hill; 2005:793.)*

- a. An enterovirus
- b. A parvovirus
- c. A parainfluenza virus
- d. A varicella virus
- e. Cytomegalovirus

**306.** You are seeing a young man who is complaining of a patch of hair loss. He denies pulling the hair and complains that his scalp is itchy and flakey. His scalp is shown below. Which of the following is the treatment of choice for this condition?



*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 5th ed. New York, NY: McGraw-Hill; 2005:709.)*

- a. Selenium sulfide lotion, applied daily for 4 to 8 weeks
- b. Ketoconazole (Nizoral) shampoo applied daily for 4 to 8 weeks
- c. Clotrimazole (Lotrimin) cream, twice daily for 4 to 8 weeks
- d. Griseofulvin tablets, daily for 4 to 8 weeks
- e. Fluconazole (Diflucan) tablets, daily for 4 to 8 weeks

**307.** You are caring for a 35-year-old woman who works in a veterinary hospital. She noted an itchy rash on her calf approximately 3 weeks ago. It started as a small pink circular lesion, but is spreading, and has not responded to over the counter ointments. The rash is shown below. Which of the following is the most likely causative agent?



(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 5th ed. New York, NY: McGraw-Hill; 2005:701.)

- a. *Trichophyton rubrum*
- b. *Trichophyton tonsurans*
- c. *Trichophyton metagrophytes*
- d. *Microsporum canis*
- e. *Candida albicans*

**308.** A 28-year-old woman comes to you for wart removal. On examination, she has a single wart on the lateral aspect of her index finger near the distal interphalangeal joint. She has no other medical conditions, but is trying to become pregnant. Her last period was 4 weeks ago. Which of the following treatment options would be best in this situation?

- a. Topical treatment with liquid nitrogen
- b. Topical treatment with podophyllum resin
- c. Topical treatment with local interferon inducer like Imiquimod
- d. CO<sub>2</sub> laser treatment
- e. Injection with bleomycin

**309.** A patient presents for evaluation of a new rash. You suspect atopic dermatitis. Which feature of the rash, if present, would lead you to suspect a different cause for the rash?

- a. Lesions that are present on both antecubital areas, both cheeks, and both legs
- b. Severe pruritus
- c. Erythematous lesions with flaking
- d. First outbreak of this rash occurring as an adult
- e. Rash on the flexural surfaces of the body

**310.** You are caring for a 25-year-old male who presents to you for evaluation of a new lesion found on his groin. On examination, you find a single small umbilicated flesh-colored papule, 4 mm in size, in his pubic region. Which of the following is true?

- a. A family history of skin cancer is likely in this person.
- b. The patient is probably immunocompromised.
- c. This is likely to be a sexually transmitted infection.
- d. This can be spread through aerosolized droplets.
- e. Treatment for this condition must be surgical.

**311.** You are seeing a 26-year-old male patient complaining of a red eye who says, "I think I have pink eye." He reports increased redness, tearing, discharge, photophobia, and pain. Which of his reported symptoms would be more suggestive of something other than conjunctivitis?

- a. Redness
- b. Tearing
- c. Discharge
- d. Photophobia
- e. Pain

**312.** You are seeing a 20-year-old college student who reports that her left eye became pink over the last 24 hours. She is otherwise healthy and takes no medications except oral contraceptives. She reports redness, irritation, tearing, discharge, and itching. Which of her symptoms are more specific for an allergic etiology for her condition?

- a. Single eye involvement
- b. Irritation
- c. Tearing
- d. Discharge
- e. Itching

**313.** You are caring for a 3-year-old boy who goes to daycare while his parents are at work. His mother brought him to see you because the daycare will not take him back until he's had a doctor evaluate his eye symptoms. He developed an acute redness of the left eye, associated with runny nose, cough, and increased irritability. On examination, his eye is red and watery. The discharge is clear, and he has mild eyelid edema. Which of the following is the most common cause for his condition?

- a. Coxsackie virus
- b. Parainfluenza virus
- c. Adenovirus
- d. Rhinovirus
- e. Herpesvirus

**314.** A 32-year-old mother of two young children presents to your office for evaluation of her left eye. She reports redness of the white part of her eye, with a watery discharge. She reports mild itching and a sensation as if something is in her eye. She denies a history of allergies and reports no concurrent allergic symptoms. Examination reveals a palpable preauricular lymph node. Fluorescein staining does not reveal corneal dendrites. Which of the following should be the treatment of choice in this case?

- a. Antiviral eye drops
- b. Antibacterial eye drops
- c. Corticosteroid eye drops
- d. Combination antibiotic/corticosteroid eye drops
- e. Supportive care

**315.** You are seeing a 32-year-old nurse who was treated in an urgent care for bacterial conjunctivitis. Despite the appropriate use of ciprofloxacin ophthalmic solution over the last 4 days, her purulent discharge and erythema have not improved. What should be the next step in treatment of this patient?

- a. Ciprofloxacin ointment
- b. Polymyxin-trimethoprim ophthalmic solution
- c. Oral ciprofloxacin
- d. Oral sulfamethoxazole-trimethoprim
- e. Immediate ophthalmologic referral

**316.** You have been treating a 43-year-old woman with rheumatoid arthritis for years. You and her rheumatologist have had her illness in relatively good control. She presents to you with a red eye and significant eye pain. She denies trauma. Upon further questioning, she complains of decreased vision and headache. She describes the pain as deep and boring. Her examination reveals diffuse injection of the deeper vessels with minimal discharge. Her pupils react normally. Which of the following is her most likely diagnosis?

- a. Scleritis
- b. Episcleritis
- c. Corneal abrasion
- d. Acute glaucoma
- e. Iritis

**317.** You are caring for a 32-year-old female smoker with a history of allergic rhinitis who presents to discuss upper respiratory symptoms. She reports congestion, facial pressure, nasal discharge and headache. Her symptoms have been present for 5 days and they have not improved with decongestants. Sinus palpation causes significant pain. Which of the following is true regarding the diagnosis of sinusitis in this patient?

- a. Pain with sinus palpation is valuable in making her diagnosis.
- b. Lack of improvement with decongestants is valuable in making her diagnosis.
- c. Symptom duration is valuable in making her diagnosis.
- d. Her history of allergic rhinitis is valuable in making her diagnosis.
- e. Plain sinus x-rays are valuable in the diagnosis of sinusitis.

**318.** A 36-year-old man has had recurrent bouts of sinusitis. He develops at least three sinus infections per year and wants to discuss prevention. Which of the following conditions is the most likely precipitating factor for his recurrent sinusitis?

- a. Allergic rhinitis
- b. GERD
- c. Cigarette smoking
- d. Environmental pollutants
- e. Immunodeficiency

**319.** You are seeing a 21-year-old college student who complains of congestion, headache, sinus pressure, and tooth pain for more than 2 weeks. She is otherwise healthy, but feels like she's "having trouble shaking this cold." She has used over-the-counter decongestants with limited relief. A CT scan of her sinuses demonstrates acute sinusitis. Which of the following is the most common organism causing her symptoms?

- a. *Moraxella catarrhalis*
- b. *Staphylococcus aureus*
- c. Group A  $\beta$ -hemolytic streptococcal species
- d. *Streptococcus pneumoniae*
- e. A polymicrobial mixture of many organisms

**320.** You are caring for a 42-year-old woman with a 10 days of congestion, purulent nasal discharge, and tooth pain symptoms. Based on clinical grounds, you diagnose her with sinusitis. According to studies, which of the following statements regarding treatment of this condition is true?

- a. Treatment with amoxicillin is superior to placebo.
- b. Treatment with erythromycin is superior to placebo.
- c. Treatment with ciprofloxacin is superior to placebo.
- d. Treatment with trimethoprim-sulfamethoxazole is superior to placebo.
- e. No significant difference has been demonstrated between any antibiotic and placebo.



**321.** You are seeing a 16-year-old high school football player to discuss a recent injury. Last night, during football practice, he dislocated his shoulder. His trainer took him to an urgent care where an x-ray confirmed the diagnosis. They relocated his shoulder and put him in a sling. This is the first time he has dislocated his shoulder. Which of the following represents the best appropriate next steps?

- a. If his range of motion is normal, allow him to return to play without restriction.
- b. Immobilization until an MRI can be obtained.
- c. Referral for physical therapy as soon as possible.
- d. Immobilization for 7 to 10 days, then begin physical therapy.
- e. Immediate surgical referral.

**322.** A 30-year-old male cyclist comes to your office complaining of knee pain. He describes lateral knee pain when he goes for a long bike ride that does not improve with activity. On examination, he has tenderness over the lateral aspect of the knee just above the joint line. Which of the following is the mostly likely diagnosis?

- a. Iliotibial band syndrome
- b. Patellofemoral pain syndrome
- c. Medial collateral ligament sprain
- d. Anterior cruciate ligament sprain
- e. Medial meniscal tear

**323.** A patient comes to see you after a skiing accident 6 days ago. She reports twisting her left knee during a fall, feeling a “pop,” and noting significant immediate swelling. She was able to bear weight immediately, but did not ski for the rest of the trip. Her pain is now improved, and she is ambulating, but she says the knee feels unstable. On examination, she has a tense effusion in her left knee and is unable to extend her knee fully. Which of the following is the most likely cause of her symptoms?

- a. Patellofemoral pain syndrome
- b. Anterior cruciate ligament (ACL) tear
- c. Posterior cruciate ligament (PCL) tear
- d. Meniscal injury
- e. Medial collateral ligament sprain

**324.** You are caring for a 20-year-old male patient with knee pain. He is a runner and reports bilateral anterior knee pain. He is unable to localize the pain to a specific region. The pain is worse with stairs and he has been unable to run because of the pain. When he sits for prolonged periods of time, the knees start to ache. Strengthening of which of the following muscles will lead to improvement of this problem?

- a. Hip abductors
- b. Hip adductors
- c. Quadriceps
- d. Hamstrings
- e. Internal rotators

**325.** You are seeing a 14-year-old girl who hurt her ankle while dancing yesterday. She reports that her ankle “twisted in” causing immediate pain and the inability to bear weight. In the office, she has bruising and tenderness over the anterior talofibular ligament (ATFL) with acute swelling. She is unable to bear weight due to the pain. Which of the following is the most appropriate next step?

- a. Obtain x-rays of her ankle.
- b. Encourage early mobilization.
- c. Prescribe rest, ice, compression, and elevation.
- d. Use an NSAID to help with the pain and inflammation.
- e. Begin physical therapy.

**326.** You are seeing a 56-year-old man who reports a recent syncopal episode. Which of the following tests is always indicated in the workup?

- a. CBC
- b. TSH assessment
- c. ECG
- d. Echocardiogram
- e. Tilt table testing

**327.** A 21-year-old generally healthy college student is seeing you in your office after having “passed out” playing basketball. This has never happened before. He has no significant past medical history and takes no medications. On examination, you note a harsh crescendo-decrescendo systolic murmur, heard best at the apex and radiating to the axilla. Which of the following tests is most likely to reveal the etiology of his syncopal episode?

- a. Echocardiogram
- b. Holter monitoring
- c. ECG
- d. Stress testing
- e. Tilt table testing

**328.** You are caring for a 49-year-old type 2 diabetic woman who presents to you after passing out. The event occurred 1 day ago, while she was walking up steps to her seat at a movie theatre. She reports that she felt breathless, became hot and sweaty, and the next thing she remembers, she was waking up on the floor. Her diabetes has been fairly well-controlled with metformin, and her last glycosolated hemoglobin 1 month ago was 7.9%. Her examination is benign, as is her ECG. Which of the following tests would be most likely to reveal the cause of her syncope?

- a. Serum glucose assessment
- b. Hemoglobin A<sub>1c</sub>
- c. Echocardiogram
- d. Stress testing
- e. Twenty-four hour Holter monitoring

**329.** You are evaluating a 28-year-old woman who has had several episodes of passing out. In general, the events are unpredictable, and are not preceded by any prodrome. Her examination has been consistently normal. Initial workup, including a pregnancy test, hematocrit, serum glucose, orthostatic blood pressures, and ECG were normal. She underwent 24-hour Holter monitoring and long-term ambulatory loop ECG evaluation, both of which were negative. Which of the following is the most appropriate next test?

- a. Psychiatric evaluation
- b. Carotid Doppler
- c. MRI of the brain
- d. Stress testing
- e. Tilt table testing

**330.** You are evaluating a 55-year-old patient who is complaining of a hand tremor. The tremor is bilateral and symmetric and is not accentuated during movement. It seems to be worse when holding a pen. When the patient squeezes your hand, the tremor is noticeable, but does not seem to worsen. Which of the following best characterizes this condition?

- a. Intention tremor
- b. Essential tremor
- c. Parkinsonian tremor
- d. Tic
- e. Chorea

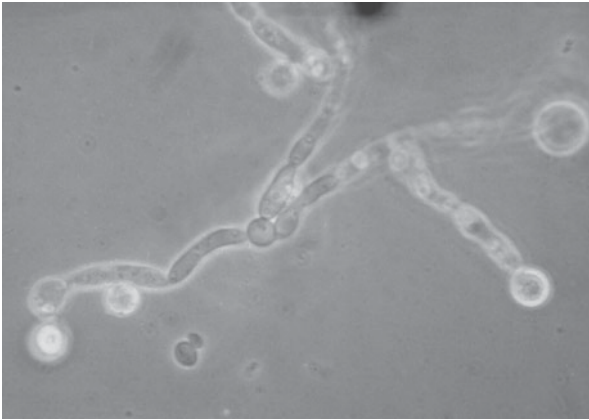
**331.** You suspect Parkinson disease in a patient that you've been caring for. You test the glabella tap reflex and find that the patient consistently blinks after 15 taps. Which of the following is most accurate regarding this finding?

- a. This is a normal finding and is reassuring.
- b. This is pathognomonic for Parkinson disease.
- c. This is a common finding in Parkinson disease.
- d. This is a common finding in patients with essential tremors.
- e. This is a poor prognosis.

**332.** Working up a tremor in a patient, you found that the patient does have Parkinson disease. Which of the following medications has been shown to delay functional impairment and disease progression?

- a. Selegiline (Eldepril)
- b. Carbidopa-levodopa (Sinemet)
- c. Bromocriptine (Parlodel)
- d. Pramipexole (Mirapex)
- e. Ropirinole (Requip)

**333.** You are evaluating a 20-year-old woman complaining of vaginal discharge. She reports vaginal itch and white discharge. She has no history of vaginal infections in the past and has never been sexually active. A potassium hydroxide (KOH) preparation of the discharge is shown below. Which of the following is the best treatment option for this condition?



*(Reproduced, with permission, from Wolff K, Johnson RA. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 6th ed. New York, NY: McGraw-Hill; 2005:717.)*

- a. Reassurance that this is a normal variation and that no treatment is necessary.
- b. Topical azole applications.
- c. Topical metronidazole.
- d. Oral clindamycin.
- e. Doxycycline.

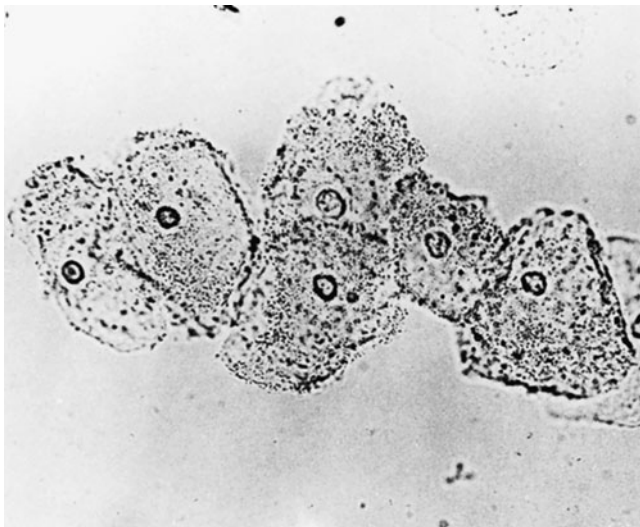
**334.** You are discussing recurrent vaginal discharge with a patient. She has been evaluated three times in the last 6 months and has had a vaginal candidiasis each time. She has symptom-free intervals, but the infection seems to be recurrent. She is monogamous, sexually active with a male partner, takes birth control pills, and denies other complaints or known illnesses. Which of the following is most likely to improve this patient's condition?

- a. Test her for diabetes, and control her elevated glucose level.
- b. Ask her to discontinue her birth control pills.
- c. Treat her sexual partner.
- d. Test her for HIV, and begin therapy.
- e. Ask her to add fiber to her diet.

**335.** You are seeing a 17-year-old girl who reports intense vaginal itching and urinary frequency. She has been sexually active for 6 months. On examination, you note frothy yellow-green discharge with bright red vaginal mucosa and red macules on the cervix. What is the saline preparation of the discharge most likely to show?

- a. Sheets of epithelial cells “studded” with bacteria
- b. “Moth-eaten” epithelial cells
- c. Motile triangular organisms with long tails
- d. Many white blood cells
- e. Hyphae

**336.** Your patient describes a recent vaginal discharge. She reports more discharge than usual and an unusual odor after intercourse with her husband. A KOH preparation of the discharge produces a fishy odor, and a saline preparation is shown below. Which of the following is the treatment of choice for her condition?



(Reproduced, with permission, from DeCherney AH, Nathan L, Goodwin TM, Laufer N: Current Diagnosis & Treatment Obstetrics & Gynecology, 10th ed. New York, NY: McGraw-Hill, 2007.)

- a. Metronidazole
- b. Doxycycline
- c. Clotrimazole
- d. Imiquimod
- e. Acyclovir

**337.** You are caring for an 18-month-old infant, whose mother brings him in for “wheezing.” She reports that he has had a runny nose and a slight cough for 2 days, along with a low-grade fever. On examination, he does not appear to be in respiratory distress, but his lung examination does reveal bilateral wheezing. Which of the following is the most likely diagnosis?

- a. Acute viral respiratory tract infection
- b. Pneumonia
- c. Bronchiolitis
- d. Aspiration
- e. Asthma

**338.** A 61-year-old man comes to see you for shortness of breath. He has a history of hypertension, type 2 diabetes, and hyperlipidemia. He quit smoking 4 years ago after a more than 30-pack-year history. On physical examination, he is not in respiratory distress, but he has diffuse wheezing in the bilateral lower lobes of his lungs. His cardiac examination demonstrates an S<sub>4</sub> and he demonstrates JVD. Which of the following treatments would likely relieve his symptoms?

- a. Antibiotic therapy
- b. Epinephrine
- c. Steroid therapy
- d. Diuretics
- e. Anticoagulation

**339.** You are seeing a 24-year-old woman who presents to your office complaining of “wheezing.” She reports acute shortness of breath that occurred while she was shopping, and her wheezing is associated with pleuritic pain. She is otherwise healthy, only taking oral contraceptives. On examination, she is tachypneic, but not in acute distress. Auscultation of her lungs is normal. After the appropriate diagnostic workup, what is the best treatment option for this patient?

- a. Reassurance and observation
- b. Antibiotic therapy
- c. Anticoagulation
- d. Bronchodilators
- e. Steroids

**340.** You are seeing a 23-year-old man for shortness of breath. He has no history of asthma or wheezing and is otherwise healthy. His lung examination does reveal significant wheezing bilaterally. Which of the following tests is necessary?

- a. Observation and treatment
- b. Chest x-ray
- c. Peak flow testing
- d. Pulmonary function tests
- e. CBC

**341.** You are evaluating a 9-month-old child with recurrent wheezing. His mother also reports that he vomits after formula as well. Which of the following is the best test to determine the cause of his wheezing?

- a. Pulmonary function testing
- b. Chest x-ray
- c. Upper GI barium swallow
- d. Upper endoscopy
- e. Twenty-four hour pH probe

**342.** You are evaluating a 35-year-old patient with known asthma. He comes to your office complaining of increased shortness of breath despite compliance with his usual asthma regimen. He reports cough, but denies fever or sputum production. His pulmonary examination reveals wheezing bilaterally without crackles or rhonchi. Which of the following is most useful in this setting?

- a. Chest x-ray
- b. Peak flow testing
- c. Pulmonary function testing
- d. CBC
- e. Nasopharyngeal washing



# Acute Complaints

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## Answers

**107. The answer is b.** (*South-Paul, pp 310-328.*) The first priority when evaluating abdominal pain is to determine whether the pain is acute or chronic. Sudden and/or severe onset of pain should lead the clinician toward an emergent evaluation. Right lower quadrant pain is suspicious for an acute appendicitis, but by itself is not specific enough to warrant an emergent workup. A “gnawing” sensation is often described with ulcer disease, while pain that worsens after eating is associated with many conditions—pancreatitis, gallbladder disease, or even reflux. In the absence of hemodynamic instability, those causes are less likely to warrant emergent workup. Emesis with pain is not enough, by itself, to warrant emergent workup.

**108. The answer is b.** (*South-Paul, pp 310-328.*) The location and radiation of pain is often helpful in determining the cause of abdominal pain. Pain from an acute appendicitis usually starts in the periumbilical region before moving to the right lower quadrant. Pancreatitis generally settles in the midepigastric region with radiation to the back and is associated with nausea and vomiting. Gallbladder pain is typically in the epigastric or right upper quadrant and radiates to the scapula. Esophageal spasm is often referred higher in the chest. GERD is midepigastric and generally does not radiate.

**109. The answer is b.** (*South-Paul, pp 310-328.*) Advanced age can change the presentation and perception of abdominal pain. In fact, studies estimate that there is a 10% to 20% reduction in the perceived intensity of the pain per decade after the age of 60. Only 22% of elderly patients with appendicitis present with classic symptoms, making the diagnosis more difficult. Therefore, a high index of suspicion is necessary. Small-bowel obstruction and constipation may cause bilateral lower quadrant pain and decreased appetite, but fever indicates something different. IBS is chronic and generally not associated with fever. Pancreatitis is associated with food intolerance but the associated pain is usually in the epigastric region.

**110. The answer is c.** (*South-Paul, pp 310-328.*) The specific site of tenderness is classic for many sources of abdominal pain. Sudden cessation of inspiratory effort during deep palpation of the right upper quadrant is called “Murphy sign” and is suggestive of acute cholecystitis. Hepatitis and gallstones may cause right upper quadrant tenderness, but generally do not elicit Murphy sign. Pain caused by pancreatitis often radiates to the back. Pain from renal calculi often radiates to the shoulder.

**111. The answer is c.** (*South-Paul, pp 310-328.*) The patient describes the classic presentation for peptic ulcer disease. Infection with *H pylori* is the leading cause of peptic ulcer disease, with the use of NSAIDs the second most common cause. Alcoholism and gallstones can cause pancreatitis, but that presents differently. Gastroparesis may cause dyspepsia, but is a less likely cause for ulcer disease.

**112. The answer is a.** (*South-Paul, pp 310-328.*) Reflux can be appropriately diagnosed by medical history and by evaluating the response to treatment. Those who respond are likely to have the diagnosis. Upper endoscopy fails to reveal GERD in 36% to 50% of the patients who have been found to have GERD by a pH probe. EGD should be performed if bleeding, weight loss, or dysphagia is present, especially in an elderly patient. The other tests have not been shown to be sensitive or specific enough to replace response to treatment as a diagnostic tool.

**113. The answer is b.** (*South-Paul, pp 310-328.*) In many cases of GERD, the diagnosis can be made using the medical history and trying treatment to assess for response. Symptomatic improvement after treatment is indicative of GERD and further workup is usually unnecessary. However, endoscopy should always be performed if alarm symptoms are present. These symptoms include bleeding, abdominal mass, weight loss, dysphagia, or vomiting, especially if these symptoms are present in an elderly patient.

**114. The answer is d.** (*South-Paul, pp 310-328.*) ERCP is the gold standard for diagnosis and treatment of choledocholithiasis, and is usually performed in the setting of an acute cholecystitis with increased liver enzymes, amylase, or lipase. Ultrasound shows stones, but is less sensitive for choledocholithiasis or for complications (abscess, perforation, and pancreatitis). CT or MRI is better for those. Cholescintigraphy can be used, and

a negative test rules out cholecystitis, but in the setting of increased liver enzymes, an ERCP is a better choice.

**115. The answer is a.** (*South-Paul, pp 310-328; McPhee, pp 604-607.*) The patient described in this question has pancreatitis. Gallstones cause the majority of cases of pancreatitis. Alcohol causes about 30% of the cases. Ten to thirty percent are idiopathic. Less common causes include hypercalcemia, hyperlipidemia, abdominal trauma, medications, infections, and instrumentation (for instance, after an ERCP).

**116. The answer is b.** (*South-Paul, pp 310-328.*) Ranson's criteria assess the severity and prognosis of pancreatitis. On admission, five criteria are considered. It is a poor prognostic sign if the age is more than 55, WBC is greater than  $16,000/\text{mm}^3$ , glucose is greater than 200 mg/dL, LDH is greater than 350 IU/L, and AST is greater than 250 U/L. Six other criteria reflect the development of complications and include a decrease in hematocrit greater than 10 mg/dL, a BUN increase greater than 5 mg/dL, calcium less than 8 mg/dL,  $\text{PaO}_2$  less than 60 mm Hg, base deficit greater than 4 mEq/L, and a fluid sequestration greater than 6 L. These are assessed during the first 48 hours of admission.

**117. The answer is e.** (*South-Paul, pp 310-328.*) IBS is typified by symptoms of abdominal pain or discomfort associated with disturbed defecation. The Rome Consensus Committee for IBS developed diagnostic criteria that are symptom, not laboratory-based. The criteria include symptoms that are present for at least 12 weeks (not necessarily consecutive) in the previous 12 months, and pain that is characterized by two of the following three features: (1) relieved by defecation, (2) onset is associated with a change in stool frequency, or (3) onset is associated with a change in the form or appearance of stool. Since the patient in this question meets criteria, laboratory testing is not necessary, but some clinicians would be reassured by a normal CBC and ESR.

**118. The answer is e.** (*South-Paul, pp 310-328.*) Dyspepsia refers to a set of symptoms that can encompass a variety of diseases and the etiologies associated with them. Most clinicians describe dyspepsia as chronic or recurrent discomfort centered around the upper abdomen. Dyspepsia can be associated with heartburn, belching, bloating, nausea, or vomiting, and while common causes include peptic ulcer disease (PUD) and GERD,

no specific etiology is found for 50% to 60% of patients who present with dyspepsia. Only 15% to 25% of patients with dyspepsia have ulcer disease, and only 5% to 15% have GERD. Rare causes include gastric or pancreatic cancers.

**119. The answer is d.** (*Mengel, pp 9-12.*) Many types of cervical and vaginal abnormalities can be detected using the Pap smear. When the results are reported as “atypical squamous cells of undetermined significance” (ASCUS), the physician may repeat the test in 4 to 6 months and in 1 year, perform HPV testing on the sample, or proceed to colposcopy. If the HPV testing is negative, the patient is at low risk for cancer, and the Pap test can be repeated in 1 year, especially if the patient is monogamous.

**120. The answer is d.** (*Mengel, pp 9-12.*) When the results of a Pap smear are reported as ASCUS, and HPV testing on the sample is positive, the physician should proceed to colposcopy. Colposcopy involves cervical examination under stereoscopic magnification and includes biopsy of abnormal-appearing areas, and is the definitive test for assessing Pap smear abnormalities. Imiquimod (Aldara) is an immune modulator and can treat warts, but is not indicated in this case.

**121. The answer is d.** (*Mengel, pp 9-12.*) When the results of a Pap test are reported as ASCUS, and HPV testing is unavailable, the physician may choose to perform colposcopy or repeat the Pap smear in 4 to 6 months. If the physician chooses to repeat the Pap test, the results should be carefully followed. If the results are reported as ASCUS or higher, a colposcopy should be performed. If the repeat is normal, the Pap should be repeated again in 4 to 6 months. If the repeat Pap test is again negative, the frequency of testing can return to normal.

**122. The answer is c.** (*Mengel, pp 9-12.*) When the results of a Pap test are reported as ASCUS, and HPV testing is unavailable, the physician may choose to perform colposcopy or repeat the Pap smear in 4 to 6 months. If the physician chooses to perform the colposcopy and no CIN is found, the Pap test should be repeated in 12 months and the frequency of testing can return to normal.

**123. The answer is e.** (*Mengel, pp 9-12.*) When the results of a Pap test are reported as ASCUS, and HPV testing is unavailable, the physician may

choose to perform colposcopy or repeat the Pap smear in 4 to 6 months. If the patient is postmenopausal and not taking estrogen replacement, the Pap test can be repeated 1 week after a course of vaginal estrogen (usually 4 weeks of therapy). If the smear remains abnormal, colposcopy can be considered at that time. Repeating the Pap test immediately would not be likely to reveal different results. Performing the colposcopy may not be necessary for the patient, and therefore can be delayed. Delaying workup is not advisable, as it may delay diagnosis.

**124. The answer is d.** (*Mengel, pp 9-12.*) When the results of a Pap smear are reported as ASCUS, favoring low-grade squamous intraepithelial lesion (LSIL), the physician should proceed to colposcopy. Colposcopy involves cervical examination under stereoscopic magnification and includes biopsy of abnormal appearing areas, and is the definitive test for assessing Pap smear abnormalities. If the biopsies confirm the diagnosis, definitive treatment is needed.

**125. The answer is d.** (*Mengel, pp 9-12.*) When the results of a Pap smear are reported as “atypical glandular cells,” the physician should proceed to colposcopy. Colposcopy involves endocervical sampling and it will help to further identify the glandular cell abnormality noted on the Pap smear.

**126. The answer is c.** (*Mengel, pp 9-12.*) When the results of a Pap smear are reported as atypical glandular cells and are reported to be of endometrial origin, endometrial biopsy is necessary to rule out endometrial cancer. This is true even if the patient does not report abnormal vaginal bleeding.

**127. The answer is a.** (*McPhee, pp 470-486.*) Anemias can often be classified by cell size. Causes of microcytic anemias include iron deficiency, anemia of chronic disease, thalassemia, and sideroblastic anemias. In iron deficiency, the red cell distribution width (RDW) would be elevated due to variation in cell size. In sideroblastic anemia, the MCV would be normal, high, or low, but the red cells are dimorphic. In thalassemia, the RDW would be normal because the red cells are uniformly small. Aplastic anemia and anemia due to chronic renal insufficiency are generally normocytic.

**128. The answer is a.** (*South-Paul, pp 329-342.*) The laboratory evaluation in this patient clearly indicates iron deficiency anemia. The most common cause is blood loss. Poor nutrition and/or inadequate absorption are less

common causes. Chronic disease would lead to a high or normal ferritin and a low TIBC. Folic acid deficiency would lead to an elevated MCV.

**129. The answer is d.** (*South-Paul, pp 329-342.*) The patient described has a laboratory profile suspicious for thalassemia minor. These patients have low hemoglobin and MCV, but in contrast to iron deficiency, the patients have an elevated RBC and normal RDW. Additionally, the MCV is low out of proportion to the anemia. Given that the patient is asymptomatic, he should be treated only if necessary. Treatment includes transfusion if blood loss leads to significant anemia. The patient should have genetic counseling if planning a family.

**130. The answer is c.** (*South-Paul, pp 329-342.*) Some clinical features are common to all megaloblastic anemias—anemia, pallor, weight loss, fatigue, and glossitis to name a few. Neurologic symptoms are specific to vitamin B<sub>12</sub> deficiency. Usually, treatment is parenteral vitamin B<sub>12</sub> replacement weekly for 1 month, often with concurrent administration of folic acid. Once levels are established, oral therapy may be sufficient.

**131. The answer is e.** (*South-Paul, pp 329-342.*) Most often, vitamin B<sub>12</sub> deficiency is a result of inadequate absorption. Since vitamin B<sub>12</sub> is present in all animal products, only strict vegans or people not ingesting animal products would be deficient from a dietary standpoint. Vitamin B<sub>12</sub> deficiency is not a side effect of hydrochlorothiazide. Alcohol can impact intracellular processing of folic acid, but not vitamin B<sub>12</sub>.

**132. The answer is b.** (*South-Paul, pp 329-342.*) The slide shows sickle-cell anemia, an autosomal recessive trait seen in those of African, Mediterranean, or Asian heritage. It is found before the age of 6 in 90% of patients, with acute pain crises as the most common presentation. Prophylaxis for pain crises involves ensuring adequate oxygenation and hydration. Immunization against streptococcal infection is appropriate, as most patients are functionally asplenic. The patients often have daily prophylaxis with penicillin until the age of 5. Immunization and antibiotic prophylaxis do not, however, prevent pain crises. Chronic analgesics and scheduled transfusions have not been shown to reduce pain crises.

**133. The answer is b.** (*Mengel, pp 36-43.*) The skin lesions of Rocky Mountain spotted fever are typically red macules on peripheral extremities

that become purpuric and confluent. Lyme disease typically presents as a slowly spreading annular lesion—erythema chronicum migrans. Tularemia is characterized by pain and ulceration at the bite site. Brown recluse spider bites most often present as local pain and itching, then a hemorrhagic bulla with surrounding erythema and induration. The black widow bite is characterized by a mild prick followed by pain at the bite site.

**134. The answer is e.** (*Mengel, pp 36-43.*) The patient in the question likely has Lyme disease based on his early constitutional symptoms and rash consistent with erythema chronicum migrans. Based on his current symptoms, he likely has early disseminated disease. This is characterized by multiple system involvement, lymphadenopathy, musculoskeletal pain, arthritis, and pericarditis. Treatment of Lyme disease is dependent on the stage of the disease. Early localized disease can be treated with oral antibiotics (amoxicillin or doxycycline) for 14 to 21 days. Early disseminated disease is treated with IV therapy for 2 to 3 weeks. Ceftriaxone or cefotaxime and chloramphenicol are options. Rocky Mountain Spotted Fever is treated with chloramphenicol that continues 2 to 3 days after the patient is afebrile, and tularemia is treated with streptomycin intramuscularly.

**135. The answer is b.** (*Mengel, pp 36-43.*) This case describes the typical presentation and physical examination findings of head lice, including the typical erythematous papular rash and “nits” on the hair follicles. Treatment options include permethrin and lindane. The preferred treatment is permethrin 1%, permethrin 5% is a second option, and lindane 1% is a third option. If treatment failure occurs, a second-line medication is 0.5% malathion lotion. Extermination would be appropriate for flea infestation, not for head lice. Oral ivermectin is effective for scabies, not for head lice, but is not approved by the US FDA.

**136. The answer is d.** (*Mengel, pp 36-43.*) This case describes the classic distribution of scabies. *Sarcoptes scabiei* burrow into intertriginous areas, wrists, or areas where clothing is tight next to the skin. The lesions of chigger bites are similar, but bites are typically found in a linear pattern over wrists, ankles, and legs. Bedbugs typically infest unclothed areas—the neck, hands, and face. Fleas typically bite the lower extremities, and lesions from body lice would not follow the pattern described.

**137. The answer is a.** (*Mengel, pp 36-43.*) Insect bites are typically pruritic erythematous papules or vesicles and are sometimes difficult to differentiate.

Location and distribution are helpful differentiators. Flea bites often occur in clusters, and are typically on the lower extremities, as described in this question. Bedbug bites are typically on the hands, face, and neck. Spider bites are generally not in clusters. Scabies are generally found in where clothing is tight against skin (belt line, wrists) or where skin touches skin (in between fingers). The itching from lice generally begin approximately 2 to 3 weeks after infestation, and may not limit distribution to the lower extremities.

**138. The answer is a.** (*Mengel, pp 36-43.*) After a cat bite to the hand, hospitalization is indicated unless it is very superficial and does not appear to be infected. If the bite involves the tendon, joint capsule, or bone, hospitalization is also indicated. Outpatient antibiotic therapy with amoxicillin/clavulanic acid is the treatment of choice if the patient is not hospitalized (5 days for prevention, 10 days for treatment). Clindamycin with a fluoroquinolone can be used if a patient is allergic to penicillin. Bite wounds on the hands should never be closed primarily.

**139. The answer is b.** (*Bope, pp 798-800.*) Typical local reactions to stings include swelling, erythema, and pain at and around the site of the sting. In general, they resolve quickly and minimal analgesia is all that is necessary. Large local reactions include extended areas of swelling that last several days. They are not allergic in origin and carry a minimal risk of anaphylaxis upon reexposure. Toxic systemic reactions are associated with nausea, vomiting, headache, vertigo, syncope, convulsions, and fever. Pruritis, erythema, and urticaria are less common. Persons who have a toxic reaction are at risk for anaphylaxis with subsequent stings. The reaction described in the above question is not anaphylactic in nature.

**140. The answer is a.** (*Mengel, pp 44-48.*) Gynecomastia is a benign enlargement of the male breast. It may be asymptomatic or painful, bilateral, or unilateral. It commonly occurs around the time of puberty, and if so, requires only a history, physical, examination, and reassurance if there are no abnormalities found. Most cases resolve within 1 year. Outside the pubertal period, assessment of hepatic, renal, and thyroid functions may help uncover a cause. Sex hormones are only tested if progressive enlargement is noted.

**141. The answer is c.** (*Mengel, pp 44-48.*) Fibrocystic changes are the most common benign condition of the breast. Cysts may range in size from 1 mm to more than 1 cm in size. Fibroadenomas are usually rubbery,



smooth, well-circumscribed, nontender, and freely mobile. Mammograms are not necessary for women younger than 30 years of age, as they are less sensitive in younger women with denser breast tissue. Mastitis generally occurs with nursing, and is characterized by inflammation, edema, and erythema in areas of the breast.

**142. The answer is d.** (*Mengel, pp 44-48.*) Up to 15% of breast cancers are mammographically silent. Therefore, a palpable mass deserves further workup, even if the mammogram is negative. Workup may include an ultrasound to determine if the mass is cystic or solid, and possible biopsy. Aspiration of the mass may be appropriate, but biopsy is still necessary if the mass is palpable after aspiration, if the fluid is bloody, or if the mass reappears within 1 month. The characteristics of the fluid otherwise do not dictate workup. Genetic testing is of no value in the workup of a breast mass, but can be considered based on family history, and under the direction of an experienced genetic counselor.

**143. The answer is e.** (*Mengel, pp 44-48.*) Patients with mastitis should be encouraged to continue nursing, and should be started on an antibiotic that covers streptococcal and staphylococcal infections. Reducing caffeine and methylxanthines, or using evening primrose oil may decrease symptoms of fibrocystic breast disease, but has no impact on mastitis. Applying heat may help symptoms, but ice will not have the desired effect.

**144. The answer is a.** (*Mengel, pp 44-48.*) Spontaneous, unilateral discharge is most suspicious for breast cancer. The characteristics of the discharge cannot be used to distinguish benign versus malignant causes; however, bloody, serous, serosanguineous, or watery discharge deserves a workup.

**145. The answer is a.** (*Mengel, pp 44-48.*) The degree of abnormality seen on a mammogram is classified using the breast imaging reporting and data system (BI-RADS). BI-RADS classification 0 means that the test was incomplete, and additional testing should be conducted as soon as possible. BI-RADS 1 and 2 mean that the mammogram is benign, and routine screening can be conducted at usual intervals. BI-RADS 3 indicates that the lesion is probably benign, but that diagnostic mammogram should be performed in 6 months. BI-RADS 4 and 5 are suspicious for, and highly suggestive of, cancer (respectively) and that tissue diagnosis is needed.

**146. The answer is d.** (Mengel, pp 48-58.) Hand cellulitis often follows puncture wounds, and cat bites may often produce infection with *P multocida*. Most skin infections are due to *S aureus* or *S pyogenes*. *Clostridium perfringens* may produce gas, and should be considered as a cause for cellulitis that can lead to gangrene, especially if crepitus is found on clinical examination. *Haemophilus influenzae* sometimes infects the skin of younger children.

**147. The answer is a.** (Usatine, pp 553-556.) Tinea infections are common, and may be spread by close person-to-person contact (as in school wrestling). The classic tinea lesion is well-demarcated and annular with central clearing, erythema, and scaling of the periphery. This can often be confused with eczema or a bacterial skin infection, but by scraping the lesion and visualizing hyphae with microscopic examination, the diagnosis of tinea can be confirmed. Tinea cruris occurs in the groin, not on the thigh; pityriasis rosea has a different classic appearance.

**148. The answer is a.** (McPhee, pp 28-30.) When someone presents to the office complaining of chest pain, the history is invaluable in helping determine if the pain is due to a life-threatening cause (myocardial infarction, pulmonary embolism, aortic dissection, or tension pneumothorax, to name a few). The likelihood ratios for the clinical features associated with acute myocardial infarction follow:

- Chest pain radiating to the left arm: 2.3
- Chest pain radiating to the right arm: 2.9
- Chest pain associated with nausea or vomiting: 1.9
- Chest pain associated with diaphoresis: 2.0
- Pleuritic chest pain: 0.2

Sharp or stabbing pain (rather than dull, aching, a feeling of pressure, tightness or squeezing) and positional chest pain also decrease the likelihood that the pain is ischemic.

**149. The answer is a.** (McPhee, pp 28-30.) Unless a competing diagnosis can be confirmed, an ECG is warranted in the initial evaluation of most patients with acute chest pain. The likelihood ratios for ECG features associated with acute myocardial infarction are listed below.

- Any ST-segment elevation: 11.2
- Any ST-segment depression: 3.2

- Any Q wave: 3.9
- Any conduction defect: 2.7
- New conduction defect: 6.3

ST-segment elevation is the ECG finding that is the strongest predictor of acute myocardial infarction. However, it is important to remember that up to 20% of patients with acute coronary syndrome can have a normal ECG.

**150. The answer is c.** (*Mengel, pp 58-65.*) The ECG shown has no acute changes, but is suggestive of left ventricular hypertrophy. Her symptoms are quite suggestive of angina. Since she is currently asymptomatic and her ECG shows nothing acute, transfer to the hospital is unwarranted. The best approach would include patient education for warning signs, and some sort of stress testing. For women in her age group, stress ECGs are often false positive, so a stress test with imaging is most appropriate.

**151. The answer is d.** (*McPhee, 325-339.*) The physical examination findings described, including the murmur and carotid pulse findings (pulsus parvus et tardus), are very suggestive of aortic stenosis. Historically, angina frequently occurs in aortic stenosis due to underperfusion of the endocardium. Syncope is typically exertional and is a late finding. While syncope associated with chest pain may be seen in aortic dissection, a PE, LVH, or mitral valve prolapse, none of these would be likely to have the classic physical examination findings described.

**152. The answer is a.** (*McPhee, 342-349.*) Based on the patient's symptoms, angina seems to be a likely diagnosis. Exercise ECG testing is the most commonly used noninvasive procedure for evaluating whether the chest pain is due to angina. Stress testing is often combined with imaging studies, but in low-risk patients without baseline ECG abnormalities, exercise ECG remains the recommended initial procedure because of its low cost and convenience. Myocardial stress imaging (scintigraphy or echocardiography) is indicated if the resting ECG makes an exercise ECG difficult to interpret, for confirmation of the results of the exercise ECG, to localize the region of ischemia, to distinguish ischemic from infarcted myocardium, or to assess the completeness of revascularization following an intervention. The electron beam CT can quantify coronary artery calcification, but is not helpful to evaluate angina.

**153. The answer is a.** (*Mengel, pp 71-76.*) Constipation may mean different things to different patients, but is generally defined as infrequent bowel movements of straining to achieve a bowel movement. A thorough history is generally all that is needed to rule out secondary causes and define the underlying process. Laboratory testing is only indicated if alarm symptoms are present, if a specific medical disorder is likely given history and physical, or if the person does not respond to initial treatment. Alarm symptoms include hematochezia, family history of colon cancer, family history of inflammatory bowel disease, positive fecal occult blood test, weight loss, or new onset of constipation in people older than 50 years. In some instances, TSH, serum electrolytes, calcium, or complete blood count may be indicated, but in this case, they would not be necessary and an initial trial of therapy would be indicated.

**154. The answer is a.** (*Mengel, pp 71-76.*) Chronic constipation is a common problem, and pharmacologic treatments may be employed when nonpharmacologic measures fail. Bulk-forming agents (like psyllium) are a well-tolerated alternative and are not a problem if taken regularly. Magnesium hydroxide works well, but chronic use may cause hypermagnesemia. Stimulant laxatives like bisacodyl work well in acute settings, but research is not available to support their routine use for the treatment of chronic constipation. Enemas are usually the treatment of choice for impaction, but not chronic constipation. Lubiprostone is beneficial in the treatment of adults with chronic constipation, but not as a first-line. It should be reserved for those refractory to other treatments.

**155. The answer is a.** (*Mengel, pp 76-87.*) The most common causes of a chronic cough are asthma, postnasal drainage, smoking, and GERD. Given that he did not respond to a bronchodilator, asthma is an unlikely diagnosis. Pertussis would have likely responded to azithromycin, and is therefore not likely to be the correct answer in this case. His sore throat, combined with symptoms that are worse when lying down, or with ingestion of caffeine or alcohol make GERD the most likely diagnosis. Medication side effects should be considered, with the ACE inhibitors most likely to cause a cough. The patient described is not on this class of medication. If the cough were acute, the differential diagnosis would include asthma exacerbation, acute bronchitis, aspiration, exposure to irritants (cigarette smoke, pollutants), allergic rhinitis, uncomplicated pneumonia, sinusitis with postnasal drip, and viral upper respiratory infection. Of these usual causes, viral upper respiratory

infection is by far the most common cause. Viral upper respiratory infection is the most frequent illness in humans with a prevalence of up to 35%.

**156. The answer is b.** (*Mengel, pp 76-87.*) Because the patient reports a productive cough for at least 3 months of the year for at least 2 consecutive years, she meets the criteria for chronic bronchitis. This is the most common cause of chronic cough in smokers. While it is true that her smoking may cause irritation of her airways, it wouldn't explain why the cough isn't present year-round (since she continues to smoke throughout the year). The most common cause of chronic cough in nonsmokers is postnasal drainage, but since this patient has a significant smoking history, chronic bronchitis is more likely. Lung cancers rarely present solely with cough. Associated signs and symptoms include weight loss and hemoptysis. Asthma is less likely to present with a productive cough.

**157. The answer is e.** (*Mengel, pp 76-87.*) The Centers for Disease Control and Prevention published guidelines for treating acute bronchitis. The guidelines state that antibiotics are not indicated for uncomplicated acute bronchitis, regardless of the duration of the cough. Antibiotics should be reserved for patients with significant chronic obstructive pulmonary disease (COPD) and CHF, those who are very ill-appearing, or the elderly. This patient likely has hyperresponsive airways, sometimes called a postbronchitic cough. In this case, the best treatment would be an inhaled steroid or oral steroid taper. Anti-inflammatory medications and nasal steroids are not effective.

**158. The answer is d.** (*Mengel, pp 76-87.*) Antibiotics do not alter the course of pertussis unless initiated early in the illness. However, antibiotics do prevent transmission and decrease the need for respiratory isolation from 4 weeks to 1 week and are therefore recommended. The first-line antibiotic choice is either erythromycin for 14 days, or azithromycin for 5 days. Amoxicillin and amoxicillin/clavulanate are not effective.

**159. The answer is a.** (*Mengel, pp 112-123.*) Acute diarrhea is defined as an increased number or decreased consistency of stool lasting 14 days or less. Most acute diarrhea is due to infection and usually occurs after the ingestion of contaminated food or water, or direct person-to-person contact. Viral infections account for 70% to 80% of acute infectious diarrhea, with rotavirus being the most frequent cause. Enteric adenoviruses are the

second most common type. Rotavirus occurs in the winter months, and most cases occur between the ages of 3 months and 2 years. Contaminated water, salads, or shellfish may transmit Norwalk virus. Giardiasis is less common in the general population, but may be more prevalent in children in daycare centers. *Salmonella* is generally due to raw or undercooked meat, and enterotoxigenic *E coli* is the most common cause of traveler's diarrhea.

**160. The answer is b.** (*Mengel, pp 112-123.*) Approximately one-third of travelers to underdeveloped countries will develop travelers' diarrhea. Of those, 40% will alter their plans because of the symptoms, 20% will be bed-bound for at least 1 day, and 1% will require hospitalization. Most cases of travelers' diarrhea are due to enterotoxigenic *E coli*. The antibiotic of choice for travelers' diarrhea is a fluoroquinolone (ciprofloxacin, ofloxacin, or norfloxacin) with trimethoprim/sulfamethoxazole or azithromycin being acceptable alternatives. The other antibiotics listed may be useful for other causes of diarrhea, but are not indicated for travelers' diarrhea.

**161. The answer is e.** (*Mengel, pp 112-123.*) For acute viral diarrhea, adults should be encouraged to eat potatoes, rice, wheat, noodles, crackers, bananas, yogurt, boiled vegetables, and soup. Dairy products, alcohol, and caffeine should be avoided. Oral rehydrating solutions can be used if vomiting is a problem, and fasting is not indicated. Some fruit juices can exacerbate diarrhea.

**162. The answer is d.** (*Mengel, pp 123-126.*) "Dizziness" is a subjective symptom, often meaning different things to different people. It is imperative that this complaint be better characterized to develop an appropriate differential diagnosis and treatment plan. Vertigo is a rotational sensation, in which the room spins around the patient. Orthostasis refers to lightheadedness upon arising, common with orthostatic hypotension. Presyncope is a feeling of impending faint. Disequilibrium is a sensation of unsteadiness, or a loss of balance. If asked whether the problem is in the head or the feet, patients often respond by saying the problem is in the feet. Lightheadedness is often vaguely described as a "floating" sensation.

**163. The answer is c.** (*Mengel, pp 123-126.*) Acoustic neuroma typically presents with unilateral tinnitus and hearing loss. The symptoms are constant and slowly progressive. With continued tumor growth, symptoms of vertigo, facial weakness, and ataxia can occur. Vestibular neuronitis presents

with an acute onset of severe vertigo lasting several days, with symptoms improving over several weeks. Benign positional vertigo typically involves symptoms with position changes only. Meniere disease presents with discrete attacks of vertigo lasting for several hours, associated with nausea and vomiting, hearing loss, and tinnitus. A cerebellar tumor would typically present with dysequilibrium as opposed to tinnitus.

**164. The answer is a.** (*Mengel, pp 123-126.*) The Dix-Hallpike maneuver, described in the question, is often useful to distinguish central from peripheral causes of vertigo. With a peripheral cause of vertigo, the latency time for the onset of symptoms of vertigo or nystagmus is 3 to 10 seconds, the symptoms are severe, and the direction of the nystagmus is fixed. In addition, repeating the maneuver lessens the symptoms. With a central cause of vertigo, there is no latency to onset of symptoms, no lessening of symptoms with repeat maneuvers, the direction of the nystagmus changes, and the symptoms are of mild intensity. Of the above answers, all are peripheral causes of vertigo, except the correct answer, stroke.

**165. The answer is b.** (*Mengel, pp 123-126.*) Once diagnosed with a peripheral vestibular disorder, antihistamines are the first-line therapy for symptomatic relief. They suppress the vestibular end-organ receptors and inhibit activation of the vagal response. Meclizine (Antivert), 25 mg orally every 4 to 6 hours and diphenhydramine (Benadryl), 50 mg orally every 4 to 6 hours are commonly recommended choices. Antiemetics may be used if nausea and vomiting are prominent symptoms. Benzodiazepines may be helpful in symptom reduction, but are usually second-line agents. NSAIDs and antibiotics are not helpful.

**166. The answer is c.** (*Mengel, pp 135-140.*) Those at risk for obstructive lung disease include pediatric patients (asthma, bronchitis, bronchiolitis), adults with asthma, and adults with chronic cigarette smoking. Dyspnea due to restrictive lung disease is more likely with occupational exposures (for farmers, cotton dust, grain dust, and hay mold), and in those with severe scoliosis, the morbidly obese, and the pregnant patients.

**167. The answer is c.** (*Mengel, pp 135-140.*) The patient is presenting with signs and symptoms of CHF. These include abnormal heart sounds (a murmur or an additional heart sound), cardiomegaly, JVD, basilar rales, and dependent edema. Bronchodilators would be appropriate for asthma

or bronchitis. Antibiotics may be appropriate for pneumonia. Steroids would be helpful with an asthma or COPD exacerbation. Anticoagulation may be appropriate for deep venous thrombosis(DVT).

**168. The answer is b.** (*Mengel, pp 135-140.*) Asthma in children is characterized by recurrent episodes of wheezing. Bronchiolitis and pneumonia may also cause wheezing, but would be less likely to be recurrent. Congenital heart disease can also cause dyspnea and even cyanosis with exertion, but are less likely to cause wheezing.

**169. The answer is a.** (*Mengel, pp 135-140.*) B-type natriuretic peptide evaluates for the presence of CHF. Studies indicate that a value less than 80 pg/mL has a high (99%) negative predicative value and helps rule out CHF.

**170. The answer is e.** (*Mengel, pp 135-140.*) A D-dimer test is useful in determining the risk for a DVT or PE. A low result has a high negative predictive value for the presence of thrombus. If the result were high, a confirmatory test would be appropriate. A spiral CT scan has become a standard validated test. A V/Q scan, often used in the past, can be used when a spiral CT is unavailable, but is often indeterminate. A pulmonary angiogram is the gold standard. Doppler flow studies are used to verify a DVT. If positive, a PE can be assumed in the correct clinical setting.

**171. The answer is d.** (*Mengel, pp 135-140.*) Many studies have shown that opioids relieve dyspnea in patients with cancer, but the mechanism is unknown. Bronchodilators are better in the setting of COPD and asthma, as are steroids. Anxiolytics help, but seem to relieve the anxiety associated with dyspnea more than the dyspnea itself. Pulmonary rehabilitation would be an inappropriate step in a dying patient.

**172. The answer is a.** (*Mengel, pp 140-145.*) A recent meta-analysis found that four factors correlate significantly with a diagnosis of acute bacterial cystitis. They are frequency, hematuria, dysuria, and back pain. In addition, four factors decrease the likelihood of UTI (absent dysuria, absent back pain, history of vaginal discharge, and history of vaginal irritation). Women with any combination of the positive and negative symptoms have a more than 90% probability of a UTI. Urethritis is more likely with a gradual onset. Patients with pyelonephritis often have fever. Interstitial cystitis tends to



be more chronic in nature and is generally not associated with back pain. Vulvovaginitis is a common cause of dysuria, but is associated with vaginal irritation or discharge.

**173. The answer is d.** (*Mengel, pp 140-145.*) Four factors decrease the likelihood of a UTI. These include absent dysuria, absent back pain, history of vaginal discharge, and history of vaginal irritation. The other things listed do not decrease the likelihood of a UTI.

**174. The answer is a.** (*Mengel, pp 140-145.*) Urine culture is indicated when acute bacterial cystitis is suspected, but the urinalysis leaves the diagnosis in question. Therefore, in the setting of classic symptoms but a negative dipstick or microscopic evaluation, a culture will confirm the diagnosis. In the other cases, either the urine dipstick or microscopic evaluation confirms the clinical suspicion and culture is not indicated.

**175. The answer is d.** (*Mengel, pp 140-145.*) In 85% of women with recurrent UTIs, symptoms develop within 24 hours of sexual intercourse. If measures like voiding after intercourse, acidification of the urine, and discontinuing diaphragm do not work, prophylaxis is indicated for women with frequent infections. Single-dose postcoital antibiotic use is often helpful. If that does not decrease infections, daily single-dose antibiotic prophylaxis may be appropriate for 3 to 6 months. If symptoms reoccur after discontinuation of daily prophylaxis, it may need to continue for 1 to 2 years.

**176. The answer is b.** (*Mengel, pp 140-145.*) Dysuria without pyuria is common. In the postmenopausal years, atrophy is a usual cause. In younger women, a careful history can reveal a bladder irritant (caffeine and acidic foods are common irritants). When hematuria is present, interstitial cystitis should be suspected. Interstitial cystitis is generally diagnosed through cystoscopy, based on the presence of ulcerations and fissures in the bladder mucosa and the absence of bladder tumors. Urodynamic studies often demonstrate a small bladder capacity, with urge to void with as little as 150 mL of fluid in the bladder.

**177. The answer is b.** (*Mengel, pp 140-145.*) The American College of Obstetrics and Gynecology recommends treating asymptomatic bacteriuria in pregnancy, as 20% to 35% of the cases eventually develop into overt

UTIs. In the other cases above, treatment of asymptomatic bacteriuria is not indicated, as it has not been shown to decrease morbidity and may increase the likelihood of developing resistant microorganisms.

**178. The answer is e.** (*Mengel, pp 413-420.*) In men with urinary symptoms and a normal urinary tract, cystitis and pyelonephritis are uncommon. Urethritis would be unlikely to cause this systemic illness. The patient described above has acute bacterial prostatitis. Acute prostatitis is most commonly seen in 30- to 50-year-old men, and symptoms include frequency, urgency, and back pain. The patient generally appears acutely ill, and has pyuria. The prostate examination would reveal a boggy, tender, and warm prostate.

**179. The answer is b.** (*Mengel, pp 145-153.*) The patient has temporomandibular joint dysfunction, a common cause of referred otalgia. First-line therapies include treatment with NSAIDs, heat, a mechanical soft diet, and referral to the dentist if there is no improvement in 3 to 4 weeks. Antibiotic therapy is not indicated. Obtaining an MRI would not add value to the diagnosis or treatment plan at this stage. An ESR may be elevated in temporal arteritis, another cause of referred ear pain, but would not be likely to be useful in this setting.

**180. The answer is d.** (*Mengel, pp 145-153; South-Paul, pp 41-65.*) A red-ened tympanic membrane, by itself, is not a sufficient finding to diagnose acute otitis media. It may be due to increased intravascular pressure associated with crying. More reliable findings include an opaque tympanic membrane (indicating a purulent effusion), a bulging tympanic membrane, and impaired tympanic membrane mobility. When all three of those characteristics are present, the positive predictive value is near 90%. Purulent discharge in the ear canal may indicate a tympanic membrane perforation, and in the face of an otherwise normal canal is more indicative of acute otitis media than otitis externa.

**181. The answer is a.** (*Mengel, pp 145-153.*) Effusions may take up to 3 months to resolve. Antibiotics are not indicated for persistent effusions in the absence of acute otitis media. Effusions persisting beyond 3 months require evaluation by an otolaryngologist. Decongestants or antihistamines have never been documented to help effusions, but may be symptomatically helpful.

**182. The answer is c.** (*Mengel, pp 145-153.*) The picture represents acute otitis media. The child should be treated with a first-line antibiotic. In most cases, amoxicillin is used as first-line therapy. However, in patients with severe illness (moderate to severe otalgia and/or fever  $>102^{\circ}\text{F}$ ), therapy should be initiated with high-dose amoxicillin-clavulanate (90 mg/kg/d of amoxicillin in 2 divided doses). Azithromycin is often used as a first-line choice in 1-day, 3-day, or 5-day doses, but it should be reserved as a second-line therapy.

**183. The answer is c.** (*McPhee, pp 200-201.*) Fundamental to the treatment of external otitis is protection from additional moisture and avoidance of further mechanical injury from scratching. Otic drops containing antibiotics and corticosteroids are very effective. Oral antibiotics or steroids would be reserved for recalcitrant cases, as the process is generally localized, not systemic, and demonstrates a good response to topical therapy. Any case of persistent otitis externa in an immunocompromised or diabetic individual should be referred for specialty evaluation.

**184. The answer is c.** (*Mengel, pp 153-158.*) There are many medications known to cause peripheral edema as a side effect. Antihypertensives, such as calcium channel blockers are well known to cause this, but direct vasodilators,  $\beta$ -blockers, centrally acting agents, and antisympathetics also can cause edema. Of the diabetic medications, insulin sensitizers, such as rosiglitazone often cause edema. Hormones, corticosteroids, and NSAIDs also cause problems. SSRIs like fluoxetine do not commonly cause this symptom. Neither do ACE inhibitors like lisinopril, or thiazide diuretics.

**185. The answer is c.** (*Mengel, pp 153-158.*) In the workup of edema, the first thing to note is if the edema is bilateral or unilateral. Bilateral edema associated with signs and symptoms of CHF (dyspnea, rales, or JVD) would necessitate a chest x-ray to rule in the diagnosis, followed by an echocardiogram. If ascites is present, liver function studies are needed. If these are absent, the clinician should check an urinalysis. If the sediment is abnormal, nephritic syndrome or acute tubular necrosis (ATN) is the likely diagnosis.

**186. The answer is c.** (*Mengel, pp 153-158.*) In the workup of edema, the first thing to note is if the edema is bilateral or unilateral. Bilateral edema associated with dyspnea, rales, or JVD would necessitate an evaluation for

CHF, including an echocardiogram. If ascites is present (indicated by the positive fluid wave), liver function studies are needed. The edema associated with hypothyroidism would not cause ascites. A lower extremity Doppler evaluation would be indicated for unilateral edema. A urinalysis may be helpful in the setting of renal failure, but with ascites, liver tests would be more valuable.

**187. The answer is b.** (*Mengel, pp 153-158.*) In the workup of edema, the first thing to note is if the edema is bilateral or unilateral. Unilateral edema not associated with trauma or signs of infection requires a Doppler ultrasound to evaluate for the presence of DVT. The CT PE scan or the V/Q scan would not be indicated unless there was suspicion of a PE.

**188. The answer is e.** (*Mengel, pp 153-158.*) Unilateral edema is suspicious for a DVT. However, if there is a history of recent trauma, or evidence of inflammation, a Doppler ultrasound is usually not necessary. Signs of inflammation including erythema point toward cellulitis as a diagnosis. Cellulitis should be treated with antibiotics. If the patient had varicose veins as a diagnosis, a vascular surgery referral may be indicated. If CHF were likely, diuretics would help. Venous insufficiency would warrant treatment with compression stockings, and anticoagulation would be the treatment of choice in the event of a DVT.

**189. The answer is c.** (*Mengel, pp 153-158.*) In patients with chronic venous insufficiency, knee-length elastic stockings can aid venous return. Additional treatment options include leg elevation throughout the day. Prolonged standing should be limited. Unilateral edema usually does not respond to diuresis, sodium restriction, or an ACE inhibitor. The case described above would be unlikely to be related to a DVT because of its chronic nature.

**190. The answer is c.** (*Mengel, pp 158-162.*) It is important to classify childhood incontinence correctly, as treatment will vary depending on type. The term, "enuresis" refers to repeated spontaneous nocturnal voiding of urine into the bed or clothes at least twice a week for three consecutive months in a child who is at least 5 years old. Primary monosymptomatic enuresis is bed-wetting without a history of nocturnal continence and is unassociated with other symptoms. Secondary monosymptomatic enuresis is recurrence of bed-wetting after at least 6 months of nocturnal continence.

Non-monosymptomatic enuresis is bed-wetting associated with urinary urgency, frequency, straining, pain, chronic constipation, or encopresis. Children who have involuntary or intentional urination into clothing while awake or asleep are said to have daytime incontinence and enuresis. The term diurnal enuresis is considered obsolete. There is no classification called "primary intentional enuresis."

**191. The answer is a.** (*Mengel, pp 158-162.*) While the cause of nocturnal enuresis is unknown, it is felt to be due to decreased production of nocturnal antidiuretic hormone. It is not likely due to deep sleep, though most enuretic patients do not spontaneously awaken after bed wetting. It is associated with a maturational delay, and statistically 25% of 5-year-olds are enuretic. The numbers decrease about 15% per year. Forty to fifty percent of bedwetters are female. Family history is very important. If one parent was enuretic, there is a 40% likelihood that the child will be. If both parents were bed wetters, there is a 70% risk that the child will be. Interestingly, the child will usually stop around the same time that the parent did. Very few patients have an organic cause.

**192. The answer is b.** (*Mengel, pp 158-162.*) Enuresis alarms have been shown to be an effective treatment for nocturnal enuresis. While medications may be more effective in the short term, there is a high relapse rate when medications are discontinued. The alarms need to be used appropriately, with parental involvement in order to be effective. Frequent nighttime wakening may be effective, but compliance is a barrier to effectiveness. DDAVP can also be effective, but relapse rate is high once the medication is discontinued. It is no longer considered acceptable for continuous use and should be reserved for overnight visits or summer camp. Tricyclics have a lower initial cure rate and a high relapse rate. They can also be lethal, if overdosed and are therefore not used for this purpose. Oxybutynin has a high relapse rate and has not been proven to be efficacious when compared with placebo.

**193. The answer is a.** (*Bope, pp 707-709; Mengel, pp 158-162.*) In the child with monosymptomatic nocturnal enuresis, no further evaluation is needed, other than a thorough voiding history, physical examination, urinalysis, and potentially a post-void residual. In children, the normal bladder capacity is the age of the child, plus 2, in ounces. For example, in a 5 year-old, the bladder capacity would be 7 ounces (5 plus 2). Normal post-void residual

is less than 10% of bladder capacity. X-rays of the lumbar and sacral spine are indicated if there is suspicion of spina bifida occulta, and renal ultrasound/VCUG are indicated if there are suspected anatomic abnormalities that would lead to enuresis.

**194. The answer is a.** (*Mengel, pp 158-162.*) Moisture-sensitive alarms can be a very successful behavioral treatment for nocturnal enuresis. The first drops of urine complete a circuit, activating an alarm that will wake the child (and the parents). The parents then help the child complete voiding in the toilet. Over time, a conditioned response develops, and the child awakens voluntarily with the sensation of a full bladder. There is no gender difference in success rates, and with appropriate use and parent involvement, success rates are between 75% and 84%. It may take weeks or months to be successful, and requires a sizeable commitment from the parents and child involved. The child should not take responsibility for this treatment, because without parental involvement, success rates drop.

**195. The answer is a.** (*South-Paul, pp 13-20.*) The growth chart raises concern for failure to thrive. While there are several definitions, concern should be raised when a child drops more than two percentile brackets on a growth curve and does not maintain at that area. In the United States, the vast majority of failure to thrive is secondary to inadequate nutrition and a thorough dietary history is most likely to reveal the cause. Albumin has a long half-life and is a poor indicator of recent undernutrition. Prealbumin is decreased in acute inflammation and undernutrition and is therefore insensitive. Organic disease, including hypothyroidism, is found in less than 10% of cases of failure to thrive. IgA levels are sensitive to undernutrition and would be decreased in failure to thrive.

**196. The answer is d.** (*South-Paul, pp 13-20.*) In a child with failure to thrive diarrhea and recurrent respiratory infections, cystic fibrosis must be considered, and a sweat chloride test should be ordered. The other tests may be indicated in the workup of failure to thrive, but only with a reasonable degree of clinical suspicion. With the history given, the most useful test would be the sweat chloride test.

**197. The answer is b.** (*Mengel, pp 162-167.*) The infant in this question is most likely to have esophageal reflux contributing to his failure to thrive. The history in this case often will be positive for “wet burps,” and the child

will frequently have emesis or cough with eating and occasional wheezing. The best laboratory test to diagnose this in children is an esophageal pH probe. If the history were positive for diarrhea or melena, inflammatory bowel disease may be considered, and a hemoccult test would be necessary. If the history were positive for diarrhea, abdominal pain, and foul-smelling stools, lactose intolerance may be considered, and a lactose tolerance test would be a good choice. If pyloric stenosis were being considered, the patient would likely have projectile vomiting, abdominal distension, and perhaps a palpable mass. In that case, an ultrasound would be helpful.

**198. The answer is a.** (*Mengel, pp 162-167.*) The infant in this question has failure to thrive and is showing signs of withdrawal with minimal smiling and vocalizations. In addition, his mother seems ignorant of these cues. In this case, the cause is likely related to infant behavior and/or ineffective maternal/child bonding, and no testing would be necessary. A complete blood count would be helpful if one were worried about nutritional deficiencies. Sweat chloride would diagnose cystic fibrosis, but this child has not had a history of frequent infections. A head CT or MRI would be useful in multiple settings if neurologic disorders were being considered. Without supportive physical examination findings, this would be less likely. Chromosomal testing would not be necessary without more significant findings and/or dysmorphism.

**199. The answer is a.** (*South-Paul, pp 13-20.*) Children with familial short stature have a growth curve that shows simultaneous changes in height and weight. In failure to thrive and constitutional growth delay, weight decreases first, then height. In hypothyroidism, height velocity slows first and may plateau before weight changes. In breast-fed infants, weight decreases relative to peers after 4 to 6 months, but catches up after 12 months.

**200. The answer is e.** (*South-Paul, pp 13-20.*) Hospital admission is indicated for failure to thrive, in the face of hypotension and bradycardia. These are signs of severe malnutrition. Other interventions may be appropriate, but with vital sign abnormalities, it is important to admit the patient. Patients like this are generally not neglected, especially since he has been seen all along for well-child checks.

**201. The answer is d.** (*Wolff, pp 557-560.*) Mononucleosis is often mistaken for streptococcal pharyngitis. Both have symptoms of sore throat,

fatigue, fever, and adenopathy. If patients with mononucleosis are given ampicillin (and other penicillin derivatives), up to 100% may develop the rash described above, sometimes confused as an allergic reaction to penicillin. The rash of scarlet fever is more confluent, and has a sandpaper-like texture. The rash of measles starts as erythematous flat papules, first appearing on the face and neck, then spreading to the arms and trunk in 2 to 3 days.

**202. The answer is c.** (*Mengel, pp 168-173.*) Fatigue is a subjective complaint, and is the seventh most common symptom in primary care, accounting for more than 10 million office visits annually. Fatigue lasting 1 month or less is likely the result of a physical cause (infections, endocrine imbalances, cardiovascular disease, anemia, or medications), while fatigue lasting 3 months or more is more likely to be related to psychologic factors (depression, anxiety, stress, or adjustment reactions). Physiologic fatigue is because of overwork, lack of sleep, or a defined physical stressor like pregnancy. Chronic fatigue syndrome and chronic idiopathic fatigue are distinct diagnoses that both require more than 6 months of symptoms.

**203. The answer is a.** (*Mengel, pp 168-173.*) Depression is one of the most common diagnoses in patients presenting with fatigue, especially when denying weakness or hypersomnolence. Once the complaint is defined, the practitioner should screen for depression. Screening for sleep apnea, anemia, hypothyroidism, and pregnancy should occur if the depression screen is negative.

**204. The answer is b.** (*Mengel, pp 168-173.*) There are three general categories of fatigue: physiologic, physical, and psychologic. Physiologic fatigue is generally due to overwork, lack of sleep, or a defined physical stress, such as pregnancy. Physical fatigue is due to infections, endocrine imbalances, anemia, cardiovascular diseases, and more concerning causes like cancer. Psychologic fatigue is generally associated with stress, depression, anxiety, or adjustment reaction. While all types of fatigue can last for 6 months, the progressive nature of this patient's symptoms should lead one to look for a physical cause. Increased stress, overwork, and alcohol use generally do not point to a physical cause of stress.

**205. The answer is d.** (*Mengel, pp 168-173.*) The initial laboratory workup for an uncertain diagnosis of fatigue included a CBC, sedimentation rate,



urinalysis, chemistry panel, thyroid testing, pregnancy testing (for women of childbearing age), and age/gender appropriate cancer screening. In a 55-year-old African-American male, a prostate screen would be appropriate. Chest x-ray, ECG, HIV test, and a drug screen would be appropriate if the initial screen is negative.

**206. The answer is d.** (*Mengel, pp 196-199.*) The child in the question has signs and symptoms suggestive of intussusception. It is the second most common cause of significant lower GI bleeding in children and is caused by the involution of one bowel segment into another bowel segment. Meckel diverticulum is the most common cause of significant GI bleeding in children. It is a congenital abnormality that occurs in about 2% of the population, with a male-to-female ratio of 2:1. It occurs about 2 ft from the ileocecal valve and is usually about 2 in long. About 2% of cases have complications. These facts are often remembered as “the rule of 2s.” It is generally painless. Anal fissures, colitis, and juvenile polyposis generally do not cause significant bleeding.

**207. The answer is c.** (*Mengel, pp 196-199.*) Upper endoscopy is the best diagnostic testing option in the setting of an acute upper GI bleed. It can localize the source of bleeding, potentially allow therapeutic intervention, and allow for tissue diagnosis when necessary. Gastric lavage is less useful, and a barium study might interfere with subsequent intervention. Red cell scans are better to locate bleeding sources in the lower GI tract, and angiography may miss slower bleeds.

**208. The answer is d.** (*Bope, pp 526-530.*) Meckel diverticulum is the most common congenital abnormality of the GI tract, present in about 2% of the population. Most are asymptomatic, but a common presentation is painless large-volume intestinal hemorrhage. A Meckel diverticulum is often incidentally diagnosed at laparotomy. A noninvasive diagnostic modality is the technetium scan, often called the “Meckel scan.” The labeled tracer is picked up by the heterotopic gastric mucosa in the diverticulum. A Meckel diverticulum is located in the distal ileum and would not be identified by the other endoscopic procedures mentioned in the question.

**209. The answer is c.** (*Bope, pp 526-530.*) Approximately 5% to 15% of patients with colonic diverticulosis develop severe diverticular bleeding. While many believe it may be triggered by the ingestion of certain foods,

this has never been proven by studies. It is unusual to find the source of bleeding during colonoscopy. If colonoscopy does not localize the bleeding, a tagged RBC scan should be the next step, and will help guide segmental resection if necessary. A subtotal colectomy is only necessary for recurrent severe bleeding with no source identified.

**210. The answer is e.** (*Bope, pp 537-541.*) The condition described is a thrombosed external hemorrhoid. External hemorrhoids are defined as hemorrhoids arising distal to the dentate line. When they thrombose, they are associated with acute pain and are hard and nodular on physical examination. The excision can be safely done in the office with local anesthesia. It eliminates pain immediately and eliminates the risk of recurrence. Hydrocortisone would not be helpful. Rubber-band ligation and sclerotherapy should be reserved for internal hemorrhoids. Incision and drainage of the hemorrhoid increases the risk of recurrence and can lead to infection of the retained clot.

**211. The answer is a.** (*Bope, pp 537-541.*) An anal fissure is a split in the anoderm of the anal canal. It generally occurs after the passage of a hard bowel movement. Patients present with excruciating pain on defecation with blood found on the toilet paper. After the bowel movement, the patient may complain of an ache or spasm that resolves after a couple of hours. Thrombosed external hemorrhoids would generally be visible on examination. Internal hemorrhoids are generally not painful, unless they are thrombosed because of an unreducible prolapse. If that were the case, the pain would not resolve. A perianal abscess may not present with bleeding, but would likely be associated with systemic signs of infection.

**212. The answer is a.** (*South-Paul, pp 289-297.*) While many agents, including some anticonvulsants, have been used as prophylactic agents to prevent migraines,  $\beta$ -blockers are the most studied, and are effective. Verapamil is the only calcium channel blocker that studies show to have a prophylactic effect. There has been some interest in fluoxetine for prophylactic therapy, but more studies are needed. Ergotamines are used for abortive therapy.

**213. The answer is a.** (*South-Paul, pp 289-297.*) The goal of prophylactic migraine therapy is to reduce the frequency of headache by 50%. Of the antidepressants, the strongest evidence for efficacy involves amitriptyline. Therapy

begins with a low dose (10 mg at night) and can be titrated up to the most effective dose that does not cause prohibitive side effects (up to 150 mg). SSRIs, MAOIs, and other antidepressants have been variably studied, but the best evidence supports the use of amitriptyline, a tricyclic antidepressant.

**214. The answer is a.** (*South-Paul, pp 289-297.*) Warning signs include a headache that has its onset after the age of 50 years, a very sudden onset, increase in severity or frequency, with signs of systemic disease, focal neurologic symptoms (except those consistent with a visual aura typical for a known migraine sufferer), papilledema, or a headache after trauma. Migraines often occur in a consistent location, are severe and frequent, include a visual aura, and may be associated with severe nausea.

**215. The answer is c.** (*Mengel, pp 228-236.*) Abortive or acute therapy for migraines is appropriate monotherapy if attacks occur less than two to four times per month. The most effective approach will be tailored to the individual and his/her needs; however, an abortive medication with receptor-specific action (a triptan) should be the first choice if possible. Ergot alkaloids are a good alternative. If triptans or ergot alkaloids fail or are contraindicated, rescue medications (simple analgesics) may be tried. Although frequently used in emergency settings, narcotics are rarely needed in the treatment plan for migraine sufferers.

**216. The answer is b.** (*South-Paul, pp 289-297.*) Verapamil appears to have some migraine prophylactic effect, but there is no evidence that other calcium channel blockers have a similar effect. Other calcium channel blockers may be helpful in suppressing cluster headaches, but have not been shown to be helpful for migraines.

**217. The answer is d.** (*South-Paul, pp 289-297.*) The mainstay of therapy for cluster headaches is to provide relief from the acute attacks, then use therapy to suppress headaches during the symptomatic period. Nifedipine has been shown to be effective, as has prednisone, indomethacin, and lithium. However, the medication should not be given daily, just during the symptomatic period. Fluoxetine has not been shown to be beneficial, and ergotamine is generally only helpful in the acute stage—not for prophylaxis.

**218. The answer is c.** (*McPhee, pp 927-931.*) Cluster headaches characteristically develop rapidly, achieving peak intensity within 10 to 15 minutes.

Usually, the headaches are intensely painful and last for about 2 hours without treatment. The mainstay of treatment is oxygen. In general, oral medications are not helpful, including the oral serotonin antagonists. Subcutaneous or intranasal serotonin antagonists have been shown to be more efficacious. Intravenous or intramuscular ergotamine has been shown to be helpful as well.

**219. The answer is b.** (*South-Paul, pp 289-297.*) Tension-type headaches (TTH) have a formal definition, with positive and negative criteria for diagnosis, but many physicians diagnose this type of headache by exclusion (after ruling out more interesting or rare etiologies for headache). They are in fact, the most frequent of all headaches encountered in clinical practice. The episodes last from 30 minutes to several days, and headaches should occur less than 15 times per month. It requires at least two of the following characteristics:

Pressure/tightness

Bilateral

Mild to moderate

Not aggravated by activity

There is generally no nausea. Either photophobia or phonophobia may be present, but not both. If criteria for this classification of headache are met, a trial of NSAIDs may be appropriate, with follow-up if there is no improvement. Narcotics should be avoided, since the condition is generally chronic, and overuse is likely. Imaging would not be helpful or indicated at this stage.

**220. The answer is e.** (*Mengel, pp 243-248.*) Painless hematuria without other symptoms is the most common presentation of bladder carcinoma. Risk factors include being male, smoking, and working with aromatic amines that are often used in the dye, paint, aluminum, textile, and rubber industries. Acute prostatitis and UTIs are usually associated with dysuria, fever, and urinary frequency and urgency. Chronic prostatitis is associated with urinary symptoms as well. Stones are associated with pain.

**221. The answer is d.** (*Mengel, pp 243-248.*) Pseudohematuria can be derived from chemical agents, foods, or vaginal bleeding. Common foods that cause this include beets, blackberries, and certain food dyes. Medications that discolor the urine include chloroquine, metronidazole, phenytoin, rifampin, and sulfasalazine, among others.

**222. The answer is a.** (*Mengel, pp 243-248.*) In patients younger than 40 years with hematuria, but a normal IV pyelogram, urine culture and cytology, periodic monitoring, and reassurance are appropriate. In a patient older than 40 years, cystoscopy would be appropriate. A diagnosis of post-streptococcal glomerulonephritis would be unlikely in this age group, so an ASO titer would not be helpful, and a renal biopsy would not be needed if the creatinine is normal.

**223. The answer is e.** (*Mengel, pp 249-255.*) Drug- and alcohol-related sleep disturbances are common, and can take many forms. Some medications cause excessive somnolence, some cause nightmares or other problems that inhibit sleep, and others cause excessive wakefulness making it difficult to fall or stay asleep. Obesity is a risk factor for sleep apnea, but that generally does not cause inability to return to sleep after waking. Propranolol is known to cause nightmares, but not the problems described by this patient. Hydrochlorothiazide can cause nocturia that inhibits sleep, and naproxen is not known to interfere with sleep. Alcohol is known to cause excessive wakefulness, and often allows people to fall asleep, but interferes with the ability to stay asleep.

**224. The answer is d.** (*Mengel, pp 249-255.*) Good sleep hygiene is essential for treating insomnia. Important aspects of sleep hygiene include awakening at a regular hour, exercising daily (but not too close to bedtime), control the sleep environment, eat a light snack before bedtime (not a meal), limit or eliminate alcohol, caffeine and nicotine, go to bed when sleepy, use your bed for sleep and intimacy only (not for reading or watching television), get out of bed if you aren't asleep within 15 to 30 minutes, and others.

**225. The answer is c.** (*Mengel, pp 249-255.*) Pharmacologic agents may be used in select cases of transient sleep disorders unassociated with more serious problems. Before using any agents, it is important to make sure the patient maintains excellent sleep hygiene. The drugs of choice for transient sleep onset problems are zolpidem (Ambien) or eszopiclone (Lunesta). For sleep maintenance problems, zaleplon (Sonata) may be used. It has a shorter half-life and there can be taken in the middle of the evening. Melatonin has been shown to help with adjustments to the sleep-wake cycle (ie, jet lag, shift work). Benadryl can cause excessive somnolence, and may help with sleep onset, but not maintenance.

**226. The answer is c.** (*Bope, pp 548-553.*) Hepatitis A is the most commonly reported hepatitis virus. It is spread via the fecal-oral route, most commonly through the ingestion of contaminated food or water. Hepatitis A causes acute hepatitis only and never results in chronic hepatitis. Life-long immunity is expected for all patients that recover, therefore relapses are uncommon. Fecal shedding of the virus occurs early, and declines once jaundice develops. When patients are jaundiced, they are less infectious than during the prodrome. Symptoms of infection change with age. 90% of those infected before the age of 5 years are asymptomatic, but up to 80% of infected adults have symptoms.

**227. The answer is a.** (*Bope, pp 548-553.*) Transmission of hepatitis B may occur through the transfer of blood or body fluids, but can also occur perinatally (vertical transmission). If the virus is acquired early in life, the infection is silent, but up to 90% of those infected develop chronic disease. Those with a compromised immune system may also develop chronic disease easier than healthy patients. Healthy adults infected have spontaneous resolution more than 95% of the time. As with infection with hepatitis A, a small percentage of those infected will develop fulminant liver disease.

**228. The answer is c.** (*McPhee, pp 644-647.*) The HBsAg positivity in this case indicates either chronic infection or early infection. The negativity of the IgM anti-HBc rules out an early infection. The HBeAg is correlated with replication.

**229. The answer is e.** (*McPhee, pp 644-647.*) The positivity of the anti-HBs indicates either exposure with immunity, recovery phase, or vaccination. Because the IgG anti-HBc is negative, there is no evidence of past exposure or infection.

**230. The answer is a.** (*McPhee, pp 644-647.*) The HBsAg positivity in this case indicates either chronic infection or early infection. The positivity of the IgM anti-HBc indicates early infection, and is negative in chronic infection. If the patient were in the recovery phase, his HBsAg would be negative.

**231. The answer is d.** (*South-Paul, pp 462-472.*) Asymptomatic bacteruria is common in otherwise well elderly, and does not cause incontinence—whereas, a symptomatic infection may. Hyperglycemia can cause secondary incontinence because of polyuria, and continence can be restored by more

tightly controlling the patient's sugar. Diuretics also may cause secondary incontinence, and may need to be avoided unless necessary. Stool impaction is thought to be a causative factor in up to 10% of patients with incontinence, and disimpaction may restore continence. Atrophic vaginitis may also be causative, and treatment may improve the situation.

**232. The answer is c.** (*South-Paul, pp 462-472.*) Urge incontinence is the most common type of incontinence in the elderly. Due to detrusor hyperactivity, patients often complain of a strong urge followed by an involuntary loss of urine. Functional incontinence refers to a limitation that does not allow the patient to void in the bathroom (bed rest, paralysis, severe dementia) and does not generally relate to the urinary tract. Stress incontinence is the loss of urine associated with increased intra-abdominal pressure, and overflow incontinence is due to overdistention of the bladder. Senile incontinence is a fictional term.

**233. The answer is d.** (*South-Paul, pp 462-472.*) Stress incontinence is much more commonly seen in women than in men, and is most often caused by urethral hypermobility resulting from weakness of the pelvic floor musculature. Patients complain of involuntary loss of urine associated with increase in intra-abdominal pressure (when sneezing, coughing, laughing, or exercising). Functional incontinence refers to a limitation that does not allow the patient to void in the bathroom (bed rest, paralysis, severe dementia) and does not generally relate to the urinary tract. Urge incontinence is the loss of urine following a strong urge, and overflow incontinence is due to overdistention of the bladder. Senile incontinence is a fictional term.

**234. The answer is e.** (*South-Paul, pp 462-472.*) Overflow incontinence is primarily a loss of the ability to empty the bladder, usually due to neurogenic bladder (longstanding diabetes, alcoholism, disk disease) or because of outlet obstruction (prostatic enlargement). In this case, the patient usually complains of a frequent or constant leakage of small amount, but occasionally a large amount of urine is lost without warning. Functional incontinence refers to a limitation that does not allow the patient to void in the bathroom (bed rest, paralysis, severe dementia) and does not generally relate to the urinary tract. Stress incontinence is the loss of urine associated with increased abdominal pressure, and urge incontinence is preceded by a strong urge to urinate. Senile incontinence is a fictional term.

**235. The answer is e.** (*South-Paul, pp 462-472.*) After ruling out secondary causes of incontinence, a postvoid residual measurement should be taken. This can be done through catheterization or via ultrasound. A postvoid residual less than 50 mL is normal. A postvoid residual greater than 200 mL indicates inadequate bladder emptying and is consistent with overflow incontinence. Between 50 and 200 mL is indeterminate.

**236. The answer is b.** (*South-Paul, pp 462-472.*) Kegel exercises are designed to strengthen the pelvic floor musculature. Patients are asked to squeeze the muscles in the genital area as if they were trying to stop the flow of urine from the urethra. They hold this contraction for 10 seconds, and repeat this many times in the day. Patients are then taught to contract these muscles and hold them during situations where incontinence may occur. They are most useful to treat stress incontinence, but may help with mixed incontinence as well. It is not helpful for functional, urge, or overflow incontinence.

**237. The answer is a.** (*South-Paul, pp 462-472.*) Pharmacologic therapy is indicated for incontinence if a behavioral approach is ineffective. For urge incontinence, anticholinergic medications are the drugs of choice with oxybutynin (Ditropan) and tolterodine (Detrol) both indicated for symptoms. Pseudoephedrine has been shown to help stress incontinence, trimethoprim-sulfamethoxazole has been shown to help in the case of prostatitis, and finasteride and terazosin will help frequent voiding caused by prostatic hyperplasia.

**238. The answer is c.** (*South-Paul, pp 462-272.*) Pharmaceuticals are a common cause of incontinence. There are many neural receptors involved in urination and, therefore, many medications are used to treat other medical issues can often cause problems. Antihypertensives are especially problematic.  $\alpha$ -Blockers cause urethral sphincter relaxation and can cause urinary leakage, but not urgency. Calcium channel blockers can cause urinary retention. Diuretics can cause increased frequency and urgency, but usually not leakage.  $\beta$ -Blockers inhibit bladder relaxation and therefore can cause both urinary leakage and urgency.

**239. The answer is e.** (*South-Paul, pp 462-472.*) Many nonprescription agents may contribute to urinary symptoms. Alcohol has a diuretic effect and may cause polyuria or incontinence. Decongestants and diet pills may



cause urinary retention if they include  $\alpha$ -agonists. Antihistamines can cause urinary retention or functional incontinence. Caffeine has a diuretic effect and can cause polyuria. Marijuana abuse is not known to contribute to urinary symptoms.

**240. The answer is e.** (*Mengel, pp 255-262.*) In evaluating childhood jaundice, it's important to differentiate between conjugated and unconjugated hyperbilirubinemia. If jaundice occurs in childhood and is associated with unconjugated hyperbilirubinemia, hemolytic diseases (G6PD deficiency and spherocytosis), Gilbert disease and Crigler-Najjar syndrome should be considered. If associated with conjugated hyperbilirubinemia, viral hepatitis is the most common cause. Less common causes of conjugated hyperbilirubinemia include Wilson disease and milder forms of galactosemia.

**241. The answer is c.** (*Mengel, pp 255-262.*) Adult-onset jaundice is always concerning, and understanding the likelihood of disease states will help guide the workup. Hemolytic anemia causes an unconjugated hyperbilirubinemia, and is therefore not a consideration in this patient. Viral hepatitis accounts for up to 75% of jaundice in patients younger than 30, but only accounts for 5% of jaundice in patients older than 60 years. Extrahepatic obstruction (gall stones, strictures, and most importantly pancreatic cancer) accounts for more than 60% of jaundice in patients older than 60 years. Congestive heart failure accounts for around 10% of jaundice in patients older than 60, and metastatic disease accounts for around 13%.

**242. The answer is d.** (*Mengel, pp 255-262.*) In the setting of suspected obstruction with normal initial testing, it is sometimes difficult to determine the next steps. When obstruction is suspected, ultrasound or CT scan is the appropriate initial test. If dilated bile ducts are seen, then ERCP or PTC should be done, followed by appropriate intervention. If bile ducts are not dilated but the likelihood of obstruction is low, the patient should be evaluated for hepatocellular or cholestatic liver disease. If obstruction is still considered likely after a negative ultrasound or CT scan, MRCP is a reasonable next option. It has excellent sensitivity and specificity, will evaluate anatomy appropriately, and unlike ERCP, does not induce post-procedure pancreatitis.

**243. The answer is a.** (*South-Paul, pp 133-145.*) Primary amenorrhea is defined as the absence of menses at age 16 in the presence of normal

secondary sex characteristics, or absence of menses at age 14 in the absence of secondary sex characteristics. It is usually the result of a genetic or anatomic abnormality. Gonadal dysgenesis is the most common cause of primary amenorrhea, responsible for about 50% of the cases. The most well-known type is Turner syndrome (45 XO). Hypothalamic failure is often a result of anorexia nervosa, excessive exercise, chronic or systemic illness, and severe stress, and results from a suppression of hypothalamic gonadotropin-releasing hormone (GnRH) secretion. Pituitary failure may result from inadequate GnRH stimulation and is often associated with a history of head trauma, shock, infiltrative processes, pituitary adenoma, or craniopharyngioma. These patients will often display deficiency of other pituitary hormones as well. Polycystic ovarian syndrome may cause primary amenorrhea, but is generally associated with normal breast development. Constitutional delay of puberty, although common in boys, is an uncommon cause of amenorrhea in girls, but clinically is very hard to distinguish from other more common causes.

**244. The answer is c.** (*South-Paul, pp 133-145.*) Pregnancy is the most common cause of secondary amenorrhea, and can even occur in a patient who claims that she has not been sexually active or says that she only has intercourse during “safe” times. Polycystic ovarian syndrome is common and is responsible for about 30% of the cases of secondary amenorrhea. It is characterized by androgen excess, and symptoms include irregular or absent menses, hirsutism, acne, and virilization. Functional hypothalamic amenorrhea is usually a result of anorexia, rapid weight loss, rigorous exercise, or significant emotional stress. Hypothyroidism and hyperprolactinemia can both be associated with secondary amenorrhea, but are less common causes.

**245. The answer is c.** (*South-Paul, pp 133-145.*) Anovulatory bleeding is caused by continuous unopposed endometrial estrogen stimulation. Since these patients do not ovulate, progesterone from the corpus luteum is not secreted, the withdrawal from which would normally cause endometrial sloughing. It is the most common cause of dysfunctional uterine bleeding in women younger than 20 years of age, accounting for about 95% of cases. When women are within 2 years of menarche, this is especially common, and can be followed expectantly. Alternatively, oral contraceptives can be used to regulate periods. Pregnancy should be ruled out, even in women who deny sexual activity. Ovulatory bleeding due to fluctuations in estrogen and progesterone levels is also a cause of abnormal bleeding, but

accounts for only about 10% of cases. Leiomyomas and polyps may cause bleeding, but usually not in this age group.

**246. The answer is d.** (*Mengel, pp 425-429.*) If a postmenopausal woman has vaginal bleeding, she needs an endometrial biopsy to rule out endometrial cancer. In fact, this is usually the first step in the evaluation of this problem, after performing the examination and ruling out sexually transmitted infections or anatomic abnormalities. Ultrasound evaluation may be needed, but this would not be the next step in the evaluation of this condition. Contraindications to this procedure include pregnancy, acute infection, PID, or known bleeding disorder (including Coumadin use).

**247. The answer is a.** (*South-Paul, pp 133-145.*) Primary dysmenorrhea is caused by the release of prostaglandin from the endometrium at the time of menstruation. Treatment focuses on the reduction of endometrial prostaglandin production. This can occur either by using medications that inhibit prostaglandin synthesis, or by suppressing ovulation. NSAIDs are generally the first-line therapy, given their favorable risk to benefit ratio and effectiveness. They should be started a day before menstruation, if possible. Daily use of NSAIDs does not increase effectiveness and is associated with an increase of side effects. While opiate use may help with pain control, it does not inhibit prostaglandin synthesis and may lead to addiction. SSRI therapy is sometimes used for premenstrual dysphoric disorder, but is not a first-line therapy for dysmenorrhea. Oral contraceptive pills can be used and are effective, but are thought of as second-line therapy.

**248. The answer is b.** (*Mengel, pp 12-18.*) Many medications can cause hyperprolactinemia leading to amenorrhea. When hyperprolactinemia is related to medication, the measured prolactin level is usually less than 100 ng/mL. Many psychotropic medications can cause this, including benzodiazepines, SSRIs, tricyclic antidepressants, phenothiazines, and buspirone. Neurologic drugs that can increase prolactin levels include sumatriptan, valproate, and ergot derivatives. Estrogens and contraceptives can also elevate prolactin, as can some cardiovascular drugs (atenolol, verapamil, reserpine, and methyldopa). This is a less likely side effect in proton pump inhibitors, diuretics, ACE inhibitors, and thyroid replacement.

**249. The answer is e.** (*Mengel, pp 12-18.*) The progestin challenge test separates patients with estrogen deficiency from those with normal or

excess estrogen. Any bleeding in the week after the administration of Provera indicates that the patient has sufficient estrogen to menstruate, and that the amenorrhea is likely due to anovulation, as in polycystic ovarian syndrome. Those with premature ovarian failure would not have a withdrawal bleed. Neoplasm, Turner syndrome, and Asherman syndrome would not likely present in this way.

**250. The answer is a.** (*Mengel, pp 12-18.*) Patients with amenorrhea and elevated testosterone and DHEA-S levels need CT scanning of the adrenal glands and ultrasound of the ovaries to rule out neoplasm. Hysteroscopy and hysterosalpingogram may be involved in the workup of menstrual irregularities or infertility, but would not be helpful in the setting of hormonal abnormalities described. MRI would be helpful if pituitary tumor were suspected, and karyotyping would be appropriate to rule out genetic abnormalities; neither of which is suspected in this case.

**251. The answer is a.** (*Mengel, pp 12-18.*) When evaluating primary amenorrhea in patients with normal secondary sexual characteristics and a normal initial laboratory evaluation (pregnancy test, TSH assessment, and prolactin level), it is appropriate to perform a progestin challenge test. When there is no withdrawal bleeding, it either indicates inadequate estrogen production or an outflow tract obstruction. An estrogen-progestin challenge can differentiate between the two. No withdrawal bleeding after an estrogen-progestin challenge indicates an outflow tract obstruction or an anatomic defect.

**252. The answer is a.** (*Mengel, pp 66-71.*) Delirium and dementia are often clinically difficult to distinguish, especially if you are unfamiliar with the patient. Disorientation is characteristic of both processes, as is a disturbed sleep-wake cycle. His history of hypertension would lead one to think of multi-infarct dementia, rather than delirium. Responsiveness to questions may be a feature of either process, though patients with delirium often have a shortened attention span. The abrupt onset of a mental status change is consistent with delirium as opposed to dementia, which occurs insidiously.

**253. The answer is c.** (*Mengel, pp 66-71.*) The patient described has a hypertensive encephalopathy. With his severe hypertension, a stroke may be considered, but unlikely without focal neurologic deficits. Sixth nerve

palsy may be seen in a stroke. Pinpoint pupils would be more consistent with narcotic excess, unlikely given his vital signs and history. Dilated pupils suggests sympathetic outflow, and may be consistent with delirium tremens, but the history and physical is not consistent with this. Papilledema is seen with hypertensive encephalopathy. Anisocoria of 1 mm is a nonspecific finding that can be seen in normal individuals.

**254. The answer is d.** (*Mengel, pp 66-71.*) Hyperalert confusion is common with alcohol withdrawal. Hypothyroidism would present with fatigue and psychomotor slowing. Fluoxetine usually does not cause a withdrawal syndrome, but may be associated with depressive symptoms. Opiate withdrawal does not present with a confusional state. Amphetamine withdrawal would be associated with psychomotor slowing.

**255. The answer is e.** (*Mengel, pp 66-71.*) While a urinalysis, CBC, toxicology screen, and pregnancy test may all reveal the cause of delirium, the patient's history is consistent with viral or bacterial meningitis. A lumbar puncture is the most likely test to reveal the diagnosis in this case.

**256. The answer is c.** (*Mengel, pp 66-71.*) In dementia, the level of consciousness is not clouded, but disorientation may occur later in the illness. Hypertension and diabetes may be seen with both delirium and dementia. The inability to complete serial sevens (count backward from 100 by 7s) may be related to educational level. Although his symptoms have appeared recently, it is often difficult to pinpoint the exact onset of dementia. Delirium is seen as being more abrupt in onset.

**257. The answer is c.** (*McPhee, pp 542-545.*) While all of the medications listed have antiemetic properties, the patient described has gastroparesis, likely as a result of her longstanding diabetes. Metoclopramide can improve gastric motility and help her symptoms more than the other antiemetics listed.

**258. The answer is c.** (*McPhee, pp 542-545.*) A careful history and physical examination can often distinguish between potential causes for nausea and vomiting. In this case, mild pain, followed by the acute onset of distension, nausea, and vomiting is consistent with ileus or obstruction. Hyperactive bowel sounds lead one to think of obstruction; with an ileus bowel sounds are absent. Gastroenteritis begins acutely, but is usually not

preceded by mild abdominal pain. Diverticulosis and diverticulitis would cause pain, but would be less likely to present with nausea, vomiting, and distension.

**259. The answer is b.** (*McPhee, pp 542-545.*) Psychogenic vomiting should be suspected in patients who are able to maintain adequate nutrition despite chronic symptoms. It is usually seen during times of social stress or in patients with a past history of a psychiatric disorder. Chronic gastroenteritis is an unlikely condition. While young girls in this age group are at risk of anorexia and bulimia, sufferers usually do not seek medical attention or treatment until concerned others bring the condition to medical attention. A central nervous system malignancy is possible, if the lesion involves the vomiting center, but one would expect to see nutritional deficit in that case.

**260. The answer is b.** (*McPhee, pp 542-545.*) The situation described is consistent with viral gastroenteritis, a common clinical condition. The Norwalk virus, reoviruses, and adenoviruses are common causes. Symptoms typically begin acutely and are associated with typical viral syndrome symptoms. Generally, these illnesses are self-limited, and will resolve within 5 days. Oral rehydration is indicated as long as there are no signs of severe dehydration. IV rehydration and antiemetics may have a role, but only in more severe cases. There is no role for antibiotic therapy.

**261. The answer is d.** (*McPhee, pp 685-689.*) The patient described has pancreatitis, likely due to gallstones. While the laboratory findings in acute pancreatitis are often nonspecific, elevated serum amylase in the right clinical setting is often suggestive. Radiographic evidence can help confirm the diagnosis. In establishing a cause for pancreatitis, history is key, but some laboratory findings are helpful. Elevated ALT is more suggestive of gallstone pancreatitis and is less likely when alcohol or hypertriglyceridemia is the cause. ACE inhibitors are an uncommon cause of pancreatitis. Hypercalcemia is also a rare cause, but is unlikely in this case.

**262. The answer is e.** (*Mengel, pp 317-327.*) The symptoms and characteristics of nausea and vomiting can often be clues to the etiology. When nausea happens before eating in the morning, likely etiologies include pregnancy, uremia, alcohol withdrawal, and increased intracranial pressure (meningitis or space-occupying lesions). Gastroparesis and pancreatitis are

usually associated with nausea after eating. Cholelithiasis is associated with nausea, vomiting, and pain after eating fatty foods. Vestibular disorders cause nausea without any clear association with meals or time of day.

**263. The answer is c.** (*Mengel, pp 317-327.*) Children with pyloric stenosis usually present with weight loss, dehydration, and occasionally a palpable “olive” mass in the epigastric area. It is usually identified before 7 weeks of age. Breast milk allergies are uncommon. Reflux may be possible, but is less likely to be associated with weight loss and dehydration. Intussusception is associated with significant abdominal pain, and hemoccult positive stools. Small-bowel obstruction is less likely, and would be associated with high-pitched bowel sounds.

**264. The answer is b.** (*Mengel, pp 317-327.*) Pancreatitis is associated with the acute onset of significant nausea, vomiting, and epigastric pain. The symptoms occur after eating, and are improved when the patient does not eat. Amylase and lipase are likely to be abnormal, but the CBC is likely to be normal. Hemoccult testing, abdominal x-rays, and upper endoscopy are likely to be normal.

**265. The answer is d.** (*Mengel, pp 317-327.*) The patient described likely has cholelithiasis. Nausea, vomiting, and pain occur after eating fatty meals. The diagnostic test of choice would be a right upper quadrant ultrasound to identify stones in the gallbladder. Amylase and lipase may be positive if the patient develops secondary pancreatitis, but are unlikely to be elevated until that point. Hemoccult testing, abdominal x-rays, and upper endoscopy are all likely to be normal.

**266. The answer is d.** (*Mengel, pp 317-327.*) Antiemetics can cause a variety of side effects. The phenothiazines (Compazine and Phenergan) generally cause drowsiness, dry mouth, and dizziness. Tigan causes similar side effects. Zofran is a serotonin receptor antagonist, and may cause dizziness and headache. Reglan is a prokinetic agent and can cause diarrhea and extrapyramidal reactions.

**267. The answer is a.** (*Mengel, pp 328-331.*) Neck pain is commonly seen in family medicine. In fact, the lifetime prevalence of at least one episode of neck pain in the adult population is estimated to be between 40% and 70%. Pain aggravated by movement, worse after activities, associated with

a dull ache and with limited range of motion is consistent with spondylosis or osteoarthritis. If the pain were due to chronic mechanical problems, there would be tenderness to palpation on examination. If cervical nerve root irritation were the diagnosis, there would be radiation of symptoms, weakness, numbness, or paresthesias. With a whiplash injury, one would expect a history of an acceleration injury. And, with cervical dystonia (torticollis), the neck would be laterally flexed and rotated.

**268. The answer is b.** (*Mengel, pp 328-331*). The patient likely has spinal stenosis. He is an older individual, and describes axial stiffness and paresthesias over several dermatomes (C7-T1). In this case, a CT scan is the best choice. C-spine radiographs are indicated after injury, or if there are red-flags identified (see next question). MRI provides the best anatomic assessment of disk herniation and soft tissue or spinal cord abnormalities. EMG would help localize radiculopathy, but that is not necessary in this case.

**269. The answer is b.** (*Mengel, pp 328-331*.) The Canadian cervical spine rules help determine who should receive radiography. There are three questions to ask:

Is there one high-risk factor? High-risk factors include age >65 years, dangerous mechanism (including high speed motor vehicle accident) or numbness/tingling in the extremities. A “yes” answer to any of the above requires radiography.

Is there one low-risk factor? Low-risk factors include a simple rear-end collision, if the patient was ambulatory at any time at the scene, if there was absence of neck pain at the scene, and if there was absence of C-spine tenderness on examination. A “no” answer to any of the above would require radiography.

Is the patient able to voluntarily actively rotate the neck 45° to the left and right regardless of pain? A “no” answer to that question would require radiography.

Since the answer to the first question is “yes” in this case, the patient would require C-spine radiography.

**270. The answer is d.** (*Mengel, pp 328-331*). The Spurling test is also called the neck compression test. It requires the patient to bend his/her head to the side and rotate the head toward the side of pain while the tester exerts downward pressure. The maneuver reproduces symptoms in the affected



upper extremity in the case of nerve root injury. It has a high specificity, but a low sensitivity for cervical radiculopathy. Nonspecific mechanical pain should be considered to be the diagnosis if the maneuver results in neck discomfort only.

**271. The answer is a.** (*Mengel, pp 328-331*) Cervical dystonia or torticollis in adults has been managed in many ways. Physical therapy, stretching, gentle manipulation, use of cervical collars, and ice/heat have all been used with some results. However, the strength of evidence supporting those treatments is weaker than the evidence behind the use of botulinum toxin. That treatment options has randomized controlled trials that indicate effectiveness.

**272. The answer is c.** (*Mengel, pp 331-337.*) There are several characteristics of palpitations that can help the physician determine whether or not the symptoms are from a cardiac cause. These include male sex, the description of the symptom as an “irregular heartbeat,” a personal history of heart disease and event duration greater than 5 minutes. Family history of similar symptoms would not be a risk factor for cardiac disease.

**273. The answer is a.** (*Mengel, pp 331-337.*) When a patient describes her heartbeat as rapid and irregular, it suggests either atrial fibrillation or atrial flutter. Ectopy and atrial fibrillation can both cause an irregular pulse. PSVT is usually rapid and regular, as is stable ventricular tachycardia. Stimulant abuse will generally cause a sinus tachycardia. While hyperthyroidism may cause atrial fibrillation, the patient would likely have additional symptoms.

**274. The answer is c.** (*Mengel, pp 331-337.*) Ventricular premature beats are often random, episodic, and instantaneous beats, often described as a “flip-flopping” sensation. Atrial fibrillation is described more as a rapid and irregular heart rate or a “fluttering” in the chest. PSVT is generally rapid and regular, and lasting a longer time. Stimulant abuse would likely cause sinus tachycardia, and while hyperthyroidism can cause premature beats, the patient would likely experience other symptoms.

**275. The answer is b.** (*Mengel, pp 331-337.*) Hypertrophic cardiomyopathy can be associated with atrial fibrillation or ventricular tachycardia. The characteristic heart murmur associated with it is a systolic ejection

murmur (like aortic stenosis) worsening with Valsalva maneuver. Mitral valve prolapse would have a different characteristic murmur. Dilated cardiomyopathy and CHF would likely be associated with other symptoms. Atrial fibrillation would not be associated with a regular rhythm.

**276. The answer is a.** (*Mengel, pp 331-337.*) When the history, physical examination, 12-lead ECG, and limited laboratory evaluation are negative, it is appropriate to reassure the patient with palpitations and continue observation. The likely etiology is benign supraventricular or ventricular ectopy. Other tests and consultation would only be indicated if the patient's symptoms are incapacitating or worrisome.

**277. The answer is d.** (*Mengel, pp 331-337.*) Since this patient's arrhythmia only seems to occur with exercise, stress testing would be useful. Ambulatory ECG monitoring and echocardiography would not be useful. Consultation with an electrophysiologist may be appropriate, depending on the results of the testing.

**278. The answer is c.** (*Mengel, pp 331-337.*) The classic Wolff-Parkinson-White syndrome (preexcitation syndrome) ECG demonstrates a short PR interval and  $\delta$ -waves. Patients are treated if they have symptomatic arrhythmia. Treatment usually consists of radiofrequency ablation, but pharmacotherapy is also an option.

**279. The answer is c.** (*Mengel, pp 344-352.*) Classically, ovarian cysts present with a unilateral dull pain that can become diffuse and severe if the cyst ruptures. On physical examination, the examiner feels a smooth mobile adnexal mass with peritoneal signs if the cyst ruptures. PID is associated with fever and vaginal discharge. Ectopic pregnancy may present with similar symptoms, but menses would not be normal. Uterine leiomyoma are generally asymptomatic if present in this age group, and if symptomatic would classically be associated with low midline pressure and menorrhagia or metorrhagia. Appendicitis would be associated with fever, nausea, and anorexia.

**280. The answer is e.** (*Mengel, pp 344-352.*) PID is classically described as lower abdominal pain that is gradual in onset and bilateral. Fever, vaginal discharge, dysuria, and occasionally abnormal vaginal bleeding may be associated symptoms. Treatment should provide coverage for likely etiologic agents (*Neisseria gonorrhoeae*, *Chlamydia trachomatis*, anaerobes,

and enteric gram-negative rods). The CDC recommended outpatient regimen is ceftriaxone 250 mg IM plus doxycycline 100 mg BID for 14 days with or without metronidazole 500 mg BID for 14 days. Inpatient treatment with parenteral antibiotics is recommended for pregnant women, patients with severe illness with fever and vomiting, and cases where surgical emergencies can't be ruled out. Inpatient therapy may be necessary for those who fail an appropriate outpatient regimen as well.

**281. The answer is b.** (*Mengel, pp 344-352.*) The pain associated with ectopic pregnancy is often described as colicky, and may radiate to the shoulder if there is a significant hemoperitoneum. Nausea, a symptom of pregnancy, is a diagnostic clue.

**282. The answer is e.** (*Mengel, pp 344-352.*) The patient described has symptoms and signs suggestive of endometriosis. A CBC would be helpful if the signs are suggestive of an infectious process (appendicitis or PID). An ESR is elevated in 75% of patients with PID, but is nonspecific. CA-125 levels may be helpful if the physician is concerned about an ovarian mass. Transvaginal ultrasound may be helpful, but MRI is more sensitive for localization of endometriosis.

**283. The answer is c.** (*Mengel, pp 344-352.*) Eighty percent of ovarian masses in girls younger than 15 years are malignant. Because of the high potential for malignancy, any adnexal mass should be evaluated by transvaginal ultrasound and referral for surgical removal. In many women of childbearing years, adnexal masses are commonly cysts. If the pain is not acute or recurrent, palpable cysts less than 6 cm in size may be monitored with repeat pelvic examination. Ultrasound is reserved for those masses that do not resolve, or those that increase in size. CT and MRI may be useful in some cases, but the ultrasound is the best first test.

**284. The answer is e.** (*Bope, pp 229-231.*) Any of the conditions listed as answers in this question can cause an exudative pharyngitis. Palatal petechiae suggest either a group A streptococcal infection or infectious mononucleosis. However, posterior cervical adenopathy should point to infectious mononucleosis as the correct diagnosis.

**285. The answer is d.** (*Bope, pp 229-231.*) Fever, chills, myalgias, and pain with swallowing are nonspecific signs, and are associated with pharyngitis

from any cause. Anterior adenopathy is also associated with viral or bacterial pharyngitis. However, edema swollen uvula is suggestive of group A hemolytic streptococcal infection. Of the choices listed, first-line treatment should be amoxicillin. Penicillin resistance has not been seen in group A  $\beta$ -hemolytic streptococcal infection, but liquid amoxicillin has a better taste than liquid penicillin. In the penicillin-allergic patient, a first-generation cephalosporin or macrolide may be substituted. Tetracycline, sulfonamides, and older fluoroquinolones are not recommended because of high rates of resistance.

**286. The answer is a.** (Bope, pp 229-231.) Approximately 20% of school age children are carriers of group A  $\beta$ -hemolytic *Streptococcus*. In the past, it was felt that these children needed to be treated to eradicate the bacteria. The antibiotics used to eliminate group A streptococcal carriage from oropharyngeal secretions were oral respiratory quinolones or oral clindamycin. Recent studies have shown that these carriers do not need to be identified or treated, as they do not develop complications from infection and have not been found to be important in the spread of group A  $\beta$ -hemolytic *Streptococcus* to others.

**287. The answer is a.** (Bope, pp 229-231.) Laryngitis with pharyngitis is generally associated with a viral infection, and only supportive care is needed. Antibiotic therapy is not indicated in this case.

**288. The answer is d.** (Bope, pp 229-231) The Centor Criteria for adults are widely accepted as a method for determining the probability of group A  $\beta$ -hemolytic streptococcal infection. One point is given for each of the following characteristics: tonsillar exudates, tender anterior cervical adenopathy, fever and lack of cough. These four features, and when present, strongly suggest infection. The most cost effective approach to patients who have all four criteria is to treat with antibiotics without performing laboratory testing. If someone has three criteria, the chance of having a strep infection drops to 40% to 60%, and a person with only one of the criteria has a 1% to 5% chance.

**289. The answer is e.** (Mengel, pp 384-389.) Epididymitis commonly occurs in sexually active males. It is generally caused by retrograde spread of prostatitis or urethral secretions through the vas deferens. In sexually active men younger than 35 years old, it is usually associated with urethritis and caused by *Neisseria gonorrhoeae* or *Chlamydia trachomatis*. It is less commonly

caused by *Ureaplasma* or *Mycoplasma* in this age group. In men older than 35 who are sexually monogamous, it is more commonly caused by enteric gram-negative rods (*Enterobacter*) in association with prostatitis.

**290. The answer is b.** (Mengel, pp 384-389.) Testicular torsion requires emergent surgical referral, as after 12 hours without treatment, there is only a 20% chance that the testicle can be saved. In torsion, the cremasteric reflex (elicited by pinching or brushing the inner thigh which causes the ipsilateral testicle to retract toward the inguinal canal) is absent. If pain is relieved upon elevation of the testicle when the patient is supine, Prehn sign is positive. This does not occur with testicular torsion. The cremasteric reflex and Prehn sign are positive in cases of epididymitis, hernias, orchitis, or cancer.

**291. The answer is e.** (Mengel, pp 384-389.) The symptoms and examination findings in this case point to a spermatocele. These are asymptomatic nodules, generally found attached to the spermatic cord. No tests are necessary in this case, unless the diagnosis remains unclear. Ultrasounds are helpful to evaluate enlarging masses or to determine if a mass is solid (neoplastic) or not (varicocele, hydrocele). CT scans may be necessary to evaluate hernias, and urinalyses or urethral smears would be helpful in infectious causes like epididymitis or urinary tract infections.

**292. The answer is a.** (Wolff, pp 2-8.) Acne is associated with many myths regarding its cause. The true cause is multifactorial, but familial factors are involved. The key factors are follicular keratinization, androgens, and *Propionibacterium* acnes. In acne, the keratinization pattern in the pilosebaceous unit changes, and keratin becomes more dense, blocking the secretion of sebum. The keratin plugs are called "comedones." Contributory factors to acne include certain medications, emotional stress, and occlusion and pressure on the skin, such as by leaning the face on the hands (acne mechanica). Acne is not caused by dirt, chocolate, greasy foods or the presence or absence of any foods in the diet.

**293. The answer is e.** (Wolff, pp 2-8.) In the evaluation of acne, laboratory examinations are generally not required, unless history and physical examination indicates the need to exclude hyperandrogenism and/or polycystic ovarian syndrome. In the vast majority of acne patients, the hormone levels are normal.

**294. The answer is e.** (Wolff, pp 2-8.) For mild acne, combination therapy with topical antibiotics, benzoyl peroxide gels, and topical retinoids work best. While any of the individual components will work on their own, there is a synergistic effect when used in combination. It is important to let patients know that improvement occurs over a period of 2 to 5 months, and may take even longer for noninflamed comedones. Topical retinoids should be applied in the evening, and the benzoyl peroxide and topical antibiotics should be applied during the day.

**295. The answer is c.** (Wolff, pp 2-8.) The indications for oral isotretinoin include nodular acne, severe acne, or moderate recalcitrant acne. The patient must have been resistant to other acne therapies, including systemic antibiotics. Isotretinoin is teratogenic, and therefore pregnancy must be prevented during its use. In addition, since both tetracycline and isotretinoin cause pseudotumor cerebri, the two medications should never be used together. While hepatotoxicity has been rarely seen in people using isotretinoin, Tylenol may be used during therapy. Dry eyes are a side effect, and patients may have more difficulty with contacts, but they can still be worn. There are some reports of depression while on the medication, but there are no guidelines about screening throughout therapy, as this is a rare occurrence. Topical glucocorticoids are safe for use during therapy and are sometimes used if eczematous rashes occur during treatment.

**296. The answer is c.** (Wolff, pp 9-13.) The patient in the picture has rosacea. Although it is often considered along with acne, rosacea is a distinct entity. Comedo formation, the hallmark of acne vulgaris, is absent in rosacea. In stage I, there is persistent erythema, generally with telangiectasia formation. Stage II is characterized by the addition of papules and tiny pustules. In stage III, the erythema is deep and persistent, the telangiectases are dense, and there may be a solid appearing edema of the central part of the face due to sebaceous hyperplasia and lymphedema (rhinophyma and metophyma). Management may include topical or oral therapies. Topical metronidazole, antibiotics, and sodium sulfacetamide can work, but oral antibiotics are more effective than topical treatments. Minocycline or doxycycline are very effective first-line therapies. Topical steroids are not generally effective.

**297. The answer is c.** (Wolff, pp 286-295.) The patient shown has a keratoacanthoma. Often, these are difficult to distinguish from basal cell cancers, nodular squamous cell cancers, or molluscum by appearance alone,

but the history is quite different. Keratoacanthoma are characterized by rapid growth, achieving a size of 2.5 cm within a few weeks. Basal cell cancers and squamous cell cancers are slowly evolving. Verruca do not generally have the depressed center or the pearly borders. Molluscum do have a central dimple, but not have such a significant keratotic plug present.

**298. The answer is a.** (Wolff, pp 53-71.) The patient pictured has psoriasis. While the skin lesions could be confused with eczema, fungal dermatitis, or other lesions, the history and the nail involvement should point to the correct diagnosis. For localized skin rashes, topical corticosteroids are appropriate therapeutic agent. Topical pimecrolimus is effective for inverse psoriasis (located on the perianal and genital regions) or on the face and ear canals, but is generally not used for lesions on the trunk or extremities. There is no place for antibiotics in treatment, except in the case of guttate psoriasis, a form that follows streptococcal infection and appears as multiple teardrops that erupt abruptly. Oral retinoids and methotrexate are both used to treat generalized psoriasis, and help with nail involvement, but would not be a first-line therapy for a localized rash.

**299. The answer is a.** (Wolff, pp 122-123.) The rash shown is classic for pityriasis rosea, a self-limited papulosquamous eruption. The classic history includes a single herald patch (an oval, slightly raised plaque with scale) followed in the next 1 to 2 weeks with a more generalized eruption. It will spontaneously resolve in 6 to 12 weeks, and recurrences are uncommon. The treatment is symptomatic, and includes antihistamines or corticosteroids to relieve itch. There is no role for the other agents listed.

**300. The answer is b.** (Wolff, pp 597-604.) The child shown has impetigo. This diagnosis should be considered in the face of well-demarcated erythematous lesions that, when disrupted, develop a secondary golden crust. The lesions have a predilection for traumatized skin, in this case where nasal discharge has disrupted the skin surface. In the past, most cases were thought to be due to streptococci. However, most cases are caused by *S aureus*. Impetigo responds well to topical antibiotics like mupirocin applied to the lesion and to the nares, where many are colonized with *S aureus*.

**301. The answer is a.** (Wolff, pp 993-999.) The patient described and shown has "hot tub folliculitis." The infection is generally caused by *Pseudomonas aeruginosa* or *Pseudomonas cepacia*. The condition is usually self-limited,

and therefore reassurance is all that is necessary. Antibiotic therapy is only indicated in recalcitrant cases, or if patients are symptomatic. If patients are symptomatic, ciprofloxacin 500 mg twice daily is an appropriate treatment.

**302. The answer is c.** (Wolff, pp 813-822.) The description and picture are consistent with a recurrence of HSV infection. Management includes topical antiviral therapy or oral antiviral therapy. Antiviral agents are more effective treating primary infections than recurrent infections. Pulse dosing (treating at the first sign of an outbreak) may shorten or reduce the severity of an eruption, but are not otherwise beneficial. Chronic suppression is best to decrease the frequency of symptomatic recurrences and asymptomatic viral shedding. Acyclovir resistance is extremely rare. Valacyclovir and famciclovir have equal efficacy for cutaneous HSV infections.

**303. The answer is e.** (South-Paul, pp 146-164.) Treatment options for genital herpes include treating each outbreak (episodic therapy) or using chronic antiviral therapy on a daily basis to prevent outbreaks (suppressive therapy). If episodic therapy is used, it should begin at the first sign of an outbreak, but in discordant couples, daily suppressive therapy is now recommended. Suppressive therapy seems to reduce, not eliminate, asymptomatic viral shedding. Suppressive therapy does not alter the natural course of the infection and is not associated with antiviral resistance. Daily suppressive therapy may reduce the risk of HIV transmission or acquisition, but more studies are needed.

**304. The answer is b.** (Wolff, pp 837-845.) The patient shown has herpes zoster, or “shingles.” Antiviral therapy is the treatment of choice, and can decrease the time for lesion healing and shorten the overall duration of pain if initiated within 72 hours after the onset. In some cases, no benefit will occur if treatment starts after the 72 hour cutoff, but it should be initiated regardless of time in patients over 50, those who are immunosuppressed, or those with eye involvement. Corticosteroids have not been shown to decrease the likelihood of postherpetic neuralgia. Postherpetic pain is sometimes severe, and narcotics are often indicated. Antiviral resistance is actually uncommon in this setting.

**305. The answer is b.** (Wolff, pp 806-808.) The picture shown, coupled with the clinical scenario described, is classic for infection with parvovirus B19. The resulting illness is called erythema infectiosum, or “fifth disease.”



Enteroviruses may cause hand-foot-and-mouth disease. Parainfluenza viruses are implicated in croup. Varicella causes chicken pox, and cytomegalovirus may cause mono-like symptoms, but not the classic “slapped cheek”-appearing rash.

**306. The answer is d.** (Wolff, pp 710-714.) The picture shows tinea capitis. Systemic therapy is necessary for a cure, but concurrent use of topical ketoconazole shampoo or selenium sulfide lotion may kill spores on the hair. Griseofulvin is considered the treatment of choice in the United States, and should be used for 4 to 8 weeks. Terbinafine, itraconazole, fluconazole, and ketoconazole can also be used. If fluconazole were to be used, the treatment duration would only be for 3 to 4 weeks, not 4 to 8 weeks.

**307. The answer is a.** (Wolff, pp 704-706.) Tinea corporis, otherwise called “ringworm” is most commonly caused by *Trichophyton rubrum*. It appears as a well-demarcated plaque with central scaling. It is usually pruritic. Tinea infections can also be caused by *T tonaurans* (tinea capitis), *T mentagrophytes* (tinea cruris), and *M canis* (inflammatory tinea infections). *Candida* species are more commonly seen as a superinfection of tinea pedis.

**308. The answer is a.** (McPhee, pp 142-144.) Treatment for warts should be geared toward inducing “wart-free” intervals for as long as possible, and trying not to create scarring. No treatment can guarantee a remission or absolutely prevent reoccurrences. All the therapies listed in this question may be used for warts, but topical liquid nitrogen is the best choice in this case. Podophyllum resin should not be used during pregnancy. Imiquimod is often used for anogenital warts, but has not demonstrated benefit for common warts. Laser therapy is effective, but leaves open wounds that heal by secondary intention and should be reserved for warts resistant to other treatment modalities. Bleomycin injection has a high cure rate, but shouldn't be used on digital warts because of potential complications including terminal digital necrosis.

**309. The answer is d.** (McPhee, pp 105-107.) Atopic dermatitis or eczema may have a different appearance in different people. However, several characteristics do help to differentiate it from other causes of rash. The rash may look like rough, red plaques with some flaking that can affect the face, neck, upper trunk, and behind the knees. The flexural surfaces are often involved. Pruritus may be severe. Most patients have the onset of eczema in childhood, and onset after the age of 30 is very uncommon.

**310. The answer is c.** (*South-Paul, pp 146-164.*) The lesion described is molluscum contagiosum. It can appear in individuals of all ages and all races, but is more commonly reported in white males. The lesion is due to an infection with a poxvirus transmitted through direct skin-to-skin contact. Lesions are common in children in a daycare or nursery school setting and are in that case not likely to be sexually transmitted. However, in adults and in the pubic region, they are sexually transmitted. Although the lesions can be similar to those seen with basal cell cancers, the lack of telangiectasia is a diagnostic clue. The lesions can occur in immunocompetent persons, but in patients who are immunocompromised, they are generally more numerous and larger. Most lesions will resolve spontaneously within months of appearance, but they can be treated with cryotherapy, cautery, or curettage.

**311. The answer is e.** (*Bope, pp 193-195.*) Symptoms of conjunctivitis include increased redness, irritation, tearing, discharge, photophobia, or itching. Unfortunately, the character of the eye discharge is not useful in distinguishing bacterial from viral conjunctivitis. Pain is suggestive of a more serious problem, possibly acute angle closure glaucoma, uveitis, scleritis, keratitis, a foreign body, or a corneal abrasion.

**312. The answer is e.** (*Bope, pp 193-195.*) Of the symptoms of conjunctivitis, itching is more specific for allergic conditions. Irritation, tearing, and discharge are more general symptoms, and not useful in differentiating allergic conjunctivitis from other causes. Allergic conjunctivitis is more characteristically bilateral, therefore single-eye involvement in this case would not point to allergic conjunctivitis.

**313. The answer is c.** (*Bope, pp 193-195.*) Adenovirus is the most common virus causing conjunctivitis. It can be transmitted through ocular and respiratory secretions and less commonly from fomites on towels or equipment. It has an 8-day incubation period, and a 10- to 12-day viral shedding period. Supportive treatment is indicated. Although topical antibiotics have been prescribed to try to prevent bacterial superinfection, there is no good evidence that it makes any significant impact.

**314. The answer is e.** (*Mengel, pp 364-372.*) The symptoms in this case are consistent with viral conjunctivitis. The presence of a palpable preauricular lymph node is characteristic of viral conjunctivitis. Approximately 85% of viral conjunctivitis is because of adenovirus, which is highly contagious, and is self-limited. Only 15% of conjunctivitis is bacterial. Characteristics

of bacterial conjunctivitis include purulent discharge, pain, photophobia, and a “gritty” sensation of the eye. Topical corticosteroids are contraindicated in conjunctivitis, as studies have documented increased duration of viral shedding, prolongation of the infectious period, and potential corneal ulcerations and perforations. Antiviral eye drops are indicated for herpetic eye infections; but without corneal dendrites with fluorescein staining, that diagnosis is unlikely. The treatment for nonherpetic viral conjunctivitis is supportive, using cold compresses and lubricating drops.

**315. The answer is d.** (*Bope, pp 193-195.*) Bacterial conjunctivitis is most commonly caused by *Streptococcus* and *Staphylococcus*. However, there are increasing reports of conjunctivitis caused by methicillin-resistant *S aureus* (MRSA). MRSA conjunctivitis manifests as bacterial conjunctivitis resistant to conventional therapy, and is treated with the same drugs used to treat MRSA in other parts of the body. Cultures should be obtained when MRSA is suspected. It is likely that the other oral or topical antibiotics listed would not cure MRSA, and an ophthalmology referral is not necessary unless treatment is unsuccessful.

**316. The answer is a.** (*Mengel, pp 264-372.*) Scleritis is a unilateral diffuse injection of the deeper scleral vessels. Symptoms include decreased vision, deep “boring” eye pain, and a surrounding headache. It is usually associated with systemic autoimmune diseases like rheumatoid arthritis or Wegener granulomatosis. Episcleritis is associated with mild irritation, and is not as intense as the syndrome described above. A corneal abrasion is associated with decreased vision, intense pain, and tearing, but is associated with trauma. Acute glaucoma is associated with pain, decreased vision, and redness, but the affected pupil is usually dilated. Iritis also has similar symptoms, but the pupil is small.

**317. The answer is c.** (*Bope, pp 217-219.*) By definition, sinusitis is inflammation of the mucosa of the paranasal sinuses irrespective of the cause. Predisposing factors include viral upper respiratory infections and allergic rhinitis. Studies from primary care literature have provided helpful information on symptoms and signs that help discriminate bacterial sinusitis from viral upper respiratory infections. Purulent rhinorrhea, purulent secretions in the nasal cavity, tooth pain, and a biphasic history (worsening of symptoms after an initial period of improvement) have been found to be associated with bacterial sinusitis and are therefore diagnostically valuable.

Duration of illness of less than 7 days may be used as a negative diagnostic criterion. Sinus pain with palpation and lack of improvement with decongestants have not been shown to be diagnostically valuable. While her history of allergic rhinitis is a predisposing factor, it is not diagnostically valuable, and the value of plain sinus x-rays in the diagnosis is limited.

**318. The answer is a.** (Bope, pp 217-219.) Most patients with recurrent sinusitis have an underlying psychologic or anatomic abnormality that contributes to their problem. While all of the conditions listed predispose to bacterial infections of the sinus cavities, allergic rhinitis is the most common one listed and is present in at least 60% of people with recurrent sinusitis.

**319. The answer is d.** (Bope, pp 217-219.) *Streptococcus pneumoniae* is the most common bacterial pathogen in bacterial sinusitis. Other causes include *Haemophilus influenzae*, *Moraxella catarrhalis*, and group A  $\beta$ -hemolytic streptococci.

**320. The answer is e.** (Bope, pp 217-219.) In patients clinically diagnosed with acute sinusitis, no significant difference has been demonstrated between antibiotics and placebo. However, in patients with sinusitis confirmed by CT scan, x-ray, or bacteriology, there has been demonstrated efficacy of antibiotic treatment. Newer broad-spectrum antibiotics are not significantly more effective than older or narrow-spectrum agents, and amoxicillin is considered the drug of choice in most countries.

**321. The answer is d.** (South-Paul, pp 403-416.) Treatment for a shoulder dislocation consists of pain management and relocation. After relocation, the shoulder should be immobilized for 7 to 10 days to allow for capsular healing. Then, range of motion exercises and strengthening should be started. Younger patients may have a higher recurrence rate, and surgical referral should be entertained, but it is not necessary immediately. Immediate return to play would likely result in recurrence. An MRI is not necessary in this setting.

**322. The answer is a.** (Bope, pp 1024-1027.) Iliotibial band syndrome is the most common cause of lateral knee pain in an athlete. It is most commonly seen in athletes who participate in repetitive knee flexion activities like distance runners and cyclists. The patient will present with pain or ache over the

lateral aspect of the knee that worsens with activity, and on examination has pain and tightness over the IT band. Patellofemoral pain syndrome would present with diffuse knee pain and a positive patellar grind test. MCL sprains, ACL sprains, and meniscal tears would not present with lateral pain.

**323. The answer is b.** (*Bope, pp 1024-1027.*) The twisting injury, feeling of a “pop,” and immediate effusion while still being able to bear weight are consistent with an ACL tear. The sense of instability also helps lead toward that diagnosis. Patellofemoral pain would generally not occur acutely or after an injury. The mechanism of a posterior cruciate ligament injury is through direct force to the knee. Meniscal injuries also cause knee pain, and are frequently associated with ACL tears, but are more likely to cause locking, catching, or giving way. Medial collateral ligament sprains are generally caused by a valgus stress to a partially flexed knee. The sprain would present with pain over the medial aspect of the knee, but does not have swelling of the joint.

**324. The answer is c.** (*Bope, pp 1024-1027.*) The symptoms described are consistent with patellofemoral pain syndrome, the most common diagnosis for patients with anterior knee pain presenting to their primary care physician. The pain is typically worse with walking, running, ascending or descending stairs, or squatting or sitting for prolonged periods of time (the theatre sign). Treatment is done primarily through strengthening the quadriceps muscles and hip rotators. Strengthening the hip abductors, internal rotators, and knee flexors is generally treatment for iliotibial band syndrome, but would not generally help patellofemoral syndrome.

**325. The answer is a.** (*Bope, pp 1024-1027.*) The Ottawa ankle rules are a useful guide to use to determine if radiographs are indicated after an ankle sprain. Films should be obtained if

- The patient is unable to walk four steps immediately after the injury and in the office.
- There is tenderness over the distal 6 cm of the tibia or fibula, including the malleoli.
- There is midfoot or navicular tenderness.
- There is tenderness over the proximal fifth metatarsal.

Rest, ice, compression, and elevation are mainstays of therapy, but the x-ray is imperative for this case. Early mobilization is recommended, unless there

is a fracture present. NSAIDs or acetaminophen can be used for pain control, but the x-ray is the most important next step. Physical therapy may help expedite return to activity in the long run, but only after fracture has been ruled out.

**326. The answer is c.** (*Mengel, pp 395-400.*) Studies have shown that a limited evaluation including a hematocrit, serum creatine kinase, glucose, ECG, carotid massage, orthostatic blood pressure, and evaluation of pulses should be done in the majority of syncope cases. Additional testing including a Holter monitor, echocardiogram, ambulatory loop ECG, and tilt table testing yields a diagnosis in an additional 5% of patients. All patients with syncope should have an ECG, even though the diagnostic yield is low. It is relatively easy, risk-free, and can help rule out the most concerning cardiac causes. A CBC (including WBC count and platelets) is probably not needed unless an infectious etiology is suspected, and a TSH assessment is also not necessary unless thyroid disease is suspected.

**327. The answer is a.** (*Mengel, pp 395-400.*) In syncopal patients who present with a heart murmur, echocardiography should be obtained. It will help rule out valvular heart disease, but will also identify hypertrophic cardiomyopathy (the likely cause in this question). Holter monitoring and long-term ambulatory loop ECG testing will help identify arrhythmias, stress testing will help identify ischemia and/or exercise-induced arrhythmias, and tilt table tests are indicated in patients with unexplained recurrent syncope in whom cardiac causes are ruled out.

**328. The answer is d.** (*Mengel, pp 395-400.*) The patient in this scenario had exertional dyspnea and diaphoresis. As a diabetic, she is at high risk for silent ischemia, often signaled by anginal equivalents such as dyspnea and diaphoresis. A hypoglycemic event could have also caused diaphoresis and syncope, but serum glucose testing 1 day later would not help identify that as a cause. In addition, glycosolated hemoglobin would not be helpful in determining the cause of the event. An echocardiogram would not be helpful without physical examination findings consistent with cardiomyopathy or valvular disease, and a Holter monitor would be less helpful without evidence of palpitations or ECG abnormalities.

**329. The answer is e.** (*Mengel, pp 395-400.*) Tilt table testing is recommended in patients with unexplained recurrent syncope in whom cardiac causes

including arrhythmias have been ruled out. An abnormal result suggests vasovagal syncope. Psychiatric evaluation should be considered if the tilt table is normal, especially if associated with other psychiatric symptoms (anxiety, depression, fear, or dread). Carotid Dopplers and MRI of the brain should be reserved for people with bruits or focal neurologic signs. Stress testing is indicated if there is high risk for, or symptoms of, ischemic disease.

**330. The answer is b.** (*Mengel, pp 400-407.*) There are three common tremor syndromes. The tremor of Parkinson Disease is typically seen at rest and inhibited by movement. A classic essential tremor is generally bilateral, usually symmetric and either postural (elicited by holding the arm against gravity) or kinetic (more apparent during purposeful movement). An intention tremor is a subset of a kinetic tremor. Its amplitude will increase during visually guided movements. A tic is a brief, intermittent, unpredictable movement or sound; a hand chorea is unpredictable, irregular, nonrhythmic movement.

**331. The answer is c.** (*Mengel, pp 400-407.*) The glabella tap reflex is tested by percussing the patient's forehead. The orbicularis oculi muscle contracts causing both eyes to blink. The blinking normally stops after 5 to 10 repeated taps, but persistence of blinking is called Myerson sign and is common among patients with Parkinson disease. It is not, however, pathognomonic. It is not a prognostic indicator, and not associated with essential tremors.

**332. The answer is a.** (*Mengel, pp 400-407.*) Pharmacologic therapy has been shown to reduce morbidity and mortality in Parkinson disease. The monoamine oxidase B inhibitor selegiline has been shown to delay functional impairment and disease progression. Other therapies, including carbidopa-levodopa (a dopamine precursor), bromocriptine, pramipexole, and ropirinoles (all dopamine agonists) provide symptomatic relief only, and do not modify disease progression.

**333. The answer is b.** (*McPhee, pp 725-728.*) The classic presentation of vaginal candidiasis is vaginal itch with white "cheesy" exudate. White plaques usually adhere to the vaginal wall. The KOH preparation shows multiple hyphae. Treatment consists of topical azole applications or an oral one-time dose of fluconazole. To date, no data prove oral medications to be superior to topical medications.

**334. The answer is c.** (*South-Paul, pp 146-164.*) Recurrent yeast infections have been erroneously ascribed to many causes. They probably do not occur more frequently in diabetic women, but may be more difficult to eradicate in this population. Similarly, women with HIV may manifest or present with diffuse candidiasis that is difficult to eradicate, but not with recurrent infections. There is no convincing evidence that birth control pills cause infections. High-calorie diets and crude fiber have been associated with susceptibility to infection. Although not a true sexually transmitted disease, when a patient has frequent relapses of vaginal candidiasis, treatment of the partner may be considered, especially if he has balanitis.

**335. The answer is c.** (*McPhee, pp 725-728.*) The history and physical described are classic for trichomonas vaginalis. The classic “strawberry cervix” is a strong diagnostic clue. Trichomonads are seen on high power in the saline preparation, and appear as triangular cells with long tails, slightly larger than WBC. “Studded” epithelial cells (clue cells) are more consistent with bacterial vaginosis; “moth-eaten” cells (pseudo-clue cells) are seen in an acid-base disturbance of the vagina. Numerous WBC are more consistent with an upper genital infection, and hyphae are consistent with vaginal candidiasis.

**336. The answer is a.** (*McPhee, 725-728.*) The condition described is bacterial vaginosis. Clue cells, epithelial cells studded with bacteria, are diagnostically helpful. The treatment of choice is topical or oral metronidazole, with oral or topical clindamycin being an acceptable alternative. Doxycycline is used to treat *Chlamydia*. Clotrimazole is used to treat fungal infections. Imiquimod is an immunomodulating agent approved to treat HPV infection, and acyclovir treats herpetic infections.

**337. The answer is a.** (*Mengel, pp 435-438.*) Acute viral respiratory tract infections cause up to 50% of wheezing episodes in children less than 2 years of age. Risk factors include fall or winter season, history of atopy, daycare attendance, and passive smoke exposure. Pneumonia causes 33% to 50% of wheezing episodes in children, and most are also caused by viruses as well. Bronchiolitis accounts for less than 5% of all episodes of wheezing, but is important, especially in preterm infants. Aspiration is uncommon, and is less likely in the setting of viral infection symptoms. Asthma is common in children, but is not diagnosed after one episode of wheezing.



**338. The answer is d.** (*Mengel, pp 435-438.*) Wheezing is commonly heard in patients with CHF. Risk factors include hypertension, glucose intolerance, and smoking. Treatment should begin with diuresis. Antibiotics would be prescribed for an infection, epinephrine for a suspected allergic reaction, steroids for an asthma exacerbation, and anticoagulation if a PE is suspected.

**339. The answer is c.** (*Mengel, pp 435-438.*) When a patient presents with acute shortness of breath and an increased respiratory rate, PE must be ruled out. The patient in this case is taking oral contraceptives, increasing her risk for PE. After appropriate workup, anticoagulation should be initiated. An allergic reaction, asthma, or bronchitis would likely cause an abnormal lung examination.

**340. The answer is b.** (*Mengel, pp 435-438.*) Patients with a first episode of wheezing require a chest x-ray. Peak flow testing may be helpful in monitoring control of asthma, but are not useful in evaluating a first episode. Pulmonary function testing and a CBC may be needed, but a chest x-ray is an absolute necessity.

**341. The answer is e.** (*Mengel, pp 435-438.*) The patient described likely has GERD, a common cause of wheezing in the pediatric population. The gold standard test is a 24-hour pH probe. Endoscopy is invasive, requires sedation, and is usually reserved for patients unresponsive to medical management. A chest x-ray is unlikely to reveal the cause in this case, and a barium swallow is indicated if the physician is concerned about structural defects. Pulmonary function testing is difficult in this age group.

**342. The answer is b.** (*Mengel, pp 435-438.*) In patients with known asthma, chest x-rays are not required to evaluate each episode. A chest x-ray is indicated if the patient has fever, rhonchi, or sputum to rule out pneumonia. Peak flows do not confirm the diagnosis of asthma, but are useful to monitor the status of known lung disease. Pulmonary function tests may be needed, but are usually done in a pulmonary laboratory. A CBC may indicate infection, but would be less useful in this setting. Nasopharyngeal washes may be helpful in the pediatric population, but are not as helpful for adults.

# Chronic Conditions

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## Questions

**343.** A 42-year-old man is seeing you to discuss sexual concerns. He complains of being unable to achieve an erection, despite having strong interest in sexual activity. Which of the following is true?

- a. This is most often because of an unrecognized mood disorder.
- b. This is most often because of a lack of attraction for his partner.
- c. This is most often because of stressors in the home and interpersonal conflict.
- d. This is most often because of a vascular problem.
- e. This is most often because of alcohol abuse.

**344.** A 36-year-old man sees you to discuss a lack of sexual interest. He is not having sexual fantasies and is unmotivated to begin sexual activity. He does not report depressive symptoms and has no other physical complaints. His physical examination is normal. Which of the following laboratory tests is most appropriate?

- a. Total testosterone
- b. Free testosterone
- c. Thyroid-stimulating hormone (TSH)
- d. Prolactin
- e. Prostate-specific antigen (PSA)

**345.** You have diagnosed a 30-year-old woman with depression. She is concerned that medical treatment may cause sexual dysfunction. In order to avoid sexual side-effects, which antidepressant would be the best choice?

- a. Amitriptyline
- b. Paroxetine
- c. Citalopram
- d. Sertraline
- e. Bupropion

**346.** A 23-year-old man comes to your office to discuss premature ejaculation. He has had this condition since beginning sexual activity at 17 years of age. He has tried behavioral methods, but these have not been successful. Which of the following medications is most likely to help this condition?

- a. Alprostadil
- b. Fluoxetine
- c. Bupropion
- d. Sildenafil
- e. Atenolol

**347.** You are evaluating a 47-year-old man with erectile dysfunction. After a thorough history and physical examination, you order a morning free testosterone level. His level was low. What is the most appropriate next step?

- a. Begin testosterone injections.
- b. Begin topical testosterone replacement.
- c. Obtain follicle-stimulating hormone (FSH), luteinizing hormone (LH), and prolactin levels.
- d. Obtain a penile brachial index.
- e. Perform a nocturnal penile tumescence evaluation.

**348.** You are caring for a 32-year-old woman who is concerned about her sex life. She reports very little desire for sexual activity, and it's starting to interfere with her relationship. Upon questioning, she describes no sexual fantasies. Which of the following best describes her situation?

- a. She has hypoactive sexual desire disorder.
- b. She has sexual aversion disorder.
- c. She has sexual arousal disorder.
- d. She has dyspareunia.
- e. She has androgen deficiency.

**349.** You are caring for a woman who describes primary orgasmic dysfunction and comes to you for advice. Which of the following therapies has shown to be most effective in treating this condition?

- a. Directed self-stimulation
- b. The "stop-start" technique
- c. Group therapy
- d. Hypnotherapy
- e. Sensate focus

**350.** You are evaluating a 28-year-old man who is concerned about depression. He reports increased irritability, depressed mood, decreased enjoyment from usual activities, and sleep and appetite disturbances for 6 weeks. He reports a history of alcohol use, and currently has 6 beers a day on the weekdays, with up to 12 on the weekends. Which of the following is the most appropriate next step in treating his depression?

- a. Treat with a selective serotonin reuptake inhibitor (SSRI).
- b. Treat with bupropion.
- c. Recommend detoxification and abstinence.
- d. Recommend detoxification and abstinence and start an SSRI.
- e. Recommend detoxification and abstinence and start bupropion.

**351.** You suspect that a 50-year-old female patient is abusing alcohol. Which of the following is the most sensitive laboratory test to confirm this?

- a. Mean corpuscular volume (MCV)
- b. Alanine aminotransferase (ALT)
- c. Aspartate aminotransferase (AST)
- d.  $\gamma$ -Glutamyl transferase (GGT)
- e. Ethyl glucuronide (EtG)

**352.** You suspect that a 56-year-old male patient is abusing alcohol. Which of the following is the most specific laboratory test to confirm this?

- a. MCV
- b. ALT
- c. AST
- d. GGT
- e. lactate dehydrogenase (LDH)

**353.** An alcoholic patient of yours is interested in pharmacologic therapy to help him with his sobriety. His counselor recommended he try naltrexone, and he asks you how that medication works in alcoholism. Which of the following is the best answer for your patient?

- a. If the person taking naltrexone ingests alcohol, it causes an adverse reaction.
- b. Naltrexone reduces the reinforcing effects of alcohol.
- c. Naltrexone blocks the effects of alcohol by binding to alcohol-receptor sites on cells.
- d. Naltrexone saturates the alcohol-receptor sites on cells by acting as an alcohol agonist.
- e. Naltrexone changes the binding sites on alcohol, making it unable to bind to cells.

**354.** An alcoholic patient of yours is interested in pharmacologic therapy to help him in his sobriety. His counselor recommended he try disulfiram, and he asks you how that medication works in alcoholism. Which of the following is the best answer for your patient?

- a. If the person taking disulfiram ingests alcohol, it causes an adverse reaction.
- b. Disulfiram reduces the reinforcing effects of alcohol.
- c. Disulfiram blocks the effects of alcohol by binding to alcohol receptor sites on cells.
- d. Disulfiram saturates the alcohol receptor sites on cells by acting as an alcohol agonist.
- e. Disulfiram changes the binding sites on alcohol, making it unable to bind to cells.

**355.** Your patient asks you about pharmacotherapy to help him to prevent relapse of alcohol abuse. Which of the following medications is most effective for this purpose?

- a. Disulfiram
- b. Naltrexone
- c. Serotonergic drugs
- d. Acamprosate
- e. Tricyclics

**356.** You are caring for a patient who would like to quit smoking. She failed nicotine patches. Which of the following is an appropriate next step?

- a. Add nicotine gum to the patch.
- b. Use clonidine.
- c. Use a tricyclic antidepressant.
- d. Use an SSRI.
- e. Use a selective serotonin and norepinephrine reuptake inhibitor.

**357.** Your patient is thinking of using varenicline (Chantix) to help with smoking cessation. Which of the following is true of this medication?

- a. Varenicline has many drug interactions.
- b. The dose of this medication would need to be changed in patients with liver disease.
- c. Common side effects include abnormal dreams.
- d. This medication is contraindicated in patients with a seizure disorder.
- e. Patients cannot smoke while taking varenicline.

**358.** You are currently evaluating a patient for unstable angina. He takes phenytoin for a seizure disorder, has high cholesterol, and is a current smoker. Which of the following would be the best therapeutic option to help with his smoking cessation plan?

- a. Behavioral intervention
- b. Nicotine replacement
- c. Bupropion
- d. Varenicline
- e. Clonidine

**359.** In a preemployment screen, one of your patients tested positive for cocaine use. He presents to you and would like to discontinue his use, but reports having significant problems with the withdrawal symptoms. Which of the following symptoms is expected from cocaine withdrawal?

- a. Tachycardia
- b. Hypertension
- c. Depression
- d. Paranoia
- e. Insomnia

**360.** You are caring for a 35-year-old woman in the hospital, admitted for cellulitis. She also has a long history of migraine headaches. On day 2 of her hospitalization, she becomes diaphoretic, restless, and irritable. Within hours, she is complaining of severe pain, abdominal cramps, and diarrhea. Which of the following would most likely be present in her urine toxicology screen?

- a. Cocaine
- b. Marijuana
- c. Opiates
- d. 3,4-Methylenedioxymethamphetamine (MDMA or ecstasy)
- e. Benzodiazepines

**361.** A 64-year-old woman comes to see you as a new patient. She is interested in finding the cause of her hand deformities. Upon inspection, you see the joints in her hands are nodular and enlarged as in the picture below. She does not complain of significant disability. Which of the following laboratory findings is likely in her case?



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- a. Her laboratory evaluation will likely be normal.
- b. Her serum uric acid level will likely be elevated.
- c. Her sedimentation rate will likely be elevated.
- d. Her C-reactive protein level will likely be elevated.
- e. Her rheumatoid factor will likely be elevated.

**362.** You are evaluating a 62-year-old man who is complaining of joint pain. His pain involves his left knee, right ankle, and both hands. He reports that his symptoms have been present for years, but are worsening. He has more pain with activity. On examination, you note some swelling in the joints with mild tenderness and crepitus. Which of the following is the most likely cause of his symptoms?

- a. Rheumatoid arthritis
- b. Osteoarthritis
- c. Gout
- d. Tendonitis
- e. Fibromyalgia

**363.** A 43-year-old obese patient comes to your office with a painful, inflamed, swollen elbow. He reports that the pain began suddenly last evening, without a known precipitant or trauma. The pain is exquisite, and does not allow him to move his elbow at all—in fact, even the pressure of his bed sheet on his elbow was painful. On examination, he has an elbow effusion with warmth, erythema, and intense pain with movement. Which of the following is most likely the cause?

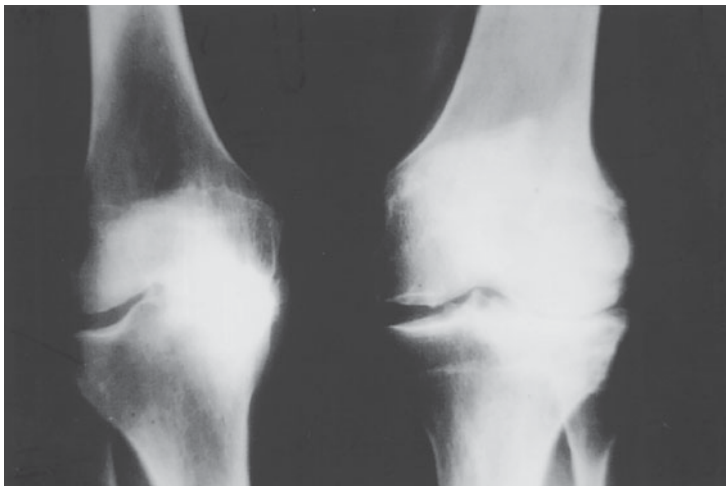
- a. Rheumatoid arthritis (RA)
- b. Osteoarthritis
- c. Gout
- d. Stress fracture
- e. Cellulitis

**364.** You are caring for a 31-year-old woman who complains of joint pain. She notes that her hands seem to be stiff in the morning, and that she seems to improve with time, movement, and heat. She reports more fatigue than usual as well. On examination, her wrists are swollen bilaterally, as are several of her metacarpal-phalangeal joints on each hand. You perform an appropriate workup and determine that her diagnosis is rheumatoid arthritis. Which of the following is the most appropriate next step?

- a. Control symptoms with nonsteroidal anti-inflammatory drugs (NSAIDs).
- b. Control symptoms with opiates.
- c. Use steroid treatment for flares, and NSAIDs for daily use.
- d. Use steroid injections to keep flares under control.
- e. Refer to rheumatology.



**365.** A 70-year-old man with diabetes and long-term osteoarthritis in his knees is presenting for follow-up. He reports that his pain has become much more severe, and says he is having difficulty with ambulation and is becoming fairly inactive. In the past, he tried ibuprofen and naproxen, but those offered limited improvement and he developed secondary ulcers. He says that taking acetaminophen is like “taking a sugar pill”—it offers no help. He had some relief from steroid injections 3 months ago, and again 1 month ago, but they were short-lived. A recent x-ray is shown below. Which of the following is the next most appropriate step in the treatment of his condition?



*(Reproduced, with permission, from South-Paul J. Current Diagnosis & Treatment in Family Medicine. 1st ed. New York, NY: McGraw-Hill; 2004:267).*

- Use oral steroids.
- Try another steroid injection.
- Inject the knee joint with ketorolac (Toradol).
- Inject hyaluronic acid into his knee joints.
- Refer for knee replacements.

**366.** A 66-year-old diabetic man comes to your office with acute monoarticular arthritis. You suspect gout. Which of the following tests is the most helpful in establishing the diagnosis?

- a. Sedimentation rate
- b. C-reactive protein
- c. Serum uric acid levels
- d. Evaluation of joint aspirate
- e. Twenty-four-hour urine collection to measure uric acid excretion

**367.** You are evaluating a patient with knee swelling and pain. You perform an arthrocentesis to help determine the diagnosis. The fluid analysis reveals rhomboid-shaped positively birefringent crystals. Which of the following is the most likely diagnosis?

- a. Gout
- b. Pseudogout
- c. Infectious arthritis
- d. Osteoarthritis
- e. Rheumatoid arthritis

**368.** You are evaluating a patient with a painful, swollen knee. You perform arthrocentesis and find cloudy fluid. Analysis reveals a white blood cell (WBC) count of  $50,000/\text{mm}^3$  with more than 90% identified as polymorphonuclear (PMN) leukocytes. The glucose level in the joint fluid is decreased. Which of the following is the most likely diagnosis?

- a. Gout
- b. Pseudogout
- c. Infectious arthritis
- d. Osteoarthritis
- e. Rheumatoid arthritis

**369.** You are evaluating a patient with a painful, swollen knee. Joint aspirate reveals clear fluid with a WBC count of  $5000/\text{mm}^3$ , 20% of which are PMN leukocytes. Which of the following is the most likely diagnosis?

- a. Gout
- b. Pseudogout
- c. Infectious arthritis
- d. Osteoarthritis
- e. Rheumatoid arthritis

**370.** The joint aspirate from the inflamed first metatarsal-phalangeal joint of a 35-year-old woman reveals needle-shaped negatively birefringent crystals. The patient is intolerant to nonsteroidals. Which of the following is the most appropriate initial treatment?

- a. Colchicine
- b. Corticosteroids
- c. Opiates
- d. Allopurinol
- e. Probenecid

**371.** You are caring for a 42-year-old woman who was diagnosed with rheumatoid arthritis (RA) 8 years ago. You are concerned about potential extra-articular manifestations of her disease. Which of the following signs or symptoms, if present, would signal extra-articular manifestations of RA?

- a. Cough
- b. Congestive heart failure (CHF)
- c. Gastrointestinal (GI) distress
- d. Peripheral neuropathy
- e. Renal failure

**372.** You are seeing a patient in the office for the first time. She has had recent episodic shortness of breath and is concerned that she has developed asthma. Which of the following features, if present, is the strongest predisposing factor in the development of asthma?

- a. Family history of asthma
- b. History of atopy
- c. A history of childhood pneumonia
- d. Exposure to cigarette smoke
- e. Exposure to environmental pollution

**373.** You are seeing a 19-year-old college student complaining of recurrent and persistent cough. She has been treated for “bronchitis” several times, and you are concerned that her true diagnosis is asthma. Which of the following is most important in the diagnosis of asthma?

- a. History
- b. Allergy testing
- c. Chest x-ray
- d. Pulmonary function tests with and without bronchodilator therapy
- e. Provocative testing with methocholine

**374.** You are caring for a 30-year-old woman who has had asthma since childhood. Currently, she reports symptoms three or four times a week, but never more than once a day. Sometimes her symptoms cause her to skip her usual exercise regimen. She wakes in the night approximately three or four times a month to use her inhaler and return to bed. Which of the following classifications best characterizes her asthma?

- a. Mild intermittent
- b. Moderate intermittent
- c. Mild persistent
- d. Moderate persistent
- e. Severe persistent

**375.** You are caring for an 18-year-old man with asthma. He smokes, and reports needing to use his short-acting bronchodilator daily. He gets flares of asthma at least twice a week, and while some days are relatively symptom free, some exacerbations may last several days. He wakes up at least once a week with symptoms. Which of the following classifications best characterizes his asthma?

- a. Mild intermittent
- b. Moderate intermittent
- c. Mild persistent
- d. Moderate persistent
- e. Severe persistent

**376.** You are discussing asthma control with a 22-year-old patient. She monitors her therapy closely and reports that her current peak flows are at about 80% of her best levels. Which of the following is the best approach to take at this point?

- a. Commend the patient on her diligent monitoring and excellent control.
- b. Reassure the patient that this is well within the normal range.
- c. Review the patient's medications and technique and review environmental control.
- d. Have the patient take additional medication, or add a medication to her regimen.
- e. Consider hospitalization.

**377.** You are caring for a young woman who has had mild intermittent asthma for years. She uses a short-acting bronchodilator as needed, but in the past has only needed therapy once or twice a month. Over the past 2 months, she has noted that she is using her inhaler more. In fact, she uses it at least three times a week and on occasion has had to wake up in the middle of the night to use her inhaler. Which of the following is the most appropriate treatment option at this point?

- a. Change her short-acting  $\beta$ -agonist from albuterol (Proventil, Ventolin) to pirbuterol (Maxair).
- b. Add a long-acting  $\beta$ -agonist.
- c. Add an inhaled corticosteroid.
- d. Add a leukotriene receptor antagonist.
- e. Add cromolyn (Intal).

**378.** You are caring for a man with asthma. He is currently taking an inhaled corticosteroid twice daily and using his short-acting  $\beta$ -agonist as needed. Over the past 3 months, he has required escalating doses of his inhaled corticosteroid, and now he is at the maximum dosage, still using his “rescue” inhaler more than he would like. Which of the following is the best medication to add to his regimen?

- a. A burst and rapid taper of oral steroids
- b. A long-acting  $\beta$ -agonist
- c. Cromolyn (Intal)
- d. Ipratropium (Atrovent)
- e. Theophylline

**379.** You are caring for a 19-year-old man who has been treated for mild intermittent asthma since childhood. He has been controlled using a short-acting bronchodilator as needed. Over the past month, he has been using his inhaler more than four times a week, and has had to wake up in the middle of the night to use his inhaler on three occasions. In the past, he was intolerant of the side effects associated with an inhaled corticosteroid. Which of the following is the most appropriate treatment option?

- a. Long-acting  $\beta$ -agonist
- b. Leukotriene receptor antagonist
- c. Cromolyn (Intal)
- d. Theophylline
- e. Oral corticosteroids

**380.** You are caring for a 22-year-old with moderate persistent asthma who has been well-controlled for several months. He developed an upper respiratory infection and his control worsened. He has not had a fever, but is coughing up sputum. In addition to stepping up his therapy, which of the following is true?

- a. You should begin a course of amoxicillin.
- b. You should begin a course of amoxicillin/clavulanate.
- c. You should begin a course of azithromycin.
- d. You should begin a course of ciprofloxacin.
- e. No antibiotics are necessary.

**381.** A 22-year-old man is seeing you to discuss his low back pain. He is athletic and exercises regularly. He denies any inciting event, does not have pain with movement, and denies radiation of the pain. Given this information, which of the following is the most likely diagnosis?

- a. Spondylolisthesis
- b. Low back strain
- c. Degenerative osteoarthritis
- d. Lumbar disk herniation
- e. Neoplasm

**382.** You are seeing a 40-year-old woman who reports the gradual onset of low back pain over several months. The pain is associated with morning stiffness that improves throughout the day. On examination, there are no neurologic deficits. Which of the following is the most likely cause?

- a. Back strain
- b. Inflammatory arthropathy
- c. Disk herniation
- d. Compression fracture
- e. Neoplasm

**383.** A 41-year-old sedentary man with frequent flare-ups of back pain presented to you 6 weeks ago with the acute onset of low back pain radiating to the left leg. His neurologic examination at the time was normal, but he did not respond to conservative therapy. X-rays are normal. Which of the following is the most appropriate next step?

- a. Flexion and extension radiographs
- b. Magnetic resonance imaging (MRI)
- c. Electromyography
- d. Bone scan
- e. A complete blood count (CBC) and erythrocyte sedimentation rate (ESR)

**384.** A 30-year-old woman with frequent back problems was putting her groceries into her trunk and had a recurrence of low back pain. She has tried acetaminophen for 2 days without relief. On examination, her range of motion is limited, and she has tenderness to palpation of the lumbar paraspinal muscles. Which of the following treatment options is best?

- a. NSAIDs and return to normal activity
- b. Opiate analgesia and limited activities
- c. Oral corticosteroids
- d. Bed rest for 3 to 5 days
- e. Spinal traction

**385.** You are caring for a 48-year-old construction manager with a history of chronic back pain due to osteoarthritis of the lumbar spine. His symptoms have been controlled on nonsteroidal anti-inflammatory medications (NSAIDs) for several years, but they are no longer as effective as they once were. Imaging studies have not changed and his laboratory work is normal. You are considering adjusting his pain control regimen. Of the following, which would be the best option?

- a. Add a muscle relaxant to his NSAID.
- b. Add an opioid to his NSAID.
- c. Add a tricyclic antidepressant to his NSAID.
- d. Add a selective serotonin reuptake inhibitor to his NSAID.
- e. Schedule him for facet joint corticosteroid injections.

**386.** You are assessing a 59-year-old patient with an 80-pack-year history of smoking cigarettes. He stopped smoking 1 year ago. He reports a cough productive of white frothy sputum for the past 4 months. Reviewing his chart, you discover that he had a similar presentation last winter, with a cough that lasted more than 3 months. Given this information, which of the following tests is necessary for him?

- a. Complete blood count
- b. Arterial blood gas measurements
- c. Office spirometry
- d. Computerized tomographic scans of the chest
- e. An electrocardiogram

**387.** You have diagnosed a 66-year-old female patient of yours with chronic obstructive pulmonary disease (COPD). Which of the following therapies has been shown to improve the natural history of COPD?

- a. Smoking cessation
- b. Bronchodilators
- c. Inhaled steroids
- d. Antibiotics
- e. Supplemental oxygen

**388.** You are caring for a 68-year-old smoker who complains of increasing shortness of breath with exertion and at rest. You observe that he is somewhat “barrel-chested,” he breathes with pursed lips, and leans forward resting on his elbows when sitting in your office. On examination, he has decreased breath sounds and distant heart sounds. You are concerned about COPD and order office spirometry. Which of the following measurements is most sensitive to diagnose COPD?

- a. Total lung capacity (TLC)
- b. Forced vital capacity (FVC)
- c. Forced expiratory volume in 1 second (FEV<sub>1</sub>)
- d. Forced expiratory flow rate over the interval from 25% to 75% of the total FVC (FEF<sub>25%-75%</sub>)
- e. FEV<sub>1</sub>:FVC ratio

**389.** A 62-year-old smoker comes to your office for treatment. After a thorough history and physical examination, you believe he has chronic obstructive pulmonary disease. He quit smoking 8 months ago, but has not had any other treatment. Which of the following is the best first-line therapy for his condition?

- a. A short-acting  $\beta$ -agonist (albuterol)
- b. An inhaled anticholinergic (ipratropium)
- c. An inhaled corticosteroid
- d. Oral theophylline
- e. Oxygen

**390.** You are treating a patient with COPD for an acute exacerbation. Assuming he has no allergies to medications, which of the following is true regarding antibiotic treatment in this case?

- a. He should be prescribed amoxicillin.
- b. He should be prescribed trimethoprim-sulfamethoxazole.
- c. He should be prescribed doxycycline.
- d. He should be prescribed azithromycin.
- e. No antibiotics are necessary.



**391.** You are seeing a 65-year-old woman with a history of diabetes and hypertension. She is overweight and does not exercise regularly. You are concerned that she may have renal failure, given her risk factors. Which of the following is the best test to detect the presence of renal insufficiency in this patient?

- a. Her blood urea nitrogen (BUN) level
- b. Her serum creatinine level
- c. Her BUN to creatinine ratio
- d. Her calculated or estimated glomerular filtration rate (GFR)
- e. Her urine microalbumin level

**392.** You are following a 54-year-old woman with diabetes. She has been very “brittle” and difficult to control. You are monitoring her urine microalbumin level and want to be alert to other changes that would suggest chronic renal insufficiency. If the patient were to develop chronic renal failure, which laboratory abnormality would you most likely see first?

- a. Hyperkalemia
- b. Hyponatremia
- c. Hyperphosphatemia
- d. Fall in plasma bicarbonate level
- e. Anemia

**393.** You are seeing a 43-year-old hypertensive patient in your office. He is well-controlled with hydrochlorothiazide and is seeing you for a routine evaluation. His blood pressure at the visit is 118/76 mm Hg. Laboratory evaluation reveals a normal creatinine and a GFR greater than 90 mL/min, but he does have microalbuminuria. Which of the following interventions is indicated in this patient?

- a. Commend him on his excellent control and make no changes.
- b. Work to achieve better blood pressure control through diet and exercise.
- c. Increase his hydrochlorothiazide dose.
- d. Add an angiotensin-converting enzyme (ACE) inhibitor.
- e. Check a glycosolated hemoglobin level.

**394.** You are following a 54-year-old patient with hypertension and diabetes in your office. Despite good blood pressure and glycemic control, his GFR has started to decrease. GFR measurement was 74 mL/min 3 months ago. At this visit, GFR is 55 mL/min. Creatinine is within normal limits, and his serum potassium is 5.2 mmol/L (normal is up to 5.1 mmol/L). The patient denies any changes in urination or other problems. Which of the following is most appropriate at this stage?

- a. See the patient more frequently, at least monthly.
- b. Increase his ACE inhibitor.
- c. Add diuretic therapy.
- d. Refer to a nephrologist.
- e. Refer to a transplant surgeon.

**395.** You are treating a patient with chronic and progressing renal disease. His GFR is decreasing and you fear he will need dialysis sometime within the next year. Which of the following will be the most likely cause of death in this patient?

- a. Renal failure
- b. Liver failure
- c. Neurovascular disease
- d. Cardiovascular disease
- e. Coagulopathy

**396.** You have been treating a patient for chronic pain since she finished her chemotherapy for breast cancer. She describes the pain as “pins and needles” in her lower legs. Based on her comments, what is the best description for this pain?

- a. Hypoesthesia
- b. Hyperesthesia
- c. Paresthesia
- d. Allodynia
- e. Nociceptive pain

**397.** You are treating a 48-year-old woman with arthritis in her knees. The pain keeps her from exercising, and she is becoming concerned about the limitations in her activity. Of the following, which would be the most appropriate first-line agent for her pain control?

- a. Ibuprofen, 600 mg tid
- b. Celecoxib, 200 mg daily
- c. Tramadol, 50 mg q4-6h
- d. Amitriptyline, 50 mg at night
- e. Gabapentin, 300 mg tid

**398.** You are treating a 55-year-old obese diabetic for his neuropathy. It's extremely painful and not responsive to NSAID therapy. Of the following, which is the best option for pain control?

- a. Celecoxib, 200 mg daily
- b. Tramadol, 50 mg q4-6h
- c. Amitriptyline, 50 mg at night
- d. Oxycodone 15-30 mg q4-6h
- e. Fentanyl patch, 25 µg/q72h

**399.** You are treating a patient for chronic pain. She is taking NSAIDs, anticonvulsants, and a fairly high dose of long-acting opioid, but her pain is becoming increasingly hard to control. You are reluctant to increase her dose of narcotic, and she is already on maximal doses of her other therapies. Assuming the patient's pain is legitimate, which of the following options is most appropriate?

- a. Discontinue the opioids.
- b. Increase the opioids.
- c. Change to a lower dose of a different opioid.
- d. Add a second anticonvulsant.
- e. Add an antidepressant.

**400.** You are evaluating a 48-year-old man with liver disease. His laboratory evaluation is as follows:

AST:	268 U/L (H)
ALT:	114 U/L (H)
Alk Phos:	140 U/L (H)
Bilirubin:	2.3 mg/dL (H)
GGT:	220 U/L (H)

Which of the following is the most likely cause of his liver disease?

- a. Autoimmune hepatitis
- b. Hepatitis B
- c. Hepatitis C
- d. Hemochromatosis
- e. Alcoholic hepatitis

**401.** You are evaluating a 45-year-old man with liver disease. His laboratory evaluation reveals the following:

AST:	52 U/L (H)
ALT:	56 U/L (H)
Alkaline phosphatase:	132 U/L (H)
GGT:	188 U/L (H)
Albumin:	2.9 g/dL (L)
Bilirubin:	3.5 mg/dL (H)
Prothrombin time:	14.9 seconds (H)

Which of his laboratory results suggests that his liver disease is chronic?

- a. AST
- b. ALT
- c. GGT
- d. Alkaline phosphatase
- e. Albumin

**402.** You care for a patient who contracted hepatitis C after a blood transfusion many years ago. Her liver disease has progressed, and she now has end-stage disease. Which of the following will be the most likely cause of death in this patient?

- a. Liver failure
- b. Hepatocellular carcinoma
- c. Bleeding varices
- d. Encephalopathy
- e. Renal failure

**403.** You are taking care of a 47-year-old woman with cirrhosis. She asks you about transplantation as a definitive treatment option. Which of the following is an absolute contraindication to transplantation?

- a. Active alcoholism
- b. Portal vein thrombosis
- c. Hepatitis B surface antigen positivity
- d. HIV positivity
- e. Extensive previous abdominal surgery

**404.** You have diagnosed a 66-year-old woman with heart failure. She has a history of hypertension, but has never had heart failure before. Which of the following tests is routinely indicated in the initial evaluation of a person with a new diagnosis of heart failure?

- a. Echocardiogram
- b. Holter monitor
- c. Left heart catheterization
- d. Treadmill stress test
- e. Pharmacologic stress test

**405.** You are seeing a patient who was discharged from the hospital. She initially presented to the emergency room with dyspnea and was found to be in CHF. They admitted her for diuresis and initiation of appropriate first-line therapy. Since being released, she reports that she is comfortable at rest, but that ordinary activity results in mild dyspnea. According to the New York Heart Association (NYHA) functional classification, which class of heart failure best describes this patient?

- a. Class I
- b. Class II
- c. Class III
- d. Class IV
- e. Class V

**406.** A 62-year-old woman comes to your office complaining of dyspnea. She has a history of COPD, hypertension, and diabetes. She also smokes and drinks heavily. Her evaluation reveals that she is in heart failure. Which of the following interventions will lead to functional improvement in this patient?

- a. Optimizing the treatment of her COPD
- b. Optimizing the treatment of her hypertension
- c. Optimizing her glycemic control
- d. Discontinuing cigarette smoking
- e. Discontinuing alcohol use

**407.** You have diagnosed a 49-year-old man with CHF because of left ventricular systolic dysfunction. In addition to acute diuresis, which of the following is the best first-line agent to use for treatment, in the absence of contraindications?

- a. ACE inhibitors
- b.  $\beta$ -Blockers
- c. Calcium channel blockers
- d. Nitrates
- e. Hydralazine

**408.** You have been treating a 68-year-old man suffering from chronic CHF with furosemide (Lasix), a  $\beta$ -blocker, and an ACE inhibitor. Despite this therapy, he continues with refractory edema. In his baseline state, he is comfortable at rest, but experiences some symptoms of heart failure with ordinary activity. Which of the following would be the best diuretic to add?

- a. Hydrochlorothiazide
- b. Triamterene
- c. Hydrochlorothiazide and triamterene combined (Dyazide, Maxzide)
- d. Metolazone (Zaroxolyn)
- e. Spironolactone (Aldactone)

**409.** You are considering adding an angiotension II receptor blocker (ARB) to the regimen of one of your patients with congestive heart failure. Which of the following statements is true regarding the use of ARBs in CHF?

- a. ARBs and ACE inhibitors have the same effects on the neurohormonal mechanisms involved in heart failure.
- b. Adding an ARB to an ACE inhibitor reduces mortality in patients with CHF.
- c. Adding an ARB to an ACE inhibitor can reduce hospitalizations in patients with CHF.
- d. Using an ARB instead of an ACE inhibitor increases mortality in CHF.
- e. Using an ARB instead of an ACE inhibitor increases hospitalizations in patients with CHF.

**410.** You are treating a patient for heart failure because of systolic dysfunction with daily diuretics and an ACE inhibitor. He is continuing to have symptoms with activity, but they do not seem to be related to volume overload. Adding which of the following medications has been shown to reduce symptoms and improve mortality?

- a. Metolazone (Zaroxolyn)
- b. Spironolactone (Aldactone)
- c. Metoprolol (Toprol XL)
- d. Nifedipine (Procardia)
- e. Digoxin (Lanoxin)

**411.** You are caring for a 56-year-old woman who cares for her 78-year-old mother-in-law who suffers with Alzheimer disease. She asks about her risk for the disease. Of the following, which is the strongest risk factor for the development of Alzheimer disease?

- a. Family history
- b. Female gender
- c. Advancing age
- d. Low levels of education
- e. Cardiovascular risk factors

**412.** You are concerned that one of your 65-year-old patients is developing dementia. Which of the following, if present, would lead you to suspect dementia rather than delirium or depression?

- a. Acute onset of symptoms
- b. Difficulty with concentration
- c. Signs of psychomotor slowing
- d. Good effort with testing, but wrong answers
- e. Patient complaint of memory loss

**413.** You are caring for a 79-year-old woman with symptoms suggesting Alzheimer disease. Which of the following clinical features of Alzheimer disease is most likely to remain intact until the late stages of the disease?

- a. The ability to recall new information
- b. Word-finding ability
- c. The ability to draw complex figures (intersecting boxes or a clock)
- d. The ability to calculate (balance a checkbook)
- e. Appropriate social behavior

**414.** The daughter of one of your patients accompanies her mother to the office to discuss her concerns. The mother seems to have had progressive cognitive failure over the last year. According to the daughter, she has become less able to remember things or care for herself. Which of the following would be most helpful in the diagnosis of Alzheimer disease?

- a. A mini-mental status examination
- b. Computed tomography of the brain
- c. Magnetic resonance imaging of the brain
- d. Lumbar puncture
- e. Blood work including serum chemistries, thyroid function testing, vitamin B<sub>12</sub> levels, a rapid plasma regain, and liver function tests

**415.** You decide to treat a 72-year-old man for Alzheimer dementia. You choose to use donepezil (Aricept), and begin therapy. With respect to disease progression, which of the following statements best describes donepezil's effect on Alzheimer dementia?

- a. It dramatically slows the progression of neurodegeneration.
- b. It modestly slows the progression of neurodegeneration.
- c. It has no effect on the progression of neurodegeneration.
- d. It modestly increases the progression of neurodegeneration.
- e. It dramatically increases the progression of neurodegeneration.

**416.** You are treating a patient with the classic signs of dementia including cognitive decline. His caretaker reports that he has been having complex visual hallucinations and a tremor. On examination, he appears to have masked facies, has a slight tremor, and a shuffling gait. Which of the following medications should be avoided in this case?

- a. Cholinesterase inhibitors
- b. SSRI
- c. Tricyclic antidepressants
- d. Antipsychotics
- e. Benzodiazepines

**417.** You are caring for a patient who appears to have advanced Alzheimer dementia. Which of the following medications has been shown to result in statistically significant benefit in advanced cases of dementia?

- a. Donepezil
- b. Galantamine
- c. Rivastigmine
- d. Memantine
- e. Ginkgo biloba



**418.** You are performing a screening physical examination on a 47-year-old man. He is generally healthy, and his review of systems is negative. His mother has type 2 diabetes, and he is overweight. Which of the following is generally accepted as the test of choice to screen for type 2 diabetes?

- a. A random glucose test
- b. A fasting glucose
- c. A urinalysis to screen for glycosuria
- d. A 1-hour glucose tolerance test
- e. A 3-hour glucose tolerance test

**419.** You are evaluating a 36-year-old obese woman who complains of fatigue. She denies polydipsia, polyuria, polyphagia, or weight loss. Which of the following laboratory reports confirms the diagnosis of diabetes?

- a. A random glucose reading of 221 mg/dL
- b. A random glucose reading of 221 mg/dL, and another, on a later date, of 208 mg/dL
- c. A fasting glucose measurement of 128 mg/dL
- d. A glucose reading, taken 2 hours after a 75-g glucose load, of 163 mg/dL
- e. A fasting glucose of 114 mg/dL, and a reading of 184 mg/dL 2 hours after a 75-g glucose load

**420.** An 18-year-old morbidly obese patient in your office is found to have a fasting glucose of 314 mg/dL. Which of the following test results would indicate that he is a type 1 diabetic?

- a. Low levels of C-peptide
- b. Markedly elevated levels of C-peptide
- c. Elevated levels of microalbumin in the urine
- d. A markedly elevated hemoglobin A<sub>1C</sub>
- e. Nerve conduction studies showing mild peripheral neuropathy

**421.** You are managing a 36-year-old woman with a new diagnosis of type 2 diabetes. Her hemoglobin A<sub>1C</sub> was 7.2% at diagnosis. Her subsequent sugars were well-controlled using metformin, 1000 mg twice daily. At her visit 3 months later, her blood pressure is 100/72 mm Hg, her hemoglobin A<sub>1C</sub> is 6.0%, but her microalbumin screen is positive. Which of the following is the most appropriate response?

- a. Continue weight loss and recheck in 3 months.
- b. Limit dietary protein intake.
- c. Intensify diabetic therapy to more tightly control glucose.
- d. Initiate therapy with an ACE inhibitor.
- e. Refer to nephrology.

**422.** A 44-year-old man is seeing you for a routine diabetic check. He was diagnosed with type 2 diabetes 2 years ago. He is worried because his grandmother went blind as a complication from her diabetes. Which of the following statements about diabetic retinopathy is true?

- a. The risk of retinopathy increases with increased hemoglobin A<sub>1c</sub> levels.
- b. It generally takes 10 to 20 years to see signs of retinopathy in a diabetic patient.
- c. A daily aspirin decreases the risk of retinopathy development.
- d. The first sign of retinopathy is usually the growth of new vessels on the retina.
- e. Retinopathy is an uncommon cause of visual loss in this day and age.

**423.** You are seeing an African-American man with newly diagnosed diabetes. His blood pressure at the last visit was 118/76 mm Hg, and at this visit it is 112/72 mm Hg. Which of the following statements is true regarding the use of an ACE inhibitors in this patient?

- a. An ACE inhibitor should be added to his regimen because he is diabetic, regardless of his blood pressure.
- b. An ACE inhibitor should be added to his regimen based on his blood pressure readings.
- c. An ACE inhibitor should not be added to his regimen unless his blood pressure goes above 120 systolic.
- d. An ACE inhibitor should not be added to his regimen unless he has microalbuminuria.
- e. An ACE inhibitor should not be given to this patient if his creatinine is elevated.

**424.** You are following a type 2 diabetic woman in her fifties. Six months ago, you checked her lipid profile. At that time, her total cholesterol was 245 mg/dL, her low-density lipoprotein (LDL) was 148 mg/dL, her high-density lipoprotein (HDL) was 30 mg/dL, and her triglycerides were 362. She has tried lifestyle modifications, but despite losing weight and exercising, her profile hasn't substantially changed. Which of the following is the first-line treatment for this patient?

- a. Continued lifestyle modifications
- b. A 3-hydroxy-3-methylglutaryl-CoA (HMG-CoA) [P1] reductase inhibitor (a "statin")
- c. Niacin
- d. Fibric acid derivatives
- e. Bile acid resin

**425.** A 39-year-old diabetic man asks you questions about his diet. Which of the following is true?

- a. A high-fiber diet improves glycemic control
- b. A low-carbohydrate diet improves glycemic control
- c. A high-protein diet improves glycemic control
- d. Sucrose should not be included in the diabetic diet
- e. A formalized dietary program is more likely to produce long-term sustained effects

**426.** A 44-year-old African American with type 2 diabetes transfers care to you. Reviewing her records, you find she is on the maximum dose of sulfonylurea, but her hemoglobin A<sub>1C</sub> is 9.2% (H). Review of her baseline laboratory tests reveals normal liver enzymes and a creatinine of 2.3 mg/dL. Which of the following management options would be most beneficial?

- a. Change to another sulfonylurea.
- b. Add a biguanide.
- c. Add a meglitinide.
- d. Add a thiazolidinedione.
- e. Add an  $\alpha$ -glucosidase inhibitor.

**427.** A 48-year-old woman has been treated for type 2 diabetes for 6 years with metformin 2000 mg daily, and glyburide 10 mg daily. She is modestly compliant with her diet, medications, and exercise. She is 69 in tall and weighs 278 lb. Her most recent HbA<sub>1C</sub> is 8.2% which has been relatively unchanged over the past 18 months. You are considering adding exenatide (a GLP-1 [glucagon-like peptide 1] receptor agonist) to her regimen. Which of the following most accurately reflects your patient's expected response to this addition to her regimen?

- a. Her HbA<sub>1C</sub> would be expected to decrease by 2.0%.
- b. Her HbA<sub>1C</sub> would be expected to decrease by 1.6%.
- c. Her HbA<sub>1C</sub> would be expected to decrease by 1.2%.
- d. Her HbA<sub>1C</sub> would be expected to decrease by 0.8%.
- e. Her HbA<sub>1C</sub> would be expected to decrease by 0.4%.

**428.** You have been treating a 46-year-old woman for type 2 diabetes for 2 years with an insulin regimen. She is compliant with her diet and medications, and exercises regularly. She is 65 in tall and weighs 200 lb. Her most recent HbA<sub>1C</sub> is 9.0% which is elevated from 8.8% 3 months ago. When you adjusted her insulin regimen in the past, she has hypoglycemic episodes, so at her visit 2 weeks ago, you added the insulin-sensitizing agent pioglitazone to her regimen, and decreased her insulin dosage by 50%. The patient presents today complaining of a problem that she attributes to the new medication. Which of the following is the most likely complaint?

- a. Symptomatic hypoglycemia
- b. Edema and weight gain
- c. Cough
- d. Paradoxical hyperglycemia
- e. GI intolerance

**429.** A 48-year-old man with type 2 diabetes returns for a follow-up appointment. He currently takes metformin but is not as well-controlled as he'd like to be. He'd like to know more about sitagliptin (Januvia). Which of the following best explains its mechanism of action?

- a. Inhibits glucagon release
- b. Increases the sensitivity of the body to insulin
- c. Inhibits hepatic gluconeogenesis
- d. Enhances gastric emptying
- e. Prolongs the action of endogenously released GLP-1

**430.** You are caring for a type 2 diabetic whose measures of control have been worsening despite maximal doses of oral medications. You are considering adding insulin therapy to help with her post-prandial hyperglycemia and want to start a preparation with a rapid onset of action. Which of the following insulin types has the most rapid onset of action?

- a. Aspart (Novolog)
- b. Regular
- c. Neutral protamine hagedorn (NPH)
- d. Detemir (Levemir)
- e. Glargine (Lantus)

**431.** You are thinking about starting a type 2 diabetic on insulin therapy to improve her glucose control. You would like to provide her with steady insulin action without much of a peak time. Which of the following insulin preparations provides the most stable insulin coverage without a peak time of maximum activity?

- a. Aspart (Novolog)
- b. Lispro (Humalog)
- c. Regular
- d. Neutral protamine hagedorn (NPH)
- e. Glargine (Lantus)

**432.** You are thinking about starting a type 2 diabetic on insulin therapy to improve her glucose control. Which of the following insulin preparations has the longest duration of action?

- a. Aspart (Novolog)
- b. Lispro (Humalog)
- c. Regular
- d. Neutral protamine hagedorn (NPH)
- e. Inhaled insulin (Exubera)

**433.** You are caring for a type 1 diabetic who has been hospitalized with diabetic ketoacidosis, and determining an appropriate insulin regimen for her. She has required 60 units of insulin per day to maintain adequate control in the hospital. You decide to use insulin glargine (Lantus) and aspart (Lispro) in combination. What should her Lantus dose be?

- a. 10 units
- b. 20 units
- c. 30 units
- d. 40 units
- e. 50 units

**434.** You have maximized oral therapy for a type 2 diabetic in your office. She works hard at diet and exercise, and is on maximal doses of oral hypoglycemics, but her glycosolated hemoglobin is 8.6%. You decide to add insulin to her regimen. She is currently 67 in tall and weighs 100 kg. How much NPH should you give her at night as an addition to her current regimen?

- a. 5 units
- b. 10 units
- c. 15 units
- d. 20 units
- e. 25 units

**435.** You are caring for a patient with newly diagnosed diabetes. He is currently on no medications, and you have just obtained a screening lipid profile. You find that the patient's LDL cholesterol is 180 mg/dL. Given this patient's history, what is the patient's LDL treatment goal?

- a. Less than or equal to 70 mg/dL.
- b. Less than or equal to 100 mg/dL.
- c. Less than or equal to 130 mg/dL.
- d. Less than or equal to 160 mg/dL.
- e. There is no recognized treatment goal.

**436.** You are doing a screening physical examination for a 40-year-old female patient. She does not have diabetes or known coronary artery disease. Based on National Cholesterol Education Program risk calculation, you determine that her risk for coronary disease is less than 10% in the next 10 years. Given this information, what is the patient's LDL treatment goal?

- a. Less than or equal to 70 mg/dL.
- b. Less than or equal to 100 mg/dL.
- c. Less than or equal to 130 mg/dL.
- d. Less than or equal to 160 mg/dL.
- e. There is no recognized treatment goal.

**437.** You are caring for a 26-year-old man with dyslipidemia and a family history of early coronary arterial disease. Laboratory analysis reveals a low HDL. Which of the following interventions, if adopted by the patient, would raise his HDL levels to the greatest extent?

- a. Eat oat bran
- b. Lose weight
- c. Start exercising
- d. Quit smoking
- e. Reduce life stress

**438.** You have performed a screening lipid profile on an otherwise healthy man. His results indicate elevated triglycerides, a low HDL, a high LDL, an elevated total cholesterol, and an elevated very-low-density lipoprotein (VLDL). You would like to rescreen him in the fasting state. Which of the following laboratory values is likely to decrease in the fasting state?

- a. Serum triglycerides
- b. HDL
- c. LDL
- d. Total cholesterol
- e. VLDL

**439.** You did screening cholesterol tests on a 35-year-old man and found his results to be:

Total cholesterol:	220 mg/dL (H)
LDL:	125 mg/dL (H)
HDL:	34 mg/dL (L)
Triglycerides:	307 mg/dL (H)
C-reactive protein:	2.4 mg/dL (H)

Which of his laboratory results is the best predictor of an adverse outcome in this patient?

- a. Total cholesterol
- b. LDL
- c. HDL
- d. Triglycerides
- e. C-reactive protein

**440.** Through counseling and education, you have convinced a 35-year-old man with dyslipidemia to quit smoking. If he remains a nonsmoker, how would you expect his lipid profile to change?

- a. His total cholesterol will decrease.
- b. His LDL will decrease.
- c. His fasting triglycerides will decrease.
- d. His HDL will increase.
- e. His VLDL will decrease.

**441.** You have prescribed niacin for a patient with elevated LDL and triglycerides. He reports nonadherence to this regimen because of significant flushing that occurs when he takes the medication. What would you recommend to avoid this side effect?

- a. Take the niacin at night.
- b. Take the niacin with food.
- c. Take the niacin with milk.
- d. Take aspirin before taking the niacin.
- e. Take a proton pump inhibitor before taking the niacin.

**442.** In an attempt to lower cholesterol through diet, you recommend that a 40-year-old man take fish oil. What is the lipid-lowering mechanism of action of fish oil?

- a. Sequesters bile acids
- b. Changes hepatic metabolism of lipoprotein
- c. Inhibits HMG-CoA reductase
- d. Interferes with cholesterol absorption in the gut
- e. Decreases secretion of triglycerides by the liver

**443.** You are seeing a 28-year-old man with significantly elevated triglycerides. You are considering gemfibrozil (Lopid) therapy. What is the mechanism of action of gemfibrozil?

- a. Sequesters bile acids
- b. Changes hepatic metabolism of lipoprotein
- c. Inhibits HMG-CoA reductase
- d. Interferes with cholesterol absorption in the gut
- e. Decreases secretions of triglycerides by the liver

**444.** You are working with a 44-year-old man with difficult-to-manage dyslipidemia. He is taking atorvastatin (Lipitor) at maximum dosages, and you are considering adding ezetimibe (Zetia) to improve the lipid profile. How does ezetimibe work to help lower cholesterol?

- a. Sequestration of bile acids
- b. Changing hepatic metabolism of lipoproteins
- c. Inhibits HMG-CoA reductase
- d. Interferes with cholesterol absorption in the gut
- e. Decreases secretion of triglycerides by the liver

**445.** You are caring for a patient with a poor lipid profile. His HDL is low, his LDL is high, and his triglycerides are also high. Which of the following medications would have the most beneficial effect on his HDL?

- a. Lovastatin
- b. Colestipol
- c. Ezetimibe
- d. Fenofibrate
- e. Cholestyramine



**446.** You are caring for a patient with a poor lipid profile. His HDL is low, his LDL is high, and his triglycerides are also high. Which of the following medications would have the most beneficial effect on his LDL?

- a. Lovastatin
- b. Colestipol
- c. Ezetimibe
- d. Fenofibrate
- e. Cholestyramine

**447.** You are caring for a patient with a poor lipid profile. His HDL is low, his LDL is high, and his triglycerides are also high. Which of the following medications would have the most beneficial effect on his triglycerides?

- a. Lovastatin
- b. Colestipol
- c. Ezetimibe
- d. Fenofibrate
- e. Cholestyramine

**448.** You are treating a patient who is interested in more “natural” methods to control his cholesterol. He wants to use niacin. Which of the following statements regarding niacin is true?

- a. It substantially decreases LDL.
- b. It substantially raises HDL.
- c. It has no effect on triglycerides.
- d. Its side effects generally prevent it from being used.
- e. It can't be used in patients who have concurrent diabetes.

**449.** You are seeing an HIV-positive patient who presents to discuss his current HIV therapy. His viral load is increasing and his CD4 count is falling. While obtaining his blood sample, your medical assistant sustained a needle stick injury. What is the best course of action in this situation?

- a. Immediately test the medical assistant for HIV antibodies and begin treatment if positive.
- b. Immediately test the medical assistant for HIV viral load and begin treatment if detectable.
- c. Immediately test the medical assistant for HIV antibodies and begin zidovudine therapy.
- d. Immediately test the medical assistant for HIV viral load and begin zidovudine therapy.
- e. Immediately test the medical assistant for HIV antibodies and begin at least two-drug therapy.

**450.** You are taking care of a 22-year-old woman with fever, aches, and fatigue. Her history reveals intravenous drug abuse, and you suspect acute HIV infection. Which of the following tests is best to rule out acute HIV?

- a. Enzyme-linked immunosorbent assay (ELISA)
- b. Western blot
- c. Immunofluorescent antibody test
- d. Quantitative plasma HIV RNA (viral load)
- e. CD4 lymphocyte count

**451.** You are caring for an HIV-infected woman. She had a normal Pap test 2 weeks ago. Which of the following is true?

- a. She needs a repeat Pap test in 6 months.
- b. She needs a repeat Pap test in 12 months.
- c. She needs a colposcopy.
- d. She needs to have a colposcopy instead of her next Pap test.
- e. She should have prophylactic cone biopsy of the cervix.

**452.** You are caring for a 38-year-old woman with a long history of intravenous drug abuse. She was diagnosed with HIV 2 years ago, and has been doing well on therapy without disease progression. You order a purified protein derivative skin test for tuberculosis (TB). What amount of induration indicates a positive test?

- a. Any induration indicates a positive test.
- b. 3 mm.
- c. 5 mm.
- d. 10 mm.
- e. 15 mm.

**453.** A 38-year-old HIV-positive man follows up in your office for routine care. Unfortunately, his antiretroviral therapy is failing, and his CD4 count is falling. At his last two visits, his CD4 count has been less than 65 lymphocytes/mm<sup>3</sup>. Prophylaxis for which of the following should be instituted at this time?

- a. Mycobacterium avium complex
- b. Fungal infections
- c. Herpes simplex
- d. Herpes zoster
- e. Cytomegalovirus

**454.** You are seeing a patient with a long-standing HIV infection. The patient has been unable to afford his medication regimen and has been off medication for several months. He presents with shortness of breath. Blood gasses obtained emergently reveal a PaO<sub>2</sub> of 60 mm Hg. His chest x-ray is shown below. Assuming the patient is not allergic, which of the following is the best first-line treatment?



*(Reproduced, with permission, from Knoop K, Stack L, Storrow A. Atlas of Emergency Medicine. 2nd ed. New York, NY: McGraw-Hill; 2002: 666. Courtesy of Edward C Oldfield).*

- a. Azithromycin
- b. Trimethoprim-sulfamethoxazole
- c. Trimethoprim-sulfamethoxazole and corticosteroids
- d. Triple-drug treatment against TB
- e. Quadruple-drug treatment against TB

**455.** You have diagnosed a 42-year-old patient with hypertension. He is 5 ft 9 in tall, weighs 230 lb, and admits to poor eating habits, drinking 4 alcoholic beverages daily, and no regular exercise. Which of the following lifestyle modifications, if instituted, will result in the largest systolic blood pressure reduction?

- a. Moderate alcohol consumption to no more than 2 drinks daily.
- b. Engage in physical activity for 30 minutes per day, most days of the week.
- c. Reduce dietary sodium intake to no more than 100 mEq/L per day.
- d. Adopt a DASH eating plan (a diet rich in fruits, vegetables, and low-fat dairy products with a reduced saturated and total fat content).
- e. Lose 10 lb.

**456.** You have seen a 36-year-old man with elevated blood pressure. On one occasion, his blood pressure was 163/90 mm Hg, and on a second occasion, his blood pressure was 158/102 mm Hg. You have encouraged lifestyle modifications including weight loss using exercise and dietary changes. Despite some modest weight loss, at his current visit, his blood pressure is 166/92 mm Hg. Which of the following is the best treatment strategy at this point?

- a. Use a thiazide diuretic.
- b. Use an ACE inhibitor.
- c. Use an angiotensin receptor blocker.
- d. Use a  $\beta$ -blocker.
- e. Use a two-drug combination of medications.

**457.** You are examining a 24-year-old patient for the first time and find her blood pressure to be 155/92 mm Hg. On examination, you find that she has a very weak femoral pulses. Which of the following is true regarding this patient?

- a. Her blood pressure is not high enough to consider correction of her anatomical defect.
- b. She is too young to consider intervention regardless of her blood pressure.
- c. Correction of her deficit should eliminate the need for blood pressure medication.
- d. She is likely to have a bicuspid aortic valve.
- e. Her chest radiograph is likely to be normal.

**458.** You have just diagnosed a 35-year-old man with hypertension. He is otherwise healthy and has no complaints. Which of the following is indicated in the initial evaluation?

- a. TSH level assessment
- b. Resting electrocardiogram
- c. Stress test
- d. Echocardiogram
- e. Renal ultrasound

**459.** You are treating a 61-year-old man for hypertension. He is not responding well to combination therapy with a thiazide diuretic and a  $\beta$ -blocker. On physical examination, you note an abdominal bruit. Which of the following tests is most likely to help you evaluate him further?

- a. Chest x-ray
- b. Angiotensin-converting enzyme inhibitor renal scan
- c. Urinary metanephrines and vanillylmandelic acid levels
- d. Aortic CT scan
- e. Echocardiogram

**460.** Despite lifestyle changes, a 37-year-old patient of yours still has blood pressures above goal. She has no other medical concerns and no abnormalities on physical examination or initial laboratory evaluation. Which of the following medications is best as an initial first-line monotherapy, according to the Joint National Committee 7 (JNC 7)?

- a. A thiazide diuretic
- b. An ACE inhibitor
- c. An angiotensin receptor blocker
- d. A calcium channel blocker
- e. A  $\beta$ -blocker

**461.** A 48-year-old male patient suffered from a stroke. After full recovery, he follows up at your office. Which of the following medication options has been proven to lower his blood pressure and prevent recurrent stroke?

- a. An ACE inhibitor
- b. Hydrochlorothiazide
- c. An ACE inhibitor and hydrochlorothiazide
- d. A  $\beta$ -blocker
- e. A  $\beta$ -blocker and hydrochlorothiazide

**462.** A 55-year-old man comes to your office after not being seen by a physician in more than 10 years. He is found to be hypertensive, and his creatinine is found to be 2.3 mg/dL (H). Which medication is most likely to control his blood pressure and decrease the likelihood of progression of his renal disease?

- a. A thiazide diuretic
- b. An ACE inhibitor
- c. A calcium channel blocker
- d. A  $\beta$ -blocker
- e. An aldosterone antagonist

**463.** You have diagnosed a 35-year-old African-American man with hypertension. Lifestyle modifications helped reduce his blood pressure, but he was still above goal. You chose to start hydrochlorothiazide, 25 mg daily. This helped his blood pressure, but it is still 142/94 mm Hg. Which of the following is the best approach to take in this situation?

- a. Increase his hydrochlorothiazide to 50 mg/d.
- b. Change to a loop diuretic.
- c. Change to an ACE inhibitor.
- d. Change to a  $\beta$ -blocker.
- e. Add an ACE inhibitor.

**464.** You are seeing a 49-year-old man with a known history of hypercholesterolemia and hypertension who has had recent complaints of chest pain. He reports a chest pressure, described as “heaviness” in the substernal area. It is not associated with activity, but will occur intermittently throughout the day. Which of the following is the best way to describe what the patient is feeling?

- a. Classic angina
- b. Atypical angina
- c. Anginal equivalent
- d. Nonanginal pain
- e. Atypical nonanginal pain

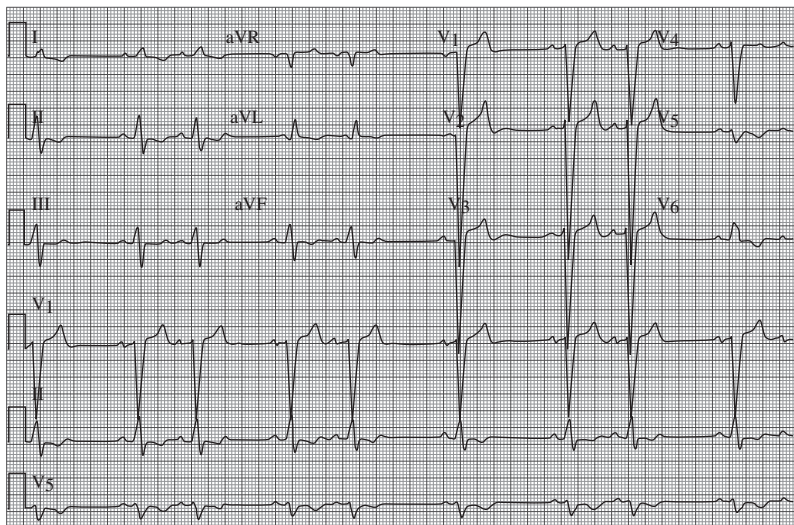
**465.** You are seeing a 36-year-old man complaining of shortness of breath. He reports symptoms associated with activity and relieved by rest. He is otherwise healthy, takes no medications, and denies chest pain or pressure. Which of the following is the best way to describe what the patient is feeling?

- a. Classic angina
- b. Atypical angina
- c. Anginal equivalent
- d. Nonanginal pain
- e. Atypical nonanginal pain

**466.** You are seeing a 44-year-old woman with a known history of asthma who has had recent complaints of chest pain. She reports a stabbing pain that seems to be worse with inspiration. It is not associated with activity, but will occur intermittently throughout the day. Which of the following is the best way to describe what the patient is feeling?

- a. Classic angina
- b. Atypical angina
- c. Anginal equivalent
- d. Nonanginal pain
- e. Atypical nonanginal pain

**467.** You are evaluating a 39-year-old otherwise healthy man with a family history of ischemic heart disease. He describes chest pressure that radiates to his jaw when he walks up steps at work. You order an ECG in the office, shown in below. Which of the following is the test of choice to determine if his chest pain is because of cardiac ischemia?



*(Reproduced, with permission, from Ferry D. Basic Electrocardiography in Ten Days. 1st ed. New York, NY: McGraw-Hill; 2001:83).*

- a. Exercise treadmill test (ETT)
- b. Thallium exercise treadmill test
- c. Stress echocardiogram
- d. Persantine/thallium test
- e. Dobutamine echocardiogram

**468.** You are caring for a 56-year-old man who presents to you for an evaluation of chest pain. You determine that an exercise treadmill test is necessary. The patient completes stage III of a Bruce protocol, achieves a heart rate of 136 beats/min and has an ST-segment depression of 1 mm in the three inferior leads at a heart rate of 130 beats/min. These changes lasted 2 minutes into recovery. Which of the following features is a poor prognostic sign for the patient?

- a. Being unable to reach stage IV of a Bruce protocol
- b. Failure to achieve a heart rate of 140 beats/min
- c. Onset of ST-segment depression at a heart rate of 130 beats/min
- d. Having ST-segment depression in multiple leads
- e. Having ST-segment depression lasting 2 minutes into recovery

**469.** You are medically treating an 85-year-old woman with stable angina, and choose to use nitrates. Which of the following is the most important consideration when using this medication?

- a. Headache
- b. Fatigue
- c. Interactions with  $\beta$ -blockers
- d. Interactions with calcium channel blockers
- e. Development of tolerance

**470.** You have chosen to treat a 70-year-old man with ischemic heart disease using a  $\beta$ -blocker. Which of the following is the most appropriate endpoint for the use of  $\beta$ -blockers in this case?

- a. Use no more than the equivalent of 40 mg twice daily of propranolol.
- b. Use the amount necessary to achieve a blood pressure of 100/70 mm Hg or less.
- c. Use the amount necessary to keep the heart rate between 50 and 60 beats/min.
- d. Increase the dosage until fatigue limits use.
- e. Increase the amount until angina disappears.

**471.** A 28-year-old man presents to your office to discuss weight management. You determine his body mass index (BMI) to be 28.2 kg/m<sup>2</sup>. How should you classify this patient?

- a. His BMI classifies him as being underweight.
- b. His BMI places him within the normal range.
- c. His BMI classifies him as being overweight.
- d. His BMI classifies him as obese.
- e. His BMI classifies him as morbidly obese.



**472.** A 33-year-old woman is seeing you for weight management. At 5 ft 6 in tall and 230 lb, she reports a history of having difficulty with weight since her teenage years. The rest of her medical history is unremarkable. Using conventional dietary techniques, what is her chance of losing 20 lb and maintaining that weight loss for 2 years?

- a. 1%
- b. 5%
- c. 10%
- d. 20%
- e. 50%

**473.** You are discussing weight management with an overweight 33-year-old woman. She has tried for years to lose weight, but despite multiple attempts, remains overweight. Which of the following is indicated in the workup of her weight concerns?

- a. History and physical alone
- b. CBC
- c. TSH
- d. Serum electrolytes
- e. Luteinizing hormone to follicle-stimulating hormone ratio

**474.** You are working with an obese patient to help him lose weight. You are considering the use of orlistat (Xenical, Alli) to help the patient with weight reduction. Which of the following is the mechanism of action for this medication?

- a. It is an appetite suppressant.
- b. It blocks the uptake of both serotonin and norepinephrine in the central nervous system.
- c. It is a selective cannabinoid-1 receptor antagonist.
- d. It reduces fat absorption in the GI tract.
- e. It is a catecholaminergic amphetamine.

**475.** You are evaluating a patient whose BMI is 44 kg/m<sup>2</sup>. You would like the patient to consider weight-loss surgery, specifically a Roux-en-Y gastric bypass. Which of the following is true regarding this procedure?

- a. The operative mortality rate for this procedure in the first 30 days is near 5%.
- b. Complications from this procedure occur in approximately 40% of the cases.
- c. The procedure can be expected to help the patient lose up to 30% of initial body weight.
- d. Nutritional deficiencies after surgery are rare.
- e. This surgery is reserved for people with BMI greater than 30 kg/m<sup>2</sup>.

**476.** You are caring for an obese 30-year-old woman who would like to consider pharmacotherapy for the treatment of her obesity. Which of the following medications, if any, demonstrates maintenance of weight loss once off the medication?

- a. Orlistat (Xenical)
- b. Phentermine
- c. Sibutramine (Meridia)
- d. Rimonabant
- e. None of the medications lead to maintenance of weight loss once off the medication

**477.** A 49-year-old African-American perimenopausal woman is seeing you after having fractured her wrist. Her past medical history is significant for oral contraceptive use for 20 years, obesity, and Graves disease leading to current hypothyroidism. She nursed two children for 6 months each. Which component of the patient's history puts her at increased risk for osteoporosis?

- a. African-American race
- b. Oral contraceptive use
- c. Obesity
- d. Graves disease
- e. Breast-feeding

**478.** A 32-year-old woman is seeing you because her mother has been diagnosed with osteoporosis. She asks you what type of exercise will help her prevent the development of the disease. According to recommendations, which of the following exercises is most appropriate to help her maintain bone mass?

- a. Tennis
- b. Swimming
- c. Cycling
- d. Skating
- e. Skiing

**479.** You are caring for a 48-year-old Caucasian woman with a history of anorexia nervosa in her late twenties. She was an elite track and field athlete in her late teens and early twenties and was considered for the US Olympic team in her prime. Which of the following options is best for primary osteoporosis screening in this woman?

- a. History
- b. Physical examination
- c. Serum calcium
- d. Serum human osteocalcin levels
- e. Bone density imaging

**480.** You are evaluating a 76-year-old woman on long-term glucocorticosteroid therapy for polymyalgia rheumatica. Which of the following is the diagnostic imaging test of choice to diagnose osteoporosis?

- a. Plain radiographs
- b. Single-photon absorptiometry
- c. Dual-photon absorptiometry
- d. Dual-emission x-ray absorptiometry (DEXA) scan
- e. Quantitative CT of bone

**481.** You screened a 52-year-old, at-risk woman for osteoporosis using a DEXA scan. You received a T-score and a Z-score in the report. Which of the following indicates osteoporosis?

- a. Equal T- and Z-score
- b. T-score of +2.5
- c. T-score of -2.5
- d. Z-score of +2.5
- e. Z-score of -2.5

**482.** You are treating an elderly postmenopausal woman with osteoporosis. She recently suffered an acute osteoporotic vertebral fracture and is suffering from secondary pain. Which of the following osteoporosis treatments also has analgesic effects with respect to bone pain?

- a. Estrogen
- b. Combination of calcium and vitamin D
- c. Calcitonin
- d. Alendronate (Fosamax)
- e. Raloxifene (Evista)

**483.** You have just diagnosed osteoporosis in a postmenopausal woman. She is considering treatment alternatives and wonders about the bisphosphonates. Which of the following is the best description of how this class of medications works?

- a. They increase calcium absorption in the GI tract.
- b. They block the activity of the cytokines that stimulate bone reabsorption.
- c. They bind to bone surfaces to inhibit osteoclast activity.
- d. They stimulate osteoblasts and increase bone formation.
- e. They mimic estrogen's effect on bone.

**484.** You are seeing a 32-year-old woman for fatigue. Your differential diagnosis includes major depressive disorder, but she does not describe a depressed or irritable mood. Which of the following symptoms of depression must be present in order to diagnose a major depressive disorder in someone without depressed mood?

- a. Sleep changes
- b. Loss of interest or pleasure in usually enjoyable activities
- c. Guilt or feelings of worthlessness
- d. Loss of energy
- e. Change in appetite

**485.** You are caring for a patient who has a problem with alcohol abuse. Upon direct questioning, he says that he drinks because he continually recounts stressful memories from being in the Iraq war. Which of the following medications is the best choice to treat his disorder?

- a. Bupropion
- b. Sertraline
- c. Alprazolam
- d. Valproic acid
- e. Venlafaxine

**486.** You are discussing treatment options for a 43-year-old woman with major depressive disorder. Which of the following is a true statement regarding the effectiveness of treatment for depressive disorders?

- a. Only about 25% of patients that receive medication alone will find the medication to be effective.
- b. Patients who find one medication ineffective are likely to find all medications ineffective.
- c. In order to prevent a relapse of depressive symptoms, patients should continue treatment for 3 to 4 months.
- d. In general, patients respond best to the combination of medication and counseling.
- e. Electroconvulsive therapy (ECT) is ineffective when compared with newer medical therapy.

**487.** You are treating a 48-year-old man for major depression. His medical history includes a head injury several years ago that has left him with a seizure disorder. Which of the following antidepressants would be contraindicated?

- a. Venlafaxine
- b. Nefazodone
- c. Mirtazapine
- d. Fluoxetine
- e. Bupropion

**488.** You are following a 16-year-old girl with a suspected eating disorder. Which of the following, if present, would help differentiate anorexia nervosa from bulimia nervosa?

- a. Binge eating or purging.
- b. The use of laxatives, diuretics, or enemas.
- c. Self-evaluation is unduly influenced by body weight and shape.
- d. Episodic lack of control over eating.
- e. Inappropriate behaviors to prevent weight gain.

**489.** You decide to treat a severely depressed patient with fluoxetine. The response is dramatic and on follow up he reports that he feels great. He has got a lot of energy—in fact he hasn't slept in 2 days. He just bought a new car despite losing his job. You suspect acute mania. Which of the following is the best choice of medications to control the acute symptoms?

- a. Neuroleptics
- b. Lithium
- c. Valproic acid
- d. Carbamazepine
- e. Lamotrigine

**490.** A 26-year-old male college graduate is seeing you for an office visit. He is concerned that he may have adult attention-deficit hyperactivity disorder (ADHD). Which of the following is true regarding this condition?

- a. The symptoms are likely to be more pronounced in adults as compared with children.
- b. Children diagnosed with ADHD commonly continue to have symptoms into adulthood.
- c. Sleep disturbance is a distinctive feature of adult ADHD.
- d. Appetite disturbance is a distinctive feature of adult ADHD.
- e. The symptom picture of adult ADHD mimics that in children.

**491.** You are caring for an adult who has carried the diagnosis of ADHD since his early school years. Of the following symptoms, which typically remain stable through the lifespan of the person with ADHD?

- a. Hyperactivity
- b. Impulsivity
- c. Inattention
- d. Oppositional behavior
- e. Conduct disorder

**492.** You are seeing a 6-year-old boy who is being evaluated for ADHD. Surveys completed by his teachers and his parents are consistent with the diagnosis. Which of the following blood tests should you obtain prior to making the diagnosis?

- a. No blood tests are necessary.
- b. Complete blood count.
- c. Sedimentation rate.
- d. Thyroid-stimulating hormone.
- e. Toxicology screen.

**493.** You are caring for a 7-year-old boy whose parents and teachers have evaluated him for ADHD. Tests indicate that he is bored easily, daydreams frequently, and is inattentive. He has problems with alertness, impulsivity, and hyperactivity. Of those features, which is the most classic, distinguishing feature of ADHD?

- a. Easy boredom
- b. Daydreams
- c. Inattention
- d. Impulsivity
- e. Hyperactivity

**494.** You are treating an adolescent girl who has been diagnosed with ADHD. Her mother has heard reports of stimulant abuse and is concerned about her daughter's prescription. Which of the following is true regarding the abuse of stimulants in the adolescent population?

- a. There is no risk of substance abuse in adolescents treated for ADHD.
- b. There is a decreased risk of substance abuse in adolescents treated for ADHD.
- c. The risk of substance abuse in adolescents treated for ADHD is the same as adolescents who are not treated for ADHD.
- d. There is an increased risk of substance abuse in adolescents treated for ADHD.
- e. Adolescents should not be prescribed stimulants.

**495.** A 45-year-old woman presents to your office for evaluation. She reports that over the last few weeks, she has noted an enlarging mass in the front of her neck. She feels well, has had no changes in her health, and denies symptoms of hyper- or hypothyroidism. She also denies recent viral illness. On examination, you note a diffusely enlarged thyroid that is tender to touch. Which of the following is her most likely diagnosis?

- a. Hashimoto thyroiditis
- b. Subacute lymphocytic thyroiditis
- c. Subacute granulomatous thyroiditis
- d. Suppurative thyroiditis
- e. Invasive fibrous thyroiditis

**496.** You are performing a review of systems on a 40-year-old female patient, and find that several symptoms are pointing toward thyroid disease. Of the following symptoms and signs, which is most commonly seen and reported in people with hyperthyroidism?

- a. Weight loss
- b. Tremor
- c. Fatigue
- d. Anorexia
- e. Increased sweating

**497.** You are caring for a 35-year-old man who is complaining of fatigue and an inability to gain weight. Laboratory evaluation reveals a TSH of 6.0 mIU/L (H) but a normal free  $T_4$ . Which of the following is the best next step?

- a. Test for antithyroid peroxidase.
- b. Test for thyroid autoantibodies.
- c. Treat with levothyroxine.
- d. Treat with levothyroxine and  $T_3$ .
- e. Monitor at yearly intervals.

**498.** A 26-year-old woman presents with weight gain, lethargy, dry skin, sweatiness, cold intolerance, and thinning hair. You suspect hypothyroidism and order the appropriate laboratory tests. Her TSH is high, and her free T<sub>3</sub> and free T<sub>4</sub> are both low. Which of the following is the most likely diagnosis?

- a. Primary hypothyroidism
- b. Secondary hypothyroidism
- c. Iodine deficiency
- d. Thyroid hormone resistance
- e. Subclinical hypothyroidism

**499.** You are screening a 35-year-old woman who presents with tachycardia, nervousness, tremor, palpitations, heat intolerance, and weight loss. You suspect Graves disease. What single test is best for differentiating Graves disease from other causes of hyperthyroidism?

- a. TSH
- b. TSH with free T<sub>4</sub> and free T<sub>3</sub>
- c. Thyroid receptor antibodies
- d. Radionuclide imaging of the thyroid
- e. Thyroid ultrasound

**500.** When examining a 35-year-old, you notice a firm 3-cm thyroid nodule. His thyroid studies are normal, and he is clinically euthyroid. Radionuclide imaging demonstrates uptake in the thyroid nodule. Which of the following is the most likely diagnosis?

- a. Colloid cyst
- b. Thyroid adenoma
- c. Thyroid carcinoma
- d. Metastatic disease
- e. Neurofibroma



# Chronic Conditions

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## Answers

**343. The answer is d.** (*South-Paul, pp 182-189.*) The sexual response is divided into four phases. The first is libido (or desire/interest). This phase requires androgens and an intact sensory system. The second phase is arousal (or excitement) and in men, involves erection. Vascular arterial or inflow problems are by far the most common cause, though mood disorders, stressors, and alcohol abuse may all play a role. Lack of attraction to a partner would represent a disorder of desire, not arousal.

**344. The answer is b.** (*South-Paul, pp 182-189.*) In patients with decreased sex drive, laboratory workup should be directed by the history and physical examination findings. In a patient with no other complaints and no physical examination findings, assessment of hormone status is indicated. Testosterone levels should be checked in the morning, when they peak. Free testosterone is a more accurate measure of androgen status, as it is a measure of bioavailable testosterone. The TSH and prolactin levels may be indicated in the presence of other complaints or physical findings. PSA would not be helpful.

**345. The answer is e.** (*South-Paul, pp 182-189.*) Tricyclics and SSRIs frequently cause sexual dysfunction. Bupropion actually decreases the orgasm threshold and is least likely to cause sexual dysfunction.

**346. The answer is b.** (*South-Paul, pp 182-189.*) Premature ejaculation is the most common sexual dysfunction in men, affecting about 29% of the general population. Alprostadil is used for erectile dysfunction, but would not positively affect premature ejaculation. Fluoxetine raises the threshold for orgasm, making it an effective treatment option. Bupropion and sildenafil may decrease the orgasmic threshold and might be problematic. Atenolol may cause erectile dysfunction, but would likely not treat premature ejaculation.

**347. The answer is c.** (Mengel, pp 744-759.) In men with erectile disorders, obtaining a morning serum-free testosterone is appropriate. If the level is low, the workup should continue before testosterone replacement is considered. The next step is to obtain a FSH, LH, and prolactin level. If the FSH and LH are low, but the prolactin is normal, the diagnosis is pituitary or hypothalamic failure. If the FSH and LH are high and the prolactin is normal, the diagnosis is testicular failure. If the FSH and LH are low, but the prolactin is high, there is up to a 40% chance that the patient has a pituitary adenoma and a CT or MRI should be ordered. A penile brachial index can be performed to evaluate for significant vascular disease in patients with ED, but it would not help you in following up for a low testosterone level. The nocturnal penile tumescence evaluation would be done to eliminate psychologic factors that inhibit arousal in the setting of ED, but would also not help follow up an abnormal testosterone level.

**348. The answer is a.** (Mengel, pp 744-759.) *Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM IV)* classifies sexual dysfunctions as sexual desire disorders, sexual arousal disorders, orgasmic disorders, or sexual pain disorders. The manual describes classic symptoms of hypoactive sexual desire disorder, something experienced by 15% of men and 33% of women for at least 1 of the past 12 months. Most commonly, this is a result of relationship problems, but a growing body of evidence does suggest androgen deficiency may play a role in some women. This would need to be confirmed with laboratory testing. Sexual aversion disorder is an extreme aversion to and avoidance of genital contact with a sexual partner. Sexual arousal disorder refers to the inability to maintain an adequate physiologic sexual excitement response. Dyspareunia refers to genital pain associated with intercourse.

**349. The answer is a.** (Mengel, pp 744-759.) Treatment for sexual dysfunction has been studied in many settings by many people. The most effective treatment program found to date for women with primary organic dysfunction is directed self-stimulation. Beginning with basic education in anatomy and physiology, women progress through the stages of tactile and visual self-exploration and manual stimulation. The stop-start technique is a treatment program for premature ejaculation in men. Group therapy can help counteract sexual myths and correct sexual misconceptions, but generally is not used for orgasmic dysfunction. Hypnotherapy may be helpful in situations where relaxation interferes with sexual functioning. Sensate

focus involves guided touch of a partner in areas other than the genital area. This is helpful for couples therapy.

**350. The answer is c.** (*Mengel, pp 644-654.*) Most clinicians agree that psychiatric disorders cannot be reliably assessed in patients who are currently or recently intoxicated. Alcohol is a depressant and may be the main factor in the patient's depressive symptoms. Detoxification and a period of abstinence are necessary before an evaluation for other psychiatric disorders can be effectively completed. It would be premature to treat his depression with a medication until the patient is abstinent.

**351. The answer is d.** (*Mengel, pp 644-654.*) Most people who abuse alcohol have completely normal laboratory studies. However, of the tests listed in the question, the GGT is the most sensitive. Elevated GGT is shown to be more sensitive than an elevated MCV, ALT, or AST. The specificity of the GGT is low; however, it is elevated in nonalcoholic liver disease, diabetes, pancreatitis, hyperthyroidism, heart failure, and anticonvulsant use. The ratio of AST:ALT may help distinguish between alcohol and nonalcohol-related liver diseases, with a ratio of more than 2:1 highly suggestive of alcoholic liver disease. The Ethyl glucuronide (EtG) urine test has recently become popular. It detects recent alcohol consumption, but says nothing about the level of consumption or abuse. Its value is in the monitoring of those patients who are committed to abstinence.

**352. The answer is a.** (*South-Paul, pp 614-625.*) An elevated MCV is 96% specific for alcohol abuse with a 63% predictive value. The GGT is 76% specific with a predictive value of 61%. AST, ALT, and LDH are less specific and have a worse predictive value.

**353. The answer is b.** (*Mengel, pp 644-654.*) Drugs used for addiction work in one of four ways. They either cause the body to have a negative reaction to an ingested drug, reduce the reinforcing effects of an ingested drug, block the effects of the drug by binding to the receptor site, or saturate the receptor sites with agonists that do not create the drug's desired effect. Naltrexone is known to be helpful for both opiate addiction and alcohol addiction. Naltrexone saturates opiate receptor sites and leaves them unavailable for opiate attachment. For alcohol abuse, naltrexone works differently, reducing the reinforcing effect of alcohol (not allowing patients to become "drunk").

**354. The answer is a.** (*Mengel, pp 644-654.*) Disulfiram cause the body to have a negative reaction to ingested alcohol, regardless of the form. As such, it is a deterrent. The reaction to alcohol that occurs is manifested by flushing, nausea, and vomiting. Importantly, alcohol in cough medicines, mouthwashes, and other forms must be avoided, as the reaction does not discriminate based on from where the alcohol comes.

**355. The answer is d.** (*South-Paul, pp 614-625.*) Disulfiram, naltrexone, SSRIs, and acamprosate are currently used to prevent relapse of alcoholism. Although the goal of abstinence cannot be met by medication alone, in selected patients, it may improve chances for recovery. Acamprosate seems to be the most effective of these medications. It affects both  $\gamma$ -aminobutyric acid (GABA) and glutamine neurotransmission, both of which are important in alcohol's effect on the brain. The effects of this medication appear to be greater and longer-lasting than naltrexone. The addition of disulfiram can increase the effectiveness of acamprosate alone.

**356. The answer is a.** (*South-Paul, pp 626-633.*) Nicotine-replacement therapy increases the chance that a smoker will quit. Using two forms of nicotine replacement, like a patch and a gum, allows a baseline level of nicotine to be in the patient's system and allows for a bolus during times of craving. This improves quit rates and is recommended if other forms of nicotine replacement are ineffective alone.

**357. The answer is c.** (*South-Paul, pp 614-625.*) Varenicline is a selective nicotinic receptor partial agonist. There are no known drug interactions, and it is largely excreted in the urine. Dose modifications would be needed in people with severe renal disease. Common side effects include nausea, insomnia, and abnormal dreams. It is safe in persons with seizure disorders, though bupropion is not. Varenicline is taken for 1 week before the quit date, and therefore can be taken while a person is still smoking.

**358. The answer is d.** (*South-Paul, pp 614-625.*) Behavioral intervention alone is an option for this patient, but you would at least double his success rate if you add medication to this. First-line therapies include nicotine replacement, bupropion, and varenicline. Nicotine replacement should be used with caution when working up unstable angina. His seizure disorder contraindicates the use of bupropion. Clonidine is not approved by the Food and Drug Administration (FDA) for smoking cessation, but several

studies have shown that it doubles the rate of abstinence. Clonidine represents a second-line therapy for those who have failed the first-line therapies.

**359. The answer is c.** (*Bope, pp 1118-1122.*) Stopping cocaine use does not produce a significant physiologic withdrawal. Intoxication with cocaine does produce elevated heart rate and blood pressure. The most common problem produced by cocaine withdrawal is known as a “crash.” The crash is characterized by extreme fatigue and significant depression. Relapse is common during the crash because return to use provides quick and reliable relief. Paranoia and insomnia are not recognized as symptoms of cocaine withdrawal.

**360. The answer is c.** (*Bope, pp 1118-1122.*) Opiate withdrawal is well-characterized, and although not life-threatening in otherwise healthy adults, can cause severe discomfort. Symptoms from a short-acting drug like heroin can occur within just a few hours. Withdrawal from longer-acting opiates may not cause symptoms for days. Early symptoms include lacrimation, rhinorrhea, yawning, and diaphoresis. Restlessness and irritability occur later, with bone pain, nausea, diarrhea, abdominal cramping, and mood lability occurring even later.

Cocaine does not have a significant physiologic withdrawal syndrome, but craving is intense. Marijuana-withdrawal syndrome is also not physiologically significant. Ecstasy can be considered a hallucinogen or a stimulant, and withdrawal is often associated with depression, but not the symptoms described above. Benzodiazepine withdrawal mimics alcohol withdrawal and is associated with hypertension, tachycardia, and possibly seizures.

**361. The answer is a.** (*South-Paul, pp 233-248.*) The picture shown demonstrates Heberden nodes (at the distal interphalangeal joints) and Bouchard nodes (at the proximal interphalangeal joints). These abnormalities are commonly classified as osteoarthritis, but are only infrequently associated with pain or disability. Laboratory evaluation will only rarely show an inflammatory process, and an elevated uric acid level would be an incidental finding.

**362. The answer is b.** (*South-Paul, pp 233-248.*) Osteoarthritis is characterized as being pauciarticular. The pain is worse with activity and improved

with rest. There is often mild swelling, but warmth and an effusion are rare. Crepitus is common, as is malalignment of the joint. RA tends to be polyarticular and symmetric. Morning stiffness improves with activity. Gout is abrupt in onset and monoarticular. Tendonitis and fibromyalgia are not associated with joint swelling and crepitus.

**363. The answer is c.** (*South-Paul, pp 233-248.*) The patient's history is consistent with an attack of gout. The most common presentation of gout is podagra (an abrupt, intense inflammation of the first MTP joint), but any joint can be affected. It is characterized by an abrupt onset of monoarticular symptoms with pain at rest and with movement. The attacks often occur overnight, after an inciting event (excessive alcohol or a heavy meal). The sufferer often cites exquisite pain, with even slight pressure on the joint being quite painful. Osteoarthritis and RA would not occur so abruptly. A stress fracture would likely not be as painful at rest, and cellulitis would generally not be as abrupt or painful. Septic arthritis and gout may be clinically indistinguishable, unless the joint fluid is analyzed.

**364. The answer is e.** (*South-Paul, pp 233-248.*) RA is characterized by gradual, symmetric involvement of joints, with morning stiffness. Hands and feet are usually involved first, but it may spread to larger joints. Fatigue is a common complaint. On examination, symmetric swelling and tenderness are common, with associated rheumatoid nodules. In the past, most people treated the symptoms of RA with nonsteroidals until they were ineffective, then used steroids for flares and sometimes opiates for pain. When they could no longer manage the symptoms, primary care doctors referred the patients to a rheumatologist. Unfortunately, this approach did not help the patients slow the progression of their disease. The most important advancement in the treatment of RA has been the introduction of disease-modifying antirheumatic drugs (DMARDs). These agents not only control patient symptoms but suppress the underlying factors that result in synovitis, tissue reactivity, erosions, subluxations, and other complications. These should be managed by rheumatologists and started early to avoid or delay joint deformity. Therefore, early referral to rheumatology is the best way to approach the patient with RA.

**365. The answer is e.** (*South-Paul, pp 233-248.*) Oral steroids have a strong potential for ulcer formation, and although they may offer temporary relief, would not be indicated for chronic osteoarthritis. Another steroid injection would be of limited benefit, and most recommend no more than two

injections per year to avoid hastening of the osteoarthritic process. Ketorolac is not indicated for intra-articular injection. Hyaluronic acid injections have been shown to provide symptomatic relief in osteoarthritis for up to 6 months, but given the malalignment demonstrated in his x-ray, knee replacement would likely be more beneficial. Indications for replacement include poorly controlled pain despite maximal therapy, malalignment, and decreased mobility or ambulation.

**366. The answer is d.** (*South-Paul, pp 233-248.*) An evaluation of the joint aspirate is strongly recommended to establish the diagnosis of gout. It is critical to differentiate gout from infectious arthritis which is a medical emergency, and a joint aspirate will do this rapidly and accurately. The sedimentation rates and C-reactive protein are both nonspecific. Serum uric acid levels can be normal or high in the setting of acute gout. A 24-hour urine collection may help determine the most effective treatment for gout, but is not needed for diagnosis.

**367. The answer is b.** (*South-Paul, pp 233-248.*) The crystals typical of gout are needle-shaped and have negative birefringence. The crystals of pseudogout are rhomboid-shaped and demonstrate positive birefringence. Infectious arthritis, osteoarthritis, and RA would not present with crystals in the joint aspirate.

**368. The answer is c.** (*South-Paul, pp 233-248.*) Infectious arthritis, gout, and pseudogout may all be associated with cloudy joint aspirate fluid. The aspirate fluid obtained from a gout or pseudogout flare may also have a WBC count of  $50,000/\text{mm}^3$  with a high proportion of PMN leukocytes. However, glucose levels fluid aspirated from a knee with gout or pseudogout would be normal.

**369. The answer is d.** (*South-Paul, pp 233-248.*) Fluid aspirated from an osteoarthritic knee is characterized by generally clear joint fluid with a WBC count of  $2000/\text{mm}^3$  to  $10,000/\text{mm}^3$ . The distinguishing factor is the PMN leukocytes. In rheumatoid arthritis, more than 50% of the WBCs are PMNs, while in osteoarthritis, less than 50% of the WBCs are PMNs.

**370. The answer is a.** (*South-Paul, pp 233-248.*) While a short course of NSAID is one standard therapy for gout, another is a course of colchicine.

Colchicine is given orally, one tablet every 1 to 2 hours until pain is controlled or side effects limit its use (the usual side effect is diarrhea). Most attacks respond to the first two or three pills, and the maximum number used in a 24-hour period is six. Corticosteroids can provide quick relief, but should be reserved if initial therapy fails. Opiates may control pain, but will not lead to resolution of the inflammation. Allopurinol and probenecid are effective treatments for prevention, but should be used cautiously, as they can precipitate a flare.

**371. The answer is a.** (*South-Paul, pp 233-248.*) Extra-articular manifestations of RA can be seen at any stage of the disease. Most common are rheumatoid nodules that can occur anywhere on the body, but usually subcutaneously along pressure points. Vasculitis, dry eyes, dyspnea, or cough can all be seen. Cough and dyspnea may signal respiratory interstitial disease. Cardiac, GI, and renal systems are rarely involved. When a neuropathy is present, it is generally because of a compression syndrome, not as an extra-articular manifestation of the disease.

**372. The answer is b.** (*McPhee, pp 240-256.*) Asthma is common, affecting approximately 5% of the population. While there is a genetic component to its development, the strongest identified predisposing factor for its development is atopy. Obesity is increasingly being recognized as a risk factor as well. Nonspecific predictors include exercise, upper respiratory infections, pneumonia, gastroesophageal reflux disease, changes in weather, stress, and exposure to environmental smoke.

**373. The answer is a.** (*McPhee, pp 240-256.*) The most important component in the diagnosis of asthma is history. Patients with asthma typically have recurrent episodes of wheezing, but not all asthma includes wheezing, and not all wheezing is asthma. Cough is the only symptom in cough-variant asthma. Allergy testing may help to identify specific allergens, but is not useful in diagnosing asthma. A chest x-ray is useful to rule-out other causes of cough or wheezing, but is not needed to diagnose asthma. Pulmonary function testing is usually confirmatory, not diagnostic. Provocative testing is indicated for the rare patient in whom the diagnosis is in question, but should be used cautiously, as life-threatening bronchospasm may occur.

**374. The answer is c.** (*South-Paul, pp 274-288.*) Asthma is classified by its severity, and by assessing daytime and night-time symptoms. Patients



with symptoms less than twice a week, with brief exacerbations, and with night-time symptoms less than twice a month are classified as having “mild intermittent” asthma. There is no “moderate intermittent” classification. The “mild persistent” classification refers to symptoms more than twice a week but less than once a day, with symptoms that sometimes affect usual activity. Night-time symptoms occur more than twice a month. The “moderate persistent” classification is characterized by daily symptoms and use of short-acting inhaler, with exacerbations that affect activity and may last for days. Night-time symptoms occur at least weekly. “Severe persistent” asthma is characterized by continual symptoms that limit physical activities, with frequent exacerbations and night-time symptoms.

**375. The answer is d.** (*South-Paul, pp 274-288.*) The patient described in this question fits the “moderate persistent” classification, characterized by daily symptoms and use of short-acting inhaler, with exacerbations that affect activity and may last for days. Night-time symptoms occur at least weekly.

**376. The answer is c.** (*South-Paul, pp 274-288; McPhee, pp 240-256.*) Peak flow measurements parallel the FEV<sub>1</sub> and are an easy and inexpensive way to monitor asthma control. The peak flow “zone system” allows patients’ to monitor their control and participate in the clinical decision-making around their illness. Measurements between 80% and 100% of the patient’s personal best are in the “green zone,” and indicate that the patient is doing well. Measurements between 50% and 80% of the personal best are in the “yellow zone,” and are a warning to consider a step-up in therapy (review of medication technique, adherence, and environmental control, or use additional medication). Measurements below 50% of the personal best are an indicator that the patient needs immediate medical attention.

**377. The answer is c.** (*McPhee, pp 240-256.*) In 2007, the National Asthma Education and Prevention Program released its third expert panel report providing guidelines for the diagnosis and management of asthma. It includes a stepwise approach to increasing intensity of therapy based on various components of control and indicators of impairment. In this case, the patient is not well-controlled, and requires a step-up in treatment. Inhaled corticosteroids are preferred first-line agents for all patients with persistent asthma. The addition of an inhaled corticosteroid in this patient

will likely decrease her use of the rescue inhaler and decrease nighttime symptoms. Changing short-acting agents would not likely be beneficial. Long-acting  $\beta$ -agonists do not impact airway inflammation and should not be used without a corticosteroid. A leukotriene receptor antagonist is an option, but is generally thought of as a “second best” choice. Inhaled corticosteroids and leukotriene antagonists have replaced cromolyn in current asthma therapy.

**378. The answer is b.** (*McPhee, pp 240-256.*) The patient described in this question has worsening asthma symptoms and needs additional therapy. Long-acting  $\beta$ -agonists are considered the most appropriate medication in this case and are often packaged with an inhaled corticosteroid for ease of use. A leukotriene receptor antagonist would also be appropriate. A burst and taper of oral steroids may be appropriate for an acute flare, but not in this case. Cromolyn has associated compliance issues as it is dosed four times a day. Atrovent is usually not used unless there is a component of COPD, and theophylline, though an appropriate “third-line” agent, is not more effective than a long-acting  $\beta$ -agonist.

**379. The answer is b.** (*McPhee, pp 240-256.*) In this case, the patient has had mild intermittent asthma, but is becoming persistent and requires a step-up in therapy. Since he is intolerant of inhaled steroids, a leukotriene modifier is the best choice. They have been shown to improve lung function and reduce the need for rescue therapy. Long-acting  $\beta$ -agonists should not be used as monotherapy since they have been shown in studies to have a small but statistically significant increased risk of severe or fatal asthma attacks. Cromolyn therapy has been replaced by newer agents, mainly because of compliance issues. Theophylline and oral steroids would not be indicated in this case.

**380. The answer is e.** (*McPhee, pp 240-256.*) Multiple studies have shown that infections with viruses and bacteria predispose to acute asthma exacerbations. However, the use of empiric antibiotics is not recommended. There is no consistent evidence to support improved clinical outcomes. Antibiotics should be considered in cases where there is a high likelihood of acute bacterial respiratory infection, as in the case of high fever, purulent sputum production or radiographic evidence of lower respiratory or sinus infection.

**381. The answer is a.** (*Mengel, pp 300-306.*) Spondylolisthesis is an anterior displacement of vertebrae in relation to the one below. It is the most common cause of low back pain in patients younger than age 26, especially athletes. Back strain is also a common diagnosis, but would generally follow an inciting event, and pain would be associated with movement. The patient is likely too young for osteoarthritis to be a consideration, and a lumbar disk herniation can occur at any age, but is less likely to be the diagnosis in this case. Neoplasm is a rare cause of low back pain.

**382. The answer is b.** (*Mengel, pp 300-306.*) Inflammatory conditions (rheumatoid arthritis, ankylosing spondylitis, Reiter syndrome) which cause back pain are rare, but have characteristics that are helpful in differentiating them from other causes of pain. Inflammatory conditions generally produce greater pain and stiffness in the morning, while mechanical disorders tend to worsen throughout the day with activity. A disk herniation might be associated with radiation and neurologic symptoms. A compression fracture would begin suddenly, and a neoplasm is unlikely to get better throughout the day.

**383. The answer is b.** (*Mengel, pp 300-306.*) MRI is indicated for people whose pain persists for more than 6 weeks despite normal radiographs and with no response to conservative therapy. Flexion/extension films would not be helpful in identifying more concerning causes of pain. EMG is not indicated without neurologic involvement. A bone scan and/or ESR should be considered in those with symptoms consistent with cancer or infection.

**384. The answer is a.** (*Mengel, pp 300-306.*) It is recommended that patients with low back pain maintain usual activities, as dictated by pain. Neither prolonged bed rest nor traction has been shown to be effective in returning people to their usual activities sooner. NSAIDs are effective for short-term symptomatic pain relief. Muscle relaxants appear to be effective as well. Opioids may be indicated in pain relief for those who have failed NSAIDs, but are significantly sedating. Steroids can be considered in those who have failed NSAID therapy.

**385. The answer is c.** (*Mengel, pp 300-306.*) Treatment for chronic low back pain is challenging. NSAIDs are effective but can cause side effects if used chronically. Muscle relaxants do not exhibit any direct effect on skeletal muscle and owe their efficacy to sedation. They have not been shown

to add benefit when added to NSAIDs. Opioid agents may be necessary for acute flares of pain, but should not be used for chronic pain because of the risk of dependency. Low-dose tricyclic antidepressants can be useful in the treatment of chronic pain and do serve as adjuvants to other analgesics. There is no evidence that SSRIs improve pain or function in chronic back pain. There is no evidence that injections into facet joints or trigger points improve pain relief or function.

**386. The answer is c.** (*Mengel, pp 468-479.*) Chronic bronchitis is defined as a productive cough lasting 3 consecutive months over 2 consecutive years. Upon clinical diagnosis, office spirometry is necessary to make the diagnosis, assess the disease severity, and monitor response to treatment. Complete blood count may be indicated to screen for polycythemia or to assess acute illness in the febrile patient with COPD, but is not necessary. Arterial blood gas measurements should only be obtained if the FEV<sub>1</sub> is found to be less than 50% predicted. A high-resolution CT scan is not a routine part of care unless the diagnosis is in doubt, or a procedure is being considered. ECGs may show changes due to COPD, but are not routinely indicated in the evaluation.

**387. The answer is e.** (*McPhee, pp 256-262.*) The single most important intervention in smokers with COPD is to encourage smoking cessation. However, the only drug therapy that has been shown to improve the natural history of COPD progression is supplemental oxygen in those patients that are hypoxemic. Benefits of oxygen therapy include longer survival, reduced hospitalizations, and better quality of life. Bronchodilators do not alter the course of the decline in function, and COPD is generally not a steroid responsive disease. Antibiotics can be useful to treat infection and exacerbation, but no convincing evidence exists to support their use chronically.

**388. The answer is e.** (*Mengel, pp 468-479.*) The patient described in the question has risk factors and physical stigmata of COPD. Office spirometry is helpful to diagnose COPD and assess its severity. While all the answer choices are common measurements of airflow, the more sensitive measure to diagnose COPD is the FEV<sub>1</sub>:FVC ratio. It is considered normal if it is 70% or more of the predicted value based on the patient's gender, age, and height. The TLC is not often used in the routine management of COPD, but may be important for restrictive disease.

**389. The answer is b.** (*McPhee, pp 256-262.*) Bronchodilators do not alter the decline in lung function that is the hallmark of COPD, but they do offer improvement in symptoms, exercise tolerance, and overall health status. The most commonly prescribed bronchodilators are the anticholinergic ipratropium bromide and the  $\beta$ -agonists. Ipratropium is generally preferred as a first-line agent because of its longer duration of action and the absence of sympathomimetic effects. Some studies have shown that ipratropium achieves superior bronchodilation in COPD patients. Inhaled corticosteroids alone should not be considered first-line therapy in COPD patients because patients receive more benefit from bronchodilators. Theophylline is considered a fourth-line therapy for patients who do not achieve adequate symptom control with other therapies, and oxygen is not indicated until there is significant evidence of hypoxemia.

**390. The answer is d.** (*McPhee, pp 256-262.*) Antibiotics are commonly prescribed to outpatients with COPD and have been shown to improve outcomes when treating acute exacerbations. In the past, common agents included amoxicillin, trimethoprim-sulfamethoxazole, and doxycycline. However, prescribing habits have changed, and in a 2007 meta-analysis, azithromycin, ciprofloxacin, and amoxicillin-clavulanate were found to be more effective than older therapies. Prompt administration of antibiotics in COPD exacerbations is appropriate, particularly in those with risk factors for poor outcomes.

**391. The answer is d.** (*Bope, pp 741-746.*) Weight, diabetes, and hypertension, by themselves, do not indicate the presence or absence of renal insufficiency. However, most cases of chronic renal failure are caused by diabetes and hypertension (60%), so those should be recognized as significant risk factors. The serum creatinine level can be normal in elderly people with chronic renal insufficiency, because they generally have less muscle mass. Therefore, the best indicator of the presence of renal failure is the GFR. The other tests mentioned are not sufficient tests, and normal values in these tests do not indicate that the patient does not have renal insufficiency.

**392. The answer is e.** (*Bope, pp 741-746.*) The kidney's role in concentrating and diluting urine is usually retained until the GFR falls below 30% of normal. Therefore, hyponatremia, hyperkalemia, hyperphosphatemia, and metabolic acidosis (because of a fall in plasma bicarbonate) generally occur

in later stages of kidney disease. The kidney is the source of erythropoietin, and anemia generally appears when the GFR falls below 60 mL/min.

**393. The answer is d.** (*Bope, pp 741-746.*) According to National Kidney Foundation guidelines, this patient has stage 1 renal failure. ACE inhibitors should be added to his regimen to prevent the evolution of microalbuminuria to full blown proteinuria. Improvements in diet and exercise are always appropriate, but should not take the place of the addition of an ACE inhibitor. Checking a glycosolated hemoglobin level would not be indicated as a screen for diabetes.

**394. The answer is d.** (*Bope, pp 741-746.*) The patient's laboratory values and clinical picture is consistent with moderate renal failure (National Kidney Foundation stage 3). At this point, nephrology referral is indicated. Renal replacement therapy (transplant or dialysis) is indicated for severe renal insufficiency (GFR <15 mL/min).

**395. The answer is d.** (*McPhee, pp 878-886.*) The long-term complications of chronic kidney disease are many. There is a higher risk for cardiovascular disease in this population as compared with the general population. In fact, patients with chronic kidney disease die, primarily due to cardiovascular disease, before reaching the need for dialysis. The reason for this is unclear, but may be related to the uremic milieu, underlying comorbidities and the hesitancy to perform diagnostic procedures in the setting of chronic kidney disease.

**396. The answer is c.** (*Mengel, pp 462-467.*) Pain is the most common reason for which people seek medical care. Chronic pain is defined as recurrent or persistent pain lasting more than 3 months, and it affects around 15% of the US population. Nociceptive pain stems from tissue damage (such as arthritis and/or tumor). Neuropathic pain, as that described in this question, results from the sustained transmission of pain signals in the absence of ongoing tissue damage. It can be described as numbness (hypoesthesia), increased sensitivity (hyperesthesia), pins and needles (paresthesia), or severe pain usually from innocuous stimuli (allodynia).

**397. The answer is a.** (*Mengel, pp 462-467.*) Nonsteroidal anti-inflammatory drugs (NSAIDs) are an excellent first-line medication for mild to moderate pain, especially when there is an inflammatory component

suspected. One NSAID is not superior to another, and periodic substitution of one with another in the class may afford an improved response. Celecoxib (a COX-2 inhibitor) may have a better side effect profile, but should not be a first-line agent except in elderly patients or in patients who have failed NSAIDs. Tramadol is a centrally acting synthetic opioid agonist that is nonscheduled. It binds to  $\mu$ -opioid receptors and inhibits serotonin and norepinephrine reuptake. It should not be a first-line option. While tricyclic antidepressants like amitriptyline and anticonvulsants like gabapentin may work well in neuropathic pain, they are less well-studied in nociceptive pain and therefore are not good first-line agents.

**398. The answer is c.** (*Mengel, pp 462-467.*) There are many agents to choose from to treat chronic neuropathic pain. If the pain is unresponsive to NSAIDs, one can choose a trial of a COX-2 inhibitor, but studies have shown that tricyclic antidepressants like amitriptyline are efficacious. Anticonvulsants would be another option. Tramadol and opioids may work to control the pain, but may increase risk of addiction and would not be best as a next step in this case.

**399. The answer is c.** (*Mengel, pp 462-467.*) In chronic nonmalignant pain, there is evidence that continued escalating opioid doses results in worsened analgesic response. This is because NMDA receptors are upregulated and lead to tolerance, while pain receptors become increasingly more sensitive to stimuli. In situations of tolerance to medication, it is appropriate to switch from one opioid agent to another, usually starting at half the equivalent dose of the alternative medication. Stopping the opioid would result in withdrawal, and increasing the dose would be inappropriate because of the physiologic effects described above. There is no evidence to support the addition of a second anticonvulsant, and although antidepressants have been shown to help in chronic pain, it is more likely that changing opioid would provide better pain control.

**400. The answer is e.** (*Mengel, pp 479-485.*) Determining the cause of liver disease has important implications for treatment. The most important aspect of diagnosing alcoholic liver disease is the documentation of chronic alcohol abuse. However, alcohol use is sometimes denied by the patient. Alcoholic hepatitis is associated with the classic laboratory findings of a disproportionate elevation of AST compared to ALT with both values usually being less than 300 IU/L. This ratio is generally greater than 2.0, a value

rarely seen in other forms of liver disease, including those listed in this question (viral or autoimmune hepatitis or hematochromatosis).

**401. The answer is c.** (*Mengel, pp 479-485.*) Laboratory studies that represent acute hepatocellular injury include AST, ALT, LDH, and alkaline phosphatase. Laboratory values that represent hepatic function include albumin, bilirubin, and prothrombin time. Tests of hepatic function are more suggestive of chronic disease as opposed to acute injury.

**402. The answer is c.** (*Mengel, pp 479-485.*) Varices occur secondary to chronic high pressure in the portal veins. Bleeding from varices is the most common cause of death in cirrhotic patients. The other potential causes of death listed are less common.

**403. The answer is b.** (*Mengel, pp 479-485.*) Absolute contraindications to liver transplantation include portal vein thrombosis, severe medical illness, malignancy, hepatobiliary sepsis, or lack of patient understanding. Relative contraindications are active alcoholism, HIV or hepatitis B surface antigen positivity, extensive previous abdominal surgery, and a lack of a personal support system.

**404. The answer is a.** (*Mengel, pp 485-497.*) Routine laboratory testing in a person with the new diagnosis of heart failure includes an electrocardiogram, a CBC, a urinalysis, serum creatinine, potassium and albumin levels, and thyroid function studies. An echocardiogram is imperative to help identify structural abnormalities of the heart and to measure the ejection fraction. Holter monitoring is not routinely warranted, as it would not identify a cause for heart failure, but would be used to identify an arrhythmia. Catheterization or stress testing may be important if ischemia or ischemic cardiomyopathy is identified as a cause, but is not a routine initial test.

**405. The answer is b.** (*Mengel, pp 485-497.*) The NYHA functional classification is important for clinicians to understand, as therapy may change as patients progress from class to class. Class I patients have no limitation of activity. Class II patients have slight limitations, are comfortable at rest, but have fatigue, palpitations, dyspnea, or angina with ordinary activity. Class III patients are also comfortable at rest, but less-than-ordinary activity causes symptoms. Class IV patients have symptoms at rest and increased symptoms with even minor activity. There is no “class V” in this system.



**406. The answer is e.** (*Mengel, pp 485-497.*) Many noncardiac comorbid conditions may affect the proper diagnosis and clinical course of heart failure. All of the interventions in this question should be done, but only discontinuing alcohol use has actually been shown to improve function significantly. Optimally treating COPD is important, as exacerbations from heart failure are often difficult to distinguish from COPD exacerbations. Optimally treating diabetes and hypertension will minimize the negative effects of these conditions on the heart, but will not improve damage already done. Cigarette smoking should be discontinued, but generally does not lead to functional improvement. Those with alcoholic cardiomyopathy actually see improvement of the left ventricular function with abstinence.

**407. The answer is a.** (*Mengel, pp 485-497.*) Many clinical trials have shown that ACE inhibitors decrease symptoms, improve quality of life, decrease hospitalizations, and reduce mortality in patients with NYHA class II to IV heart failure. In addition, they slow the progression to heart failure among asymptomatic patients with left ventricular systolic dysfunction. All patients with heart failure should be prescribed an ACE inhibitor unless they have a contraindication.  $\beta$ -Blockers are helpful, but not necessarily as a first-line agent. Nitrates and hydralazine can be used in patients who do not tolerate ACE inhibitors, as can ARBs. Some calcium channel blockers (nifedipine, diltiazem, and nicardipine) may worsen systolic dysfunction.

**408. The answer is d.** (*Mengel, pp 485-497.*) Some patients have difficulty maintaining optimal fluid balance, and a second diuretic is needed. In this case, adding metolazone can significantly increase diuresis in the outpatient treatment of heart failure with volume overload. Prolonged therapy should be avoided. Hydrochlorothiazide would not enhance diuresis, nor would triamterene. Spironolactone can be used, but is usually only considered for NYHA class III or IV patients or those with a serum potassium level less than 5.0 mmol/L.

**409. The answer is c.** (*McPhee, pp 385-395.*) ACE inhibitors and ARBs do not have the same effects on the neurohormonal pathways involved in CHF. However, the valsartan in heart failure trial showed that while valsartan (an ARB) added to an ACE inhibitor decreases hospitalization in patients with CHF, it did not decrease mortality. The Candesartan in Heart Failure: Assessment of Reduction in Mortality and Morbidity (CHARM) trial showed that rates of cardiovascular death and heart failure admissions

were similar in patients with CHF that were treated with ACE inhibitors or ARBs.

**410. The answer is c.** (*Mengel, pp 485-497.*)  $\beta$ -Blockers inhibit the adverse effects of sympathetic nervous system activation in heart failure patients. Studies have shown that three  $\beta$ -blockers (bisoprolol, metoprolol, and carvedilol) can reduce symptoms, improve quality of life, and reduce mortality. Adding diuretics does not change mortality. Nifedipine can worsen symptoms. Digoxin improves symptoms, but does not decrease mortality.

**411. The answer is c.** (*Bope, pp 901-905.*) Epidemiologic studies have identified several genetic and environmental risk factors for Alzheimer disease. Increasing age is the strongest risk factor. By age of 65, 1% of the general population meets diagnostic criteria, and the prevalence doubles every 5 years thereafter. Family history is another major risk factor, and individuals with a first-degree relative with the disease are four times more likely to develop the disease themselves. Other risk factors include female gender, low levels of education, cardiovascular risk factors, and a history of head trauma.

**412. The answer is d.** (*Bope, pp 901-905.*) Dementia is often difficult to distinguish from delirium or depression in the elderly. However, delirium is generally acute in onset and associated with a loss of concentration. Dementia's onset is insidious, and concentration is less likely to be a problem. Depression is associated with psychomotor slowing, while dementia is generally not. While people with dementia may complain of memory loss, it is far more likely that the patient's family will complain of the patient having memory loss in dementia. Depressed patients usually present themselves complaining of memory loss. Depressed and delirious patients will generally show poor effort in testing, while demented patients will generally display good effort, but get wrong answers.

**413. The answer is e.** (*Bope, pp 901-905.*) Often, memory disturbances are the presenting symptom in Alzheimer's disease. Remote memories are well-preserved initially, with the ability to recall new information being lost early in the illness. Difficulty with word-finding is also noted early. Decreased ability to recognize and draw complex figures is an early sign of problems, as is the loss of the ability to calculate. Social propriety and interpersonal skills often remain strikingly preserved until late in the illness.

**414. The answer is a.** (*Bope, pp 901-905.*) There are no laboratory tests of sufficient accuracy to independently confirm a diagnosis of Alzheimer disease. The laboratory workup, which does include the blood work listed in answer e, is primarily done to rule out other conditions that can cause or contribute to the presenting symptoms. Structural imaging is important to rule out other causes as well and may include either a CT scan or an MRI. Positron-emission tomography (PET) scanning and evaluation of cerebrospinal fluid may be useful in very complicated cases, but are not used for diagnosis. The mini-mental status examination, the clock drawing test, or other brief screening tools may be most useful in the diagnosis.

**415. The answer is c.** (*Bope, pp 901-905.*) Three cholinesterase inhibitors are approved for the treatment of Alzheimer disease. They include donepezil (Aricept), galantamine (Reminyl), and rivastigmine (Exelon). They reduce the metabolism of acetylcholinesterase, thereby prolonging its action at cholinergic synapses. They are associated with modest improvements in cognition, behavior, activities of daily living, and global measurements of functioning. However, they do not change the progression of neurodegeneration.

**416. The answer is d.** (*Mengel, pp 497-513.*) The patient described has dementia of Lewy body (DLB) type. This begins similarly to Alzheimer disease, but then patients develop complex visual hallucinations and spontaneous signs of parkinsonism. Patients with Alzheimer dementia develop delusions, but rarely have hallucinations. Antipsychotics should be avoided in this type of dementia, unless absolutely necessary, as there is concern for long-term neurologic damage. DLB responds to cholinesterase inhibitors, and the other medications listed are safe if used appropriately.

**417. The answer is d.** (*Bope, pp 901-905.*) Evidence from clinical trials has shown that donepezil can result in modest clinical improvement versus placebo in community-dwelling patients with dementia, but found no difference in the rates of institutionalization or progression of disease. Patients with more advanced disease have been shown to have statistically significant benefit from Memantine, with or without concomitant use of an acetylcholinesterase inhibitor. Ginkgo biloba has been shown to have mixed results in studies.

**418. The answer is b.** (*South-Paul, pp 380-391.*) The American Diabetes Association recommends screening all persons older than 45 years for

diabetes every 3 years. Screens should start earlier in people with risk factors including a family history of diabetes in a first-degree relative, hypertension, obesity, high-risk ethnic groups (African American, Hispanic, Native American), a previous history of impaired glucose tolerance, abnormal lipids (especially elevated triglycerides and low HDL), and women with a history of gestational diabetes or a birth of a child greater than 9 lb. Multiple screens are available. Random glucose is easy, but has low specificity. A 2-hour glucose tolerance test is more specific, but is more costly and time consuming. A 1-hour glucose tolerance test is generally used for screening pregnant women, with a 3-hour glucose tolerance test being used for those that are positive. Urinalyses are highly specific, but have low sensitivity. Fasting glucose is more accurate and is generally recommended.

**419. The answer is c.** (*South-Paul, pp 380-391.*) The diagnosis of diabetes may be made by two separate random glucose measurements more than 200 mg/dL with classic signs of diabetes (polydipsia, polyuria, polyphagia, weight loss), a fasting glucose greater than 126 mg/dL, or a glucose reading greater than 200 mg/dL 2 hours after a 75-g glucose load.

**420. The answer is a.** (*South-Paul, pp 380-391.*) In the past, young adults diagnosed with diabetes were primarily type 1. However, the epidemic of obesity in the United States has increased the rate of type 2 diabetes in people less than 20 years old from 5% to 30% over the last decade. C-peptide is cleaved from natively produced insulin. In people with type 1 diabetes, C-peptide levels should be low. Microalbuminuria, markedly elevated hemoglobin A<sub>1c</sub>, and peripheral neuropathy can all occur in type 1 or 2 diabetes.

**421. The answer is d.** (*South-Paul, pp 380-391.*) The first indication of renal compromise in diabetics is an increase in GFR. Renal lesions develop and are followed by microalbuminuria. Uncorrected, this can lead to macroalbuminuria, then renal failure. ACE inhibitors have been shown to decrease end-stage renal disease and death by 41% in diabetics. Lifestyle changes including glucose control, weight loss, and decreased protein intake can help, but experts agree that the benefits of ACE inhibitors are well-documented. Nephrology referral would be indicated if the creatinine becomes elevated, or in the face of macroalbuminuria or microalbuminuria despite maximal therapy. Even in patients who are normotensive, low-dose ACE inhibitors are beneficial in the face of microalbuminuria.

**422. The answer is a.** (*South-Paul, pp 380-391.*) Diabetic retinopathy is the leading cause of blindness in the United States. The risk increases with the length of time that the patient has had diabetes, and the condition worsens with increasing hemoglobin A<sub>1C</sub> levels. In type 2 diabetics, it can be seen at diagnosis. Aspirin has no effect on eye complications. It follows a predictable pattern, with mild background abnormalities followed by increased vascular permeability and hemorrhage. Proliferative changes occur late in the course.

**423. The answer is b.** (*South-Paul, pp 380-391.*) ACE inhibitors are clearly the first choice for blood pressure control in diabetic patients. They control blood pressure effectively, help prevent progression of renal disease, and are indicated in the presence of coronary disease and CHF. Although compelling, there is insufficient evidence to recommend ACE inhibitors in all diabetic patients. They are indicated for diabetics with systolic blood pressures greater than 100 mm Hg. They can be used irrespective of creatinine levels, though potassium should be monitored as creatinine rises. Providers do not need to wait to see microalbuminuria prior to initiating therapy.

**424. The answer is b.** (*South-Paul, pp 380-391.*) Statins are the drug of choice in treating hyperlipidemia in diabetes. They have been shown to decrease the risk of coronary events and are excellent in lowering LDL. They do have less effect on the triglyceride levels, but in many patients, the decrease is enough to get patients to goal. Niacin will decrease triglycerides, raise HDL, and lower LDL, but may increase insulin resistance. Niacin is often used in combination with a statin or alone in patients with statin side-effects. Fibric acid derivatives lower triglycerides and raise HDL, but have minimal effects on LDL. Bile acid resins sequester bile acids in the GI tract. They can increase triglyceride levels and are generally not used in diabetics.

**425. The answer is a.** (*South-Paul, pp 380-391.*) Glycemic control is dependent on the total caloric intake, not the type of calorie taken in. Low-carbohydrate and high-protein diets have not been shown to improve glucose control more than weight loss from other methods. Sucrose does not need to be eliminated, but it may raise blood sugar more quickly after ingestion. Formal dietary programs are not more likely to produce long-term sustainable results unless exercise is a large component of the plan. Increased fiber does improve glycemic control.

**426. The answer is d.** (*South-Paul, pp 380-391.*) Oral therapy for type 2 diabetes can be complicated. No evidence supports changing sulfonylureas when one is not adequately controlling glucose levels. Biguanides act to decrease glucose output from the liver, and can decrease hemoglobin A<sub>1C</sub> by 1.5% to 2%. However, biguanides should not be used if creatinine is higher than 1.5 mg/dL. Meglitinides increase insulin secretion and should only be taken before meals. They can reduce the hemoglobin A<sub>1C</sub> by 0.5% to 2% and are most valuable if fasting sugar is adequate, but postprandial sugars are high. Since they increase insulin levels, they are more effective when used in combination with a medication that has a different mechanism of action. They are excreted in the liver, therefore are safe in renal failure. Thiazolidinediones decrease insulin resistance and are an excellent choice for those with insulin insensitivity.  $\alpha$ -Glucosidase inhibitors inhibit the absorption of carbohydrates in the gut and can decrease the hemoglobin A<sub>1C</sub> by 0.7% to 1%. They should be avoided if creatinine more than 2.0 mg/dL.

**427. The answer is d.** (*McPhee, pp 1140-1176.*) Exenatide is a GLP-1 receptor agonist isolated from the saliva of the Gila monster. When it is given to patients with type 2 diabetes, it lowers blood glucose and HbA<sub>1C</sub>. Adding it to a person taking metformin and a sulfonylurea further lowers HbA<sub>1C</sub> by 0.4% to 0.6%, and this is maintained up to 80 weeks. In addition, patients have the added benefit of weight loss, with the average weight loss for patients being around 10 lb.

**428. The answer is b.** (*McPhee, pp 1140-1176.*) Thiazolidinediones sensitize peripheral tissues to insulin. They can be used as monotherapy, with insulin or in combination with metformin. When used as monotherapy, they can decrease the HbA<sub>1C</sub> by about 1 to 2 percentage points. When added to the regimen of patients on insulin, it can reduce the insulin dosage by 30% to 50%. In the case mentioned, if you decreased the insulin dose by 50%, you would be unlikely to cause symptomatic hypoglycemia or hyperglycemia in this patient. Cough and GI intolerance are not commonly seen. Edema is a common side effect, occurring in about 3% to 4% of patients using the medication. The edema occurs even more frequently in patients receiving concomitant insulin. Other side effects include anemia and weight gain.

**429. The answer is c.** (*McPhee, pp 1140-1176.*) Glucagon-like peptide 1 (GLP-1) is a gut-derived incretin hormone that stimulates insulin and

suppresses glucagon secretion, delays gastric emptying, and reduces appetite and food intake. Sitagliptin is a dipeptidyl peptidase-4 (DPP-4) inhibitor which prolongs the activity of endogenously released GLP-1. Orally administered DPP-4 inhibitors, such as sitagliptin reduce HbA<sub>1C</sub> by 0.5% to 1.0%, with few adverse events and no weight gain.

**430. The answer is a.** (*Mengel, pp 514-522.*) It is important to thoroughly understand the action of the different types of insulin preparations in order to make therapeutic decisions about diabetic patients and their control. Aspart, lispro (Humalog), and glulisine (Apidra) have the most rapid onset of action, between 15 and 30 minutes. Regular insulin has an onset between 30 and 60 minutes. Neutral protamine hagedorn (HPH) has an onset between 1 and 2 hours, as does glargine (Lantus) and detemir (Levemir).

**431. The answer is c.** (*Mengel, pp 514-522.*) It is important to thoroughly understand the action of the different types of insulin preparations in order to make therapeutic decisions about diabetic patients and their control. Lispro's and Aspart's activity peaks early, between 30 and 60 minutes after injection. Regular insulin peaks between 2 and 3 hours after injection. Neutral protamine hagedorn (NPH) peaks 4 to 8 hours after injection. Glargine (Lantus) and Detemir (Levemir) do not have a predictable peak, and last for around 24 hours.

**432. The answer is d.** (*Mengel, pp 514-522.*) It is important to thoroughly understand the action of the different types of insulin preparations in order to make therapeutic decisions about diabetic patients and their control. Lispro's and Aspart's duration of action is between 3 and 5 hours. Inhaled insulin lasts between 3 and 5 hours as well. Regular insulin lasts between 4 and 12 hours. Neutral protamine hagedorn (NPH) lasts for around 10 to 20 hours. The preparations with the longest duration of action include Lantus and Levemir, with a duration of around 24 hours.

**433. The answer is c.** (*Mengel, pp 514-522.*) When using Lantus and Lispro, approximately 40% to 50% of the total daily insulin requirements should be given as Lantus, with the remaining 50% to 60% of insulin given as Lispro before each meal, based on a preprandial glucose reading.

**434. The answer is b.** (*Mengel, pp 514-522.*) Patients with type 2 diabetes may require insulin therapy if diet, exercise, and oral hypoglycemic agent

do not provide appropriate control. A low dose of NPH is commonly used, estimating 0.1 U/kg of body weight, as an addition to the current regimen.

**435. The answer is a.** (*Mengel, pp 522-538.*) Treatment goals for persons with dyslipidemias should be established based on the patient's clinical status and other risk factors. For patients with known coronary artery disease or diabetes, the treatment goal for LDL cholesterol is less than or equal to 70 mg/dL. If a patient has no known coronary disease, the 10-year risk for coronary disease should be estimated using a readily available National Cholesterol Education Program (NCEP) risk calculator (available online). If the 10-year risk is greater than 20%, the LDL treatment goal should be less than or equal to 100 mg/dL. If the risk is between 10% and 20%, the LDL treatment goal should be less than 130 mg/dL. If the risk is less than 10%, the treatment goal should be less than 160 mg/dL.

**436. The answer is d.** (*Mengel, pp 522-538.*) Treatment goals for persons with dyslipidemias should be established based on the patient's clinical status and other risk factors. If a patient has no known coronary disease, the 10-year risk for coronary disease should be estimated using a readily available National Cholesterol Education Program (NCEP) risk calculator (available online). If the 10-year risk is greater than 20%, the LDL treatment goal should be less than or equal to 100 mg/dL. If the risk is between 10% and 20%, the LDL treatment goal should be less than 130 mg/dL. If the risk is below 10%, the treatment goal should be less than 160 mg/dL.

**437. The answer is c.** (*Mengel, pp 522-538.*) Several lifestyle modification efforts are known to increase HDL cholesterol. By losing weight, a person can expect to raise HDL by 5 to 10 points. Smoking cessation has the same approximate effect. Adopting an exercise program is even more effective, raising HDL by up to 15 points. Eating oat bran and decreasing life stress can lower LDL, but is not likely to raise HDL. Additionally, alcohol, in moderation, raises HDL cholesterol.

**438. The answer is a.** (*Mengel, pp 522-538.*) Blood lipids change acutely in response to food intake. The triglyceride level is lowest in the fasting state and rises by an average of 50 mg/dL postprandially. As the triglyceride level rises, the total and LDL cholesterol each fall. Thus total and LDL cholesterol tend to be higher when fasting. HDL varies little whether fasting or not.



**439. The answer is c.** (*Mengel, pp 522-538.*) Of all the lipid values, low HDL is the single best predictor of an adverse outcome. However, high HDL does not guarantee immunity from coronary artery disease. C-reactive protein levels predict risk for myocardial infarction and stroke even better than LDL levels do, but the level indicated in this question puts the person at average risk. Levels above 3.00 indicate a high risk for myocardial infarction or stroke.

**440. The answer is d.** (*Mengel, pp 522-538.*) Smoking cessation increases HDL by 5 to 10 mg/dL, but does not affect LDL, VLDL, or triglycerides.

**441. The answer is d.** (*Mengel, pp 522-538.*) Aspirin blocks much of the flushing that is associated with sustained-release niacin preparations. Taking niacin at night, with food, on an empty stomach or with milk, or with a proton pump inhibitor will not impact the side effects.

**442. The answer is e.** (*Mengel, pp 522-538.*) Fish oil is high in omega-3 fatty acids and has been shown to be beneficial in lowering cholesterol. Fish oils work by decreasing secretion of triglycerides by the liver.

**443. The answer is b.** (*Mengel, pp 522-538.*) Gemfibrozil changes the hepatic metabolism of lipoproteins and is a logical choice for the patient with low HDL and elevated triglycerides.

**444. The answer is d.** (*Mengel, pp 522-538.*) Ezetimibe (Zetia) lowers cholesterol by interfering with the absorption of cholesterol in the gut. Used alone, it lowers LDL and triglycerides only modestly. When added to a low-dose statin, the combination lowers LDL as much as the maximum statin dose, but its combined use with a low-dose statin may produce fewer adverse effects.

**445. The answer is d.** (*McPhee, pp 1189-1200.*) The different options for medical management of hyperlipidemia include preparations that affect the total cholesterol, the HDL, the LDL, and the triglycerides. Choice of medication depends on the desired endpoint. The following table outlines the expected increase in HDL that would be expected using the medications in the answer key:

Medication	Increase in HDL
Lovastatin	5%-10%
Colestipol	Approximately 5%
Ezetimibe	Approximately 5%
Fenofibrate	15%-25%
Cholestyramine	Approximately 5%

Niacin is even better than fenofibrate, increasing HDL by 25% to 35% on average.

**446. The answer is a.** (*McPhee, pp 1189-1200.*) The following table outlines the expected decrease in LDL that would be expected using the medications in the answer key:

Medication	Increase in HDL
Lovastatin	25%-40%
Colestipol	15%-25%
Ezetimibe	Approximately 20%
Fenofibrate	10%-15%
Cholestyramine	15%-25%

The best statin for decreasing LDL is rosuvastatin. It can lower LDL by 40% to 50%.

**447. The answer is d.** (*McPhee, pp 1189-1200.*) The following table outlines the expected decrease in triglycerides that would be expected using the medications in the answer key:

Medication	Decrease in TG
Lovastatin	Mild
Colestipol	No effect
Ezetimibe	No effect
Fenofibrate	Moderate
Cholestyramine	No effect

Fenofibrate can be expected to decrease triglycerides by approximately 40%.

**448. The answer is b.** (*McPhee, pp 1189-1200.*) Niacin was the first lipid-lowering agent associated with decreased total mortality. It moderately decreases LDL, can increase HDL by 20% to 25%, and moderately decreases triglycerides. It causes a prostaglandin-mediated flushing that patients often describe as “hot flashes.” This side effect can be easily moderated by having the patient take a NSAID or aspirin at least an hour before taking the niacin. Although niacin can increase blood sugar, it is safe for diabetics to use.

**449. The answer is c.** (*McPhee, pp 1266-1295.*) Postexposure prophylaxis against HIV can substantially decrease the risk of seroconversion after a needle stick injury. Health care workers should be tested for HIV as soon as possible after the needle stick to establish a negative baseline for potential worker’s compensation claim should the worker subsequently seroconvert. Therapy should be initiated using at least two medications to which the source would unlikely be resistant. Some clinicians prefer triple therapy.

**450. The answer is d.** (*McPhee, pp 1266-1295; Bope, pp 47-64.*) Testing to establish the diagnosis of HIV infection usually requires an ELISA followed by a confirmatory Western blot of immunofluorescent antibody test. However, there is a “window period” of several weeks to 4 months between the infection and seroconversion when these tests may be negative. During this time, patients may be viremic and infectious, but not have sufficient levels of antibodies to result in positive tests. If there is strong clinical suspicion, plasma HIV RNA should be ordered. This, however, also needs to be interpreted with caution, as low level viremia may represent a false-positive test. CD4 count is not helpful in acute HIV disease.

**451. The answer is a.** (*McPhee, pp 1266-1295.*) The incidence of cervical dysplasia in HIV positive women is 40%. More HIV infected women die of cervical cancer than do from AIDS, therefore Pap testing should be done every 6 months. Some practitioners perform routine colposcopy regardless of the Pap results, but the evidence does not support that recommendation for all women at this point. Cone biopsy should be reserved for cases of serious dysplasia.

**452. The answer is c.** (*Bope, pp 47-64.*) Usually, induration of 15 mm (10 mm in high-risk patients) indicates a positive test. In HIV-infected individuals, 5 mm is considered a positive test. PPD tests should be placed

on the initial visit in HIV-infected patients, as there is an increased risk of progression from latent to active TB in infected individuals. Some high-risk individuals (homeless individuals or those who use injection drugs) should be tested annually.

**453. The answer is a.** (*McPhee, pp 1266-1295.*) Prophylaxis against *M avium* complex (MAC) should be instituted once the patient's CD4 count drops less than 75 to 100 lymphocytes/mm<sup>3</sup>. Prophylaxis against *Pneumocystis* pneumonia should be considered once the CD4 count drops less than 200 lymphocytes/mm<sup>3</sup>. Prophylaxis for fungal disease has been studied, but there was no benefit in the group that had prophylaxis with regard to mortality. Prophylaxis for herpes simplex and herpes zoster is not generally done. CMV prophylaxis can be instituted in those with CMV IgG positivity and with CD4 counts less than 50 lymphocytes/mm<sup>3</sup>, but it is generally not done because ganciclovir (the primary prophylactic agent) can cause neutropenia.

**454. The answer is c.** (*McPhee, pp 1266-1295.*) The x-ray shown is suspicious for *Pneumocystis* pneumonia and treatment should be started immediately. The treatment of choice is trimethoprim-sulfamethoxazole (TMP-SMX) for 3 weeks. Although it would seem that corticosteroids should be avoided in HIV-infected patients, it has been shown to improve the course of patients with moderate to severe pneumocystic pneumonia with an oxygen saturation less than 90% or a PaO<sub>2</sub> less than 65 mm Hg. Therefore, this patient should receive both.

**455. The answer is e.** (*Mengel, pp 538-547.*) Lifestyle modifications can help to manage hypertension. Weight reduction is most beneficial, and systolic blood pressure can fall from up to 20 mm Hg for each 10 lb of weight lost. A DASH diet can lower blood pressure between 8 and 14 mm Hg. Dietary sodium reduction, increased exercise and moderation of alcohol can be expected to lower systolic blood pressure less than 10 mm Hg.

**456. The answer is e.** (*Mengel, pp 538-547.*) The patient in this question has stage 2 hypertension (systolic blood pressure  $\geq 160$  mm Hg, or diastolic blood pressure  $\geq 90$  mm Hg). Since lifestyle modifications have not helped, the next step is to institute drug therapy. JNC 7 guidelines state that in patients with stage 2 hypertension, two-drug combination therapy is indicated. The most common regimen would be a thiazide

diuretic along with either an ACE inhibitor, ARB,  $\beta$ -blocker, or calcium channel blocker.

**457. The answer is d.** (*McPhee, pp 319-320.*) The patient in this question has coarctation of the aorta. The usual presentation is hypertension. Hypertension is present in the arms, but is low or normal in the legs. Femoral pulsations are weak or absent. Correction of the defect should be considered if the gradient is greater than 20 mm Hg, not based on level of blood pressure. Age is not a consideration for repair. Oftentimes, even after surgical correction, patients continue to be hypertensive for years, based on permanent changes in the rennin-angiotensin system. Her ECG will likely show left ventricular hypertrophy, and her chest radiograph will likely show rib notching. More than 50% of people with coarctation also have bicuspid aortic valve.

**458. The answer is b.** (*Mengel, pp 538-547.*) Baseline laboratory screening is important to assess for end-organ damage and identify patients at high risk for cardiovascular complications. The routine tests for a newly diagnosed hypertensive patient include: hemoglobin and hematocrit, potassium, creatinine, fasting glucose, calcium, a fasting lipid profile, urinalysis, and a resting electrocardiogram. Other tests are not indicated unless physical examination or history makes them likely to be positive.

**459. The answer is b.** (*Mengel, pp 538-547.*) The patient described in the question has physical examination findings consistent with renal artery stenosis. An ACE-inhibitor renal scan or renal magnetic resonance angiography would evaluate this. Urinary metanephrines and vanillylmandelic acid levels would help rule out pheochromocytoma. A chest x-ray would be helpful if coarctation of the aorta were suspected. An aortic CT would help to or quantify an aortic aneurysm, and an echocardiogram would help to identify left ventricular hypertrophy or systolic dysfunction.

**460. The answer is a.** (*Mengel, pp 538-547.*) JNC 7 recommended that low-dose diuretics are the most effective first-line treatment for preventing the occurrence of cardiovascular morbidity and mortality. However, recent AHA scientific statement reported that evidence supports the use of ACE inhibitors, ARB, calcium channel blockers, or thiazide diuretics singly or in combination as first-line therapy.

**461. The answer is c.** (*Mengel, pp 538-547.*) The PROGRESS study (Perindopril Protection against Recurrent Stroke Study) found that an ACE inhibitor and diuretic in combination are effective in preventing recurrent stroke.

**462. The answer is b.** (*Mengel, pp 538-547.*) Several clinical trials have documented the benefit of ACE inhibitors in patients with hypertension and chronic kidney disease. Angiotension receptor blockers are also beneficial.

**463. The answer is c.** (*McPhee, pp 416-445.*) The British Hypertension Society developed recommendations to help practitioners devise an optimal treatment regimen when combining antihypertensives. They recommend that persons younger than 55 years who are not black start an ACE inhibitor as first-line therapy (A).  $\beta$ -Blockers (B) can be used in this group, but are no longer considered ideal first-line therapy. In persons who are older than 55 years or black, the first-line therapy is either a calcium channel blocker (C) or a diuretic (D). If one medication does not control the blood pressure, the next step is to add an agent from the other category. For example, if you have an "A" or "B" medication, add a "C" or "D" medication. If that still doesn't control the blood pressure, use A (or B) + C + D. Those still resistant should consider an  $\alpha$ -blocker or other agent.

**464. The answer is b.** (*Mengel, pp 548-558.*) Atypical angina occurs when the patient experiences pain that has the quality and characteristics of angina, or occurs with exertion, but not both. For example, atypical angina may be a sense of heaviness not consistently related to exertion or relieved by rest, or it may be pain with an atypical character (sharp or stabbing) but predictably brought on by exercise and relieved by rest. Classic angina has both features. Anginal equivalent occurs when dyspnea is the sole or major manifestation. Nonanginal pain has neither the quality nor the precipitants of angina. "Atypical nonanginal pain" is not a term used to describe chest pain.

**465. The answer is c.** (*Mengel, pp 548-558.*) An anginal equivalent occurs when a patient has no chest pain, but has other symptoms of cardiac ischemia (eg, dyspnea) that is predictably precipitated by exertion and relieved by rest. Atypical angina occurs when the patient experiences pain that has the quality and characteristics of angina, or occurs with

exertion, but not both. Nonanginal pain has neither the quality nor the precipitants of angina. "Atypical nonanginal pain" is not a term used to describe chest pain.

**466. The answer is d.** (*Mengel, pp 548-558.*) Nonanginal pain has neither the quality nor the precipitating features of angina. Typical descriptive terms of nonanginal pain include "stabbing," "shooting," "knifelike," "jabbing," and "tingling." Atypical angina occurs when the patient experiences pain that has the quality and characteristics of angina, or occurs with exertion, but not both. Anginal equivalent occurs when dyspnea is the sole or major manifestation. "Atypical nonanginal pain" is not a term used to describe chest pain.

**467. The answer is b.** (*McPhee, pp 342-349.*) The standard provocative test for ischemic heart disease is an exercise treadmill test. However, certain ECG abnormalities make the standard ETT unreadable. These include left ventricular hypertrophy with strain, left bundle branch block (shown in the question), and ST-segment baseline abnormalities in the precordial leads. In this case, a thallium ETT is preferred, as long as the patient can exercise.

**468. The answer is d.** (*Mengel, pp 548-558.*) Poor prognostic signs in an ETT include failure to complete stage II of a Bruce protocol, failure to achieve a heart rate greater than 120 beats/min (off  $\beta$ -blockers), onset of ST-segment depression at a heart rate less than 120 beats/min, having ST-segment depression greater than 2.0 mm, having ST-segment depression lasting more than 6 minutes into recovery, poor systolic blood pressure response to exercise, angina or ventricular tachycardia with exercise and ST-segment depression in multiple leads.

**469. The answer is e.** (*Mengel, pp 548-558.*) Tolerance is the most significant issue to consider when using nitrates for stable angina. Tolerance develops rapidly when long-acting nitrates are given. When using a patch, it is important to have intervals of 10 to 12 hours without the patch to retain the antianginal effect. Headache and fatigue may be important side effects, but are more of a nuisance than an important consideration. The medications can be used with  $\beta$ -blockers and calcium channel blockers.

**470. The answer is c.** (*Mengel, pp 548-558.*) All  $\beta$ -blockers, regardless of their selectivity, are equally effective in treating angina. About 20% of patients

do not respond. The dose should be adjusted to achieve a heart rate of 50 to 60 beats/min.

**471. The answer is c.** (*McPhee, pp 1202-1206.*) Current data estimates that 65% of Americans are overweight and more than 30% are obese. Family physicians should be familiar with the use of BMI as an indicator of obesity and subsequent health risks. The BMI is determined by dividing the patient's weight in kilograms by the square of the height in meters. A BMI greater than 25 kg/m<sup>2</sup> is classified as overweight. A BMI greater than 30 kg/m<sup>2</sup> is considered obese, a BMI greater than 35 kg/m<sup>2</sup> is considered "class II obesity," and a BMI greater than 40 kg/m<sup>2</sup> is considered "class III obesity" or extreme obesity.

**472. The answer is d.** (*McPhee, pp 1202-1206.*) Unfortunately, only 20% of patients will lose 20 lb and maintain the weight loss for 2 years using conventional dietary techniques. Only 5% can maintain a 40 lb weight loss. Those who are successful report continued close contact with their health care provider. Most successful programs are multidisciplinary and include a low-calorie diet, behavior modification, exercise, and social support.

**473. The answer is a.** (*McPhee, pp 1202-1206.*) The history and physical examination are of utmost importance when evaluating the obese patient. Less than 1% of obese patients have a secondary nonpsychiatric cause for their obesity. Hypothyroidism and Cushing syndrome are important examples that can generally be detected by history and physical (but would need additional testing if historical features or physical findings point in that direction). Laboratory evaluation is necessary, however, to assess the medical consequences of obesity, and include fasting glucose, LDL, HDL, and triglyceride levels.

**474. The answer is d.** (*McPhee, pp 1202-1206.*) Medications to treat obesity are available over the counter and by prescription. While controversy exists, the NIH clinical guidelines state that medications may be used as part of a comprehensive weight management plan. Appetite suppressants can be amphetamines (but those carry a significant risk for abuse) or non-amphetamine. Sibutramine (Meridia) is a prescription serotonin/norepinephrine blocker. There is a selective cannabinoid-1 receptor antagonist called rimonabant under investigation that looks promising, but future



studies will help determine its place in the management of obesity. Orlistat blocks fat absorption from the GI tract.

**475. The answer is b.** (*McPhee, pp 1202-1206.*) Bariatric surgery is an increasingly more common treatment option for severe obesity. In the United States, the most common procedure performed is the Roux-en-Y gastric bypass. The procedure can result in substantial weight loss, up to 50% of the initial weight in some studies. Complications are common and occur with about 40% of the cases. Operative mortality is actually quite low 0% to 1% in the first 30 days. Nutritional deficiencies are common postoperatively, and patients require life-long supplementation. Because of the risks of the surgery, bariatric surgery is limited to those with a BMI  $>40$  kg/m<sup>2</sup>, or  $>35$  kg/m<sup>2</sup> if there are obesity-related comorbidities present.

**476. The answer is e.** (*Mengel, pp 565-575.*) Several medications are approved in the United States for the pharmacotherapy of obesity. Unfortunately, none consistently demonstrate maintenance of weight loss once the medications are discontinued. Orlistat is a gastrointestinal lipase inhibitor and boasts a 9% average weight loss, but a significant regain after medications are discontinued. Phentermine is a noradrenergic agonist that allows its users to lose 3 to 4 kg more than placebo, but regain is also very common. Sibutramine is a mixed noradrenergic/serotonergic agonist that demonstrates a 5% to 8% weight loss, but a significant regain of weight once off medication. Rimonabant is a cannabinoid receptor antagonist approved in the United Kingdom that demonstrates 4 to 5 kg more weight loss than placebo, but demonstrates almost 100% regain of weight once medication is discontinued.

**477. The answer is d.** (*South-Paul, pp 298-309.*) Osteoporosis is because of poor acquisition of bone mass or accelerated bone loss. African Americans are less at risk than Caucasians or Asians. There is no evidence that oral contraceptive use increases risk. Obesity is considered to be protective because of increased estrogen production, as long as the person is not sedentary. Hyperthyroidism is a common cause of accelerated bone loss. Breast-feeding is a significant drain on calcium stores, but studies have shown that the associated bone mineral loss is completely reversed within 12 months of weaning.

**478. The answer is a.** (*South-Paul, pp 298-309.*) Weight-bearing activity is known to retard bone loss. While there have been no randomized clinical

trials comparing the effect of various activities on bone mass, recommended activities include walking, jogging, weight lifting, aerobics, stair climbing, field sports, racquet sports, court sports, and dancing. Swimming is questionable, as it is not weight-bearing. There is no data on cycling, skating, or skiing.

**479. The answer is e.** (*South-Paul, pp 298-309.*) Primary osteoporosis refers to deterioration of bone mass not associated with other chronic illnesses or problems. History and physical are neither sensitive enough nor sufficient for the diagnosis of primary osteoporosis. While decreased serum calcium may indicate malabsorption or a vitamin D deficiency, it is not useful as a diagnostic tool for osteoporosis. Measures of bone turnover, like serum human osteocalcin levels, are of research interest, but are not useful for screening. Imaging studies are best.

**480. The answer is d.** (*South-Paul, pp 298-309.*) Plain radiographs are not sensitive enough to diagnose osteoporosis until total density has decreased by 50%. Single- and dual-photon absorptiometry provide poor resolution and are less accurate than other methods. DEXA scanning is most precise and is the test of choice. Quantitative CT scanning is the most sensitive, but exposes patients to significant levels of radiation.

**481. The answer is c.** (*South-Paul, pp 298-309.*) Bone densitometry provides a T-score (the number of standard deviations above or below the mean matched to YOUNG controls) and a Z-score (the number of standard deviations above or below the mean-matched to age-matched controls). Z-scores are of little value to clinicians. A T-score more than 2.5 standard deviations below the mean (a score of  $-2.5$  or lower) indicates osteoporosis.

**482. The answer is c.** (*South-Paul, pp 298-309.*) Calcitonin directly inhibits osteoclastic bone resorption and is considered a reasonable treatment alternative for patients with established osteoporosis in whom estrogen-replacement therapy is not recommended. It has the unique characteristic of producing an analgesic effect with respect to bone pain and is often prescribed for patients who have suffered an acute osteoporotic fracture.

**483. The answer is c.** (*South-Paul, pp 298-309.*) Bisphosphonates work by binding to the bone surface and inhibiting osteoclastic activity. Vitamin D increases absorption of calcium in the GI tract. Estrogen and selective

estrogen receptor modulators (raloxifene or Evista) work by blocking the activity of cytokines. Fluoride stimulates osteoblasts, but does not result in the formation of normal bone.

**484. The answer is b.** (*South-Paul, pp 577-584.*) Depression is commonly seen in primary care settings. In fact, it is estimated that only about 20% of depression-related health care occurs in mental health care settings. Nonpsychiatrists write approximately 80% of the prescriptions for antidepressants. Patients with major depressive disorder often present with vague physical symptoms rather than emotional complaints. To make the diagnosis of depression using *DSM* criteria, the patient must describe either depressed mood for most of the day nearly every day for at least 2 weeks, or loss of interest in usually enjoyable activities. Irritable mood may take the place of depressed mood to make the diagnosis as well. In addition to one of those two symptoms, the patient must experience other symptoms of depression, including sleep changes, feelings of guilt or worthlessness, loss of energy, loss of concentration, change in appetite, psychomotor speeding or slowing, or suicidal thoughts, plans, or intent.

**485. The answer is b.** (*McPhee, pp 996-997.*) The disorder described is posttraumatic stress disorder (PTSD)—a syndrome characterized by reexperiencing a traumatic event. Alcohol and drugs are commonly used by the patient to self-treat. Antidepressants are helpful to ameliorate the symptoms, with sertraline and paroxetine having FDA indications for treatment of this disorder. Alprazolam can be used, but there is significant concern for dependency problems. Sometimes antiepileptic medications can be used, but more studies are needed, and the FDA has not approved them for this disorder.

**486. The answer is d.** (*Mengel, pp 690-699.*) Physicians have various treatment options for depression. Studies have shown that the combination of medication and therapy offer the best treatment outcomes. However, antidepressants alone are effective in about 50% to 60% of patients with major depression. If a patient fails to respond to one medication, he or she may respond to another. At least 80% of patients with major depression will respond to at least one antidepressant medication. In order to prevent relapse, treatment should continue for 6 to 9 months. ECT has a high rate of therapeutic success, but is reserved for those who do not respond to other modalities of treatment.

**487. The answer is e.** (*Mengel, pp 690-699.*) While many of the newer antidepressants are well-tolerated, physicians should be familiar with the adverse effects and contraindications for their use. Nefazodone should not be used in patients with liver disease. Hypertension is a relative contraindication to venlafaxine. Patients experiencing hypersomnia and motor retardation should avoid nefazodone and mirtazapine. Patients who report agitation and insomnia should avoid bupropion and venlafaxine. Mirtazapine and tricyclic antidepressants are less preferred for patients with obesity. Bupropion is contraindicated for patients with seizure disorder.

**488. The answer is d.** (*Mengel, pp 699-708.*) Eating disorders are psychological disorders in which the person afflicted has an altered perception of body weight or shape and disturbances of eating behavior. Distinguishing between anorexia and bulimia may be important from a treatment standpoint. Some characteristics are common to both eating disorders, while other characteristics may help to differentiate them. Both disorders involve self-evaluation that is unduly influenced by body weight and/or shape. While binge eating or purging are considered characteristics of bulimia, there is a binge eating/purging subtype of anorexia that involves that behavior as well. Both bulimics and binge eating/purging subtypes of anorexics may use diuretics, enemas, and laxatives. Both engage in inappropriate behaviors to prevent weight gain. However, bulimics sense a lack of control over eating during episodes of bingeing, while anorexics often feel a strong sense of control. This is a characteristic that may help distinguish the two.

**489. The answer is a.** (*McPhee, pp 1019-1032.*) In some bipolar patients, the diagnosis is made after the initiation of an antidepressant allows the patient to cycle into a manic phase. All the medications listed in this answer can be used to help bipolar disorder, but only the neuroleptics will be of benefit in the acute phase. Lithium, valproic acid, carbamazepine, and lamotrigine are all excellent options for maintenance once the acute mania is under control.

**490. The answer is b.** (*Mengel, pp 664-681.*) Of children diagnosed with ADHD, 50% to 75% will continue to exhibit symptoms into adulthood. In adults, symptoms of ADHD may be more subtle, and symptoms may actually change. Deficits in executive function tend to be more salient (poor organization or time management) and the “hyperactivity” of childhood

may be replaced by restlessness. Patients with impulsivity as a child may replace that with difficulty monitoring behavior or modulating emotional intensity.

**491. The answer is c.** (*Mengel, pp 664-681.*) The symptoms of ADHD can change over time. While hyperactivity and impulsivity tend to peak between the ages of 6 and 10, inattention remains relatively stable through the lifespan of the illness. Oppositional behavior and conduct disorders may be comorbid, but are not necessarily features of ADHD.

**492. The answer is d.** (*Mengel, pp 664-681.*) When screening for ADHD, a thorough history and physical should be completed, and behavioral rating forms should be reviewed. Laboratory testing should be obtained to rule out other causes of symptoms, and include blood chemistries, a thyroid stimulating hormone, and a lead level. Most children with ADHD will have normal laboratory values, but these tests can exclude other causes of symptoms.

**493. The answer is e.** (*Mengel, pp 664-681.*) While all the symptoms listed are part of ADHD, hyperactivity across multiple settings is the classic, distinguishing feature of ADHD. Parents and teachers describe these children as being in constant motion. Hyperactivity is the most problematic feature for children with ADHD because it tends to be most disruptive and socially unacceptable.

**494. The answer is b.** (*Mengel, pp 664-681.*) Stimulant medications for ADHD are controlled substances. While it is true that they can be abused, the preparations do not produce the euphoric effect of other stimulant medications if taken by the oral route. Some people do produce a euphoric effect by crushing and snorting the short-acting preparations. Regardless, stimulants are acceptable to prescribe in adolescents. In fact, studies have shown that treating ADHD in adolescents actually decreases the risk of substance abuse when compared to children not treated.

**495. The answer is a.** (*South-Paul, pp 392-402.*) The most common cause of thyroiditis is chronic lymphocytic thyroiditis (also called Hashimoto thyroiditis). It is the most common cause of goiter in the United States. Generally seen in middle-aged women, this generally presents with enlargement of the thyroid, and most often there is associated tenderness. Subacute

lymphocytic thyroiditis is less common, and although an acute increase in thyroid size is seen, it is generally nontender. Subacute granulomatous thyroiditis usually follows a viral illness and is also associated with a mildly painful gland. Suppurative thyroiditis is rare, and is associated with fever, a swollen thyroid, and clinical manifestations of a bacterial illness. Invasive fibrous thyroiditis presents as a gradually increasing gland that is firm, but is nontender.

**496. The answer is c.** (*Mengel, pp 634-643.*) Hyperthyroidism results from elevated levels of thyroid hormones and is less common than hypothyroidism in the general population. While most people think of fatigue as being a symptom of hypothyroidism, it is actually the second most common reported symptom for hyperthyroidism. Weight loss, tremor, anorexia, and increased sweating all occur with less frequency. Only tachycardia is more commonly reported.

**497. The answer is c.** (*Mengel, pp 664-681.*) Subclinical hypothyroidism is distinguished by an elevated TSH and a normal free  $T_4$ . This condition occurs in 4% to 8% of the general population. It will progress to clinical hypothyroidism at a rate of 2% to 5% per year. Risk for progression includes the presence of thyroid autoantibodies, old age, a female gender, and a TSH level greater than 10 mIU/L. Patients who do not progress are considered euthyroid with a reset thyrostat, and they should be monitored clinically and biochemically on an annual basis. Antithyroid peroxidase levels would help to diagnose autoimmune thyroiditis, but would not be helpful in this case. Starting thyroxine would be appropriate if the TSH was greater than 10 mIU/L, but not if the levels were only slightly elevated.

**498. The answer is a.** (*South-Paul, pp 392-402.*) Primary hypothyroidism is common, usually a result of Hashimoto thyroiditis or after Graves disease. In this case, the TSH would be elevated, and the free  $T_3$  and  $T_4$  would be low. Secondary hypothyroidism is related to hypothalamic or pituitary dysfunction. Iodine deficiency is a cause of primary hypothyroidism. Subclinical hypothyroidism is when the TSH is elevated, but the  $T_3$  and  $T_4$  are normal. Thyroid resistance would present with the TSH,  $T_3$ , and  $T_4$  all being elevated.

**499. The answer is c.** (*South-Paul, pp 392-402.*) Thyroid receptor antibodies are very specific and differentiate Graves disease from other causes

of hyperthyroidism. The TSH and free thyroid hormones are nonspecific, and only identify hyperthyroidism. Radionucleotide imaging is helpful in Graves, showing diffuse uptake, but is not necessarily specific. Thyroid ultrasonography can identify nodules, but is also a nonspecific test for differentiating causes of hyperthyroidism.

**500. The answer is b.** (*South-Paul, pp 392-402.*) Once a thyroid nodule is found, the next step in the workup is radionucleotide imaging. If a nodule takes up radiotracer, it is termed a “hot” nodule. Colloidal cysts and tumors do not take up tracer and are “cold” nodules. Therefore, “hot” nodules are more likely benign. Neurofibromas would also be “cold.” Definitive diagnosis can be made through needle aspiration.

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