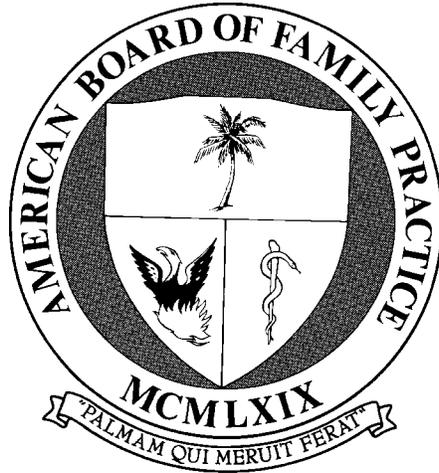


American Board of Family Practice



2004 IN-TRAINING EXAMINATION

CRITIQUE BOOK

This book contains the correct answers to all the test items in the 2004 In-Training Examination. In addition, each item is accompanied by a rationale for the correct answer. Bibliographic references are included at the end of each critique to facilitate any further study you may wish to do in a particular area.

BOOK I

Item 1

ANSWER: E

The patient's history is typical of primary dysmenorrhea, defined as severe cramping pain in the lower abdomen that occurs during menses; it may also occur prior to the onset of menses in the absence of associated pelvic pathology. Although many women complain of pain beginning with the first cycle, symptoms usually begin at the onset of ovulation around 6–12 months after menarche. Symptoms typically last 48 hours or less, but sometimes may last up to 72 hours. It is common to find daughters with dysmenorrhea whose mothers had the same symptoms. Additionally, the symptoms of primary dysmenorrhea often resolve after the first pregnancy.

In this patient, who has no history suggesting an emotional disorder, there is no need for psychological counseling at this time. Further evaluation could include ultrasonography to rule out causes of dysmenorrhea such as uterine leiomyomata, adnexal masses, and endometrial polyps. However, a trial of symptomatic therapy is most reasonable before other invasive studies, such as a laparoscopic examination or a hysterosalpingogram, are ordered. It is not reasonable to begin danazol without a diagnosis of endometriosis, which is by definition secondary dysmenorrhea. Since neither inhibits prostaglandin synthetase, acetaminophen (which she had already tried without complete relief) combined with a narcotic is not an appropriate management strategy. Multiple placebo-controlled studies have shown that NSAIDs such as naproxen, at the onset of symptoms, provide significant relief of primary dysmenorrhea compared to placebo.

Ref: Howard FM (ed): *Pelvic Pain: Diagnosis and Management*. Lippincott, Williams and Wilkins, 2000, pp 100-107. 2) Scott JR, Gibbs RS, Karlan BY, et al (eds): *Danforth's Obstetrics and Gynecology*, ed 9. Lippincott Williams & Wilkins, 2003, pp 536-537.

Item 2

ANSWER: E

Hyperbilirubinemia can occur in up to 60% of term newborns during the first week of life. Early guidelines on management of elevated bilirubin were based on studies of bilirubin toxicity in infants who had hemolytic disease. Current recommendations now support the use of less intensive therapy in term newborns with jaundice who are otherwise healthy. Phototherapy should be initiated when the bilirubin level is above 15 mg/dL for infants at age 29–48 hours old, at 18 mg/dL for infants 49–72 hours old, and at 20 mg/dL in infants older than 72 hours. Generally, this problem is not considered pathologic unless it presents during the first hours after birth and the total serum bilirubin rises by more than 5 mg/dL/day or is higher than 17 mg/dL, or if the infant has signs or symptoms suggestive of a serious underlying illness such as sepsis. Fortunately, very few term newborns with jaundice have serious underlying pathology.

Physiologic jaundice follows a pattern, with the bilirubin level peaking on the third or fourth day of life and then declining over the first week after birth. Infants with multiple risk factors may develop an exaggerated form of physiologic jaundice, with the total bilirubin level rising as high as 17 mg/dL. Breastfed infants are at increased risk for exaggerated physiologic jaundice because of relative caloric deprivation in the first few days of life. Compared with formula-fed infants, those who are breastfed are six times more likely to experience moderate jaundice, with the bilirubin rising above 12 mg/dL.

For breastfed newborns who have an early onset of hyperbilirubinemia, the frequency of feeding should be increased to more than 10 times per day. If the newborn has a decrease in weight gain, delayed stooling, and continued poor intake, then formula supplementation may be necessary. Breastfeeding should be continued to maintain breast milk production. Supplemental water or dextrose and water should not be given, as this can decrease breast milk production and may place the infant at risk for iatrogenic hyponatremia.

Ref: Porter ML, Dennis BL: Hyperbilirubinemia in the term newborn. *Am Fam Physician* 2002;65(4):599-606. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 594-596, 1309-1321.

Item 3

ANSWER: A

The p-value is a level of statistical significance, and characterizes the likelihood of achieving the observed results of a study by chance alone, and in this case that likelihood is 5%. (In this case, 5% or less of the results can be achieved by chance alone and still be significant.) The confidence interval is a measure of variance and is derived from the test data. The p-value in and of itself says nothing about the truth or falsity of the null hypothesis, only that the likelihood of the observed results occurring by chance is 5%. The " or type I error is akin to the error of false-positive assignment; the \$ or type II error is analogous to the false-negative rate, or 1 – specificity, and cannot be calculated from the information given.

Ref: Wallace RB (ed): *Maxcy-Rosenau-Last Public Health & Preventive Medicine*, ed 14. Appleton & Lange, 1998, p 25.

Item 4

ANSWER: E

Amantadine can be used daily for 6–8 weeks in adults and children. Oseltamivir is not indicated in children less than 13 years old. Acyclovir and azithromycin do not have any activity against influenza virus. FluMist is an intranasal vaccine for one-time use.

Ref: Influenza prevention 2003–2004. *Med Lett Drugs Ther* 2003;45(1166):78-80.

Item 5

ANSWER: A

Shift-work insomnia is the only circadian sleep disorder listed. It may respond to bright-light therapy. Alcoholism is a behavioral disorder that may respond to gradual discontinuance. Inadequate sleep hygiene (use of stimulants at night, sleeping other than at bedtime, etc.) may respond to habit changes. Sleep-related myoclonus is an intrinsic sleep disorder and can be treated with levodopa or clonazepam.

Ref: Sadock BJ, Sadock VA (eds): *Kaplan & Sadock's Comprehensive Textbook of Psychiatry*, ed 7. Lippincott Williams & Wilkins, 2000, pp 1689-1690. 2) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 153-162.

Item 6

ANSWER: B

Urinary incontinence is very common in the elderly female. Treatment depends entirely on a careful history to ascertain the exact circumstances when the patient wets herself. One of the most common types of incontinence results from uninhibited contractions of the detrusor muscle. This detrusor instability causes an intense urge to void, which overcomes the patient's voluntary attempt to hold the sphincter closed; hence, the common term *urge incontinence*.

Other common causes of incontinence include a weak sphincter (sphincter incompetence), which leads to leakage associated with ordinary activities such as coughing or lifting (stress incontinence). Another common cause is overflow of urine from an abnormally distended, hypotonic, poorly contractile bladder (detrusor hypotonia). This is probably more common in males with longstanding obstruction due to prostatic hypertrophy. A rare type of incontinence is caused by spinal cord damage. This reflex incontinence is due to the patient being unable to sense the need to void.

Ref: Hazzard WR, Blass JP, Halter JB, et al (eds): *Principles of Geriatric Medicine and Gerontology*, ed 5. McGraw-Hill, 2003, pp 1571-1586.

Item 7

ANSWER: B

Enlarging postpartum hematomas adjacent to an episiotomy are best treated by removing the sutures and ligating the specific bleeding sites. A perineal pad and cold compresses are inadequate for an enlarging lesion, and hypogastric artery ligation and hysterectomy are indicated only with supravaginal hematomas.

Ref: Cunningham FG, Gant NF, Leveno KJ, et al: *Williams Obstetrics*, ed 21. McGraw-Hill, 2001, pp 645-646.

Item 8

ANSWER: A

Vitreous detachment is very common after age 60 and occurs frequently in younger persons with myopia. The separation of the posterior aspect of the vitreous from the retina exerts traction on the retina, with the attendant risks of a retinal tear and detachment. Symptoms of retinal detachment may include light flashes (photopsia), a sudden appearance or increase in “floaters,” or peripheral visual field loss, any of which should prompt an ophthalmology referral. Cataract surgery can result in premature shrinkage of the vitreous and thereby poses an increased risk, but vitreous detachment resulting from other processes is more common. Hyphema, glaucoma, and diabetic retinopathy are not specific risk factors for retinal detachment.

Ref: Gariano RE, Kim CH: Evaluation and management of suspected retinal detachment. *Am Fam Physician* 2004;69(7):1691-1697.

Item 9

ANSWER: C

The key to making a diagnosis of imperforate hymen, aside from the obvious finding on physical examination, lies in the systematic drawing of inferences. One can speculate that this patient’s recurrent crescendo abdominal cramping represented six menstrual sheddings, with no egress from the body. Her delay in menarche, despite normal growth parameters, offers another clue that structural amenorrhea is present. Amounts of retained blood vary among patients; up to 3000 mL have been reported. A large volume can accumulate without causing any permanent damage, and subsequent fertility is usually normal. Hymenotomy will relieve the pressure, and normal menses should ensue.

Ref: Emans SJH, Laufer MR, Goldstein DP (eds): *Pediatric and Adolescent Gynecology*, ed 4. Lippincott Williams & Wilkins, 1998, pp 334-335. 2) Wall EM, Stone B, Klein BL: Imperforate hymen: A not-so-hidden diagnosis. *Am J Emerg Med* 2003;21(3):249-250. 3) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 1839, 1841.

Item 10

ANSWER: E

In spite of widespread vaccination of infants, pertussis occurs endemically in 3- to 5-year cycles in the U.S. It appears to be more common within populations not routinely immunized, such as Mennonite communities, but can occur widely. Infants younger than 6 months are affected most severely, although pertussis occurs in all age groups. The diagnosis is made by nasopharyngeal culture, but because the disease is uncommon and the organism is fastidious, laboratory personnel should be advised of the physician’s suspicion of pertussis.

Treatment includes respiratory and nutritional supportive care, particularly for infants younger than 6 months. Antibiotic therapy is most effective in shortening the illness when given early, during the upper respiratory phase, but is indicated at any stage to reduce the spread of disease to others. The drug of choice is erythromycin, 40–50 mg/kg/day divided into four doses, for 14 days. Also effective are azithromycin and clarithromycin, which may be better tolerated with improved compliance. Resistance to these agents is rare. Penicillins and cephalosporins are ineffective. Gentamicin is potentially very toxic, and is not indicated.

Ref: Pickering LK (ed): *2003 Red Book: Report of the Committee on Infectious Diseases*, ed 26. American Academy of Pediatrics, 2003, pp 472-475.

Item 11

ANSWER: A

More than one-third of persons age 65 or older fall each year. Ten percent of falls result in a serious injury. Arthritis; depression; orthostasis; impaired cognition, vision, or gait; and the use of four or more prescription medications increase the risk of falling. Muscle strengthening and balance exercises and removal of physical hazards can reduce the rate of falling. Vitamin D deficiency has been associated with falling, and empiric supplementation with vitamin D reduces the risk. Tricyclic antidepressants, neuroleptics, benzodiazepines, and type IA antiarrhythmics are linked to an increased risk of falling.

Ref: Tinetti ME: Preventing falls in elderly persons. *N Engl J Med* 2003;348(1):42-49. 2) Bischoff-Ferrari HA, Dawson-Hughes B, Willett WC, et al: Effect of vitamin D on falls: A meta-analysis. *JAMA* 2004;291(16):1999-2006.

Item 12

ANSWER: A

A number of placebo-controlled, double-blind trials have demonstrated the effectiveness of a variety of antidepressants in the treatment of bulimia nervosa. Fluoxetine has FDA approval for this indication. The other agents are not used for treating bulimia.

Ref: Becker AE, Grinspoon SK, Klibanski A, et al: Eating disorders. *N Engl J Med* 1999;340(14):1092-1098. 2) Mehler PS: Clinical practice. Bulimia nervosa. *N Engl J Med* 2003;349(9):875-881.

Item 13

ANSWER: D

Antiphospholipid antibody syndrome in pregnancy is associated with an increased risk of thromboembolism, fetal loss, thrombocytopenia, and poor pregnancy outcome.

Studies comparing aspirin alone versus aspirin and heparin suggest that the combination of aspirin and heparin is most effective for decreasing fetal loss. One study showed decreased fetal loss with a combination of corticosteroids and aspirin, but the results have not been reproduced in subsequent studies. In addition, the use of prednisone was associated with an increased risk of premature rupture of membranes, preterm delivery, fetal growth restriction, infection, preeclampsia, diabetes, osteopenia, and avascular necrosis. Progesterone may be useful for recurrent spontaneous abortion related to a luteal phase defect, but has not been shown to be effective in preventing complications associated with antiphospholipid antibody syndrome.

Ref: Cunningham FG, Gant NF, Leveno KJ, et al: *Williams Obstetrics*, ed 21. McGraw-Hill, 2001, pp 1392-1394. 2) Scott JR, Gibbs RS, Karlan BY, et al (eds): *Danforth's Obstetrics and Gynecology*, ed 9. Lippincott Williams & Wilkins, 2003, p 139.

Item 14

ANSWER: A

HIPAA regulations set a minimum standard for privacy protection. Privacy notices must be provided at the first delivery of health services, and written acknowledgement is encouraged but not required. Exceptions to patient inspections include psychotherapy notes and instances where disclosure is likely to cause substantial harm to the patient or another individual in the judgment of a licensed health professional. Although it is not necessary to provide patients with a privacy notice at the time of rendering emergency care, it is required that patients be provided with a privacy notice after the emergency has ended.

Ref: Annas GJ: HIPAA regulations: A new era of medical-record privacy? *N Engl J Med* 2003;348(15):1486-1490.

Item 15

ANSWER: C

Evaluation of visual symptoms in children can be challenging, but is important for identifying correctable conditions. Amblyopia, or "lazy eye," is the most common cause of visual loss, with a prevalence of 2% in childhood. It is often related to strabismus, in which the image from one eye is suppressed in order to eliminate diplopia. Iritis is unusual and may have minimal symptoms; it is frequently associated with juvenile rheumatoid arthritis. Glaucoma does occur in children, often after cataract surgery. Eye trauma is relatively common, especially in boys. They may sustain abrasions, foreign bodies and penetrating injuries. Conjunctivitis will usually resolve without visual loss except when complicated by keratitis, such as in herpetic infections.

Ref: Simon JW, Kaw P: Commonly missed diagnoses in the childhood eye examination. *Am Fam Physician* 2001;64(4):623-628.

Item 16**ANSWER: D**

Prostate-specific antigen (PSA) is a marker that is used to screen for prostate cancer. It is elevated in more than 70% of organ-confined prostate cancers. α -Fetoprotein is a marker for hepatocellular carcinoma and nonseminomatous germ cell tumor, and is elevated in 80% of hepatocellular carcinomas. CA-125 is a marker for ovarian cancer. Although it is elevated in 85% of ovarian cancers, it is elevated in only 50% of early-stage ovarian cancers.

Carcinoembryonic antigen (CEA) is a marker for colon, esophageal, and hepatic cancers. It is expressed in normal mucosal cells and is overexpressed in adenocarcinoma, especially colon cancer. Though not specific for colon cancer, levels above 10 ng/mL are rarely due to benign disease. CEA levels typically return to normal within 4–6 weeks after successful surgical resection. CEA elevation occurs in nearly half of patients with a normal preoperative CEA level that have cancer recurrence. Cancer antigen 27.29 (CA 27-29) is a tumor marker for breast cancer. It is elevated in about 33% of early-stage breast cancers and about 67% of late-stage breast cancers. Some tumor markers, such as CEA, α -fetoprotein, and CA-125, may be more helpful in monitoring response to therapy than in detecting the primary tumor.

Ref: Perkins GL, Slater ED, Sanders GK, et al: Serum tumor markers. *Am Fam Physician* 2003;68(6):1075-1082.

Item 17**ANSWER: A**

This patient presented with classic symptoms of polycystic ovary syndrome (PCOS)—oligomenorrhea, infertility, hirsutism, and acne—reflecting hyperandrogenic anovulation. The underlying pathophysiology of PCOS includes insulin resistance leading to increased ovarian androgen production. LH and FSH levels are often elevated in PCOS, with the LH:FSH ratio often being greater than 3:1. Prolactin is usually normal, although mild elevations are possible. Marked elevations should prompt investigation of other causes. Elevated 17-hydroxyprogesterone levels are seen in congenital adrenal hyperplasia, and high TSH values would point to hypothyroidism as a cause for this patient's oligomenorrhea.

Ref: Hunter MH, Sterrett JJ: Polycystic ovary syndrome: It's not just infertility. *Am Fam Physician* 2000;62(5):1079-1088.

Item 18**ANSWER: B**

The most common cause of infant botulism is ingestion of *Clostridium botulinum* spores in honey.

Ref: Cox N, Hinkle R: Infant botulism. *Am Fam Physician* 2002;65(7):1388-1390.

Item 19**ANSWER: D**

The only approved treatments for male osteoporosis are alendronate and recombinant parathyroid hormone. Several drugs have been tested in clinical trials, and more pharmacologic treatments should become available in the future as male osteoporosis is increasingly recognized. Testosterone should not be used in this patient because of his history of prostate cancer.

Ref: Becker C: Clinical evaluation for osteoporosis. *Clin Geriatr Med* 2003;19(2):299-320.

Item 20**ANSWER: E**

Drug therapy should be considered for all patients with alcohol dependence who do not have medical contraindications to the use of the drug and who are willing to take it. Of the several drugs studied for the treatment of dependence, the evidence of efficacy is strongest for naltrexone and acamprosate. Naltrexone is currently available in the U.S.; acamprosate and tiapride are currently available in Europe but not in the U.S.

Ref: Swift RM: Drug therapy for alcohol dependence. *N Engl J Med* 1999;340(19):1482-1490. 2) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 1810, 2562-2564.

Item 21**ANSWER: A**

An unenhanced helical CT scan of the abdomen and pelvis is the best study for confirming the diagnosis of a urinary tract stone in a patient with acute flank pain, supplanting the former gold standard, intravenous pyelography. A CT scan may also reveal other pathology, such as appendicitis, diverticulitis, or abdominal aortic aneurysm. Although abdominal ultrasonography has a very high specificity, it is still not better than CT, and its sensitivity is much lower; thus, its use is usually confined to pregnant patients with a suspected stone. Plain abdominal radiographs may show the stone if it is radiopaque, and are useful for following patients with radiopaque stones. CT will reveal a radiopaque stone. While most patients with stones will have hematuria, its absence does not rule out a stone.

Ref: Teichman JM: Acute renal colic from ureteral calculus. *N Engl J Med* 2004;350(7):684-693.

Item 22**ANSWER: E**

Treatment of hypoxemia is critical in the management of COPD and trials have shown a reduction in mortality with the use of oxygen for 15 or more hours daily. Inhaled β -adrenergic agonists and cholinergic agents, either alone or in combination, provide symptomatic relief but do not prolong survival. Theophylline can be used for symptoms inadequately relieved by bronchodilators. Inhaled corticosteroids do not appear to alter the rate of decline in lung function in COPD. However, some evidence shows that these agents alleviate symptoms and reduce disease exacerbation. Pulmonary rehabilitation improves quality of life and reduces hospitalizations.

Ref: Sin DD, McAlister FA, Man SF, et al: Contemporary management of chronic obstructive pulmonary disease. *JAMA* 2003;290(17):2301-2312.

Item 23**ANSWER: A**

A post-traumatic air-fluid level in the sphenoid sinus is associated with basilar skull fractures. This finding is frequently noted on cervical spine films.

Orbital floor fractures may be associated with double vision, fluid in the maxillary sinus, an air-fluid level in the maxillary sinus, and diplopia. Epidural hematomas are more frequently associated with skull fractures in the area of the meningeal artery. Zygomatic arch fractures are more visible on Towne's view. Characteristic swelling and lateral orbital bruising are typically present. Mandible fractures may be associated with dental misalignment or bleeding. Panoramic views are often diagnostic.

Ref: Barkin RM, Rosen P (eds): *Emergency Pediatrics: A Guide to Ambulatory Care*, ed 6. Mosby, 2003, pp 428, 433.

Item 24**ANSWER: E**

In patients whose INR becomes elevated while taking warfarin, the INR can be lowered either by withholding warfarin or by oral or parenteral administration of vitamin K.

Ref: Gage BF, Fihn SD, White RH: Management and dosing of warfarin therapy. *Am J Med* 2000;109(6):481-488.

Item 25**ANSWER: A**

The patient described has a life expectancy that makes the risk-benefit ratio for the detection of asymptomatic prostate cancer extremely unfavorable. In addition, a mildly elevated PSA in a 78-year-old with a large prostate is most likely due to benign prostatic hypertrophy.

Ref: Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 543-546.

Item 26

ANSWER: C

Most infants with face presentation, mentum anterior, can be delivered vaginally, either spontaneously or with low forceps. Cesarean section is indicated for fetal distress and failure to progress. Midforceps delivery is not indicated. If fetal electrodes are attached, the chin is the preferred location.

Ref: Cunningham FG, Gant NF, Leveno KJ, et al: *Williams Obstetrics*, ed 21. McGraw-Hill, 2001, pp 452-454. 2) Scott JR, Gibbs RS, Karlan BY, et al (eds): *Danforth's Obstetrics and Gynecology*, ed 9. Lippincott Williams & Wilkins, 2003, pp 388-390.

Item 27

ANSWER: A

Secondary hyperaldosteronism is characterized by sodium retention, and thus decreased urinary sodium excretion, while potassium secretion is normal to increased.

Ref: Wilson JD, Foster DW, Kronenberg HM, et al: *Williams Textbook of Endocrinology*, ed 9. WB Saunders Co, 1998, pp 598, 731. 2) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 2138-2140.

Item 28

ANSWER: D

In healthy older adults, low-dose hydrochlorothiazide preserves bone mineral density of the hip and spine. The modest effects observed over 3 years, if accumulated over 10–20 years, may explain the one-third reduction in risk for hip fracture associated with thiazide use in many epidemiologic studies. There are no such benefits reported for the other medications listed.

Ref: LaCroix AZ, Ott SM, Ichikawa L, et al: Low-dose hydrochlorothiazide and preservation of bone mineral density in older adults. *Ann Intern Med* 2000;133(7):516-526.

Item 29

ANSWER: E

The patient most likely has obsessive-compulsive disorder (OCD) with a depressive episode. SSRIs are most frequently used. Risperidone and clonazepam are considered second-line drugs and are used as augmentation drugs when there is a partial response to an SSRI.

There is no evidence that clorazepate or imipramine is effective in OCD.

Ref: Hales RE, Yudofsky SC: *Textbook of Clinical Psychiatry*, ed 4. American Psychiatric Publishing, Inc., 2003, p 590.

Item 30

ANSWER: D

Peripheral vascular disease (PVD) is a clinical manifestation of atherosclerotic disease and is caused by occlusion of the arteries to the legs. Patients with significant arterial occlusive disease will have a prominent decrease in the ankle-brachial index from baseline following exercise, and usually a 20-mm Hg or greater decrease in systolic blood pressure. Pain during rest and exercise and the presence of swelling and soreness behind the knee and in the calf is found in those with Baker's cysts. Peripheral nerve pain commonly begins immediately upon walking and is unrelieved by rest. Doppler waveform analysis is useful in the diagnosis of PVD and will reveal attenuated waveforms at a point of decreased blood flow. Employment of the ankle-brachial index is encouraged in daily practice as a simple means to diagnose the presence of PVD. Generally, ankle-brachial indices in the range of 0.91–1.30 are thought to be normal.

Ref: Hiatt WR: Medical treatment of peripheral arterial disease and claudication. *N Engl J Med* 2001;344(21):1608-1621.

Item 31

ANSWER: D

A 16-week visit is advised for all pregnant women to offer α -fetoprotein (AFP) screening for neural tube defects and Down syndrome. An AFP level 2.5 times the median value for normal controls at the same gestational age is considered elevated. Approximately 5%–10% of patients who undergo AFP screening will have an elevated level, and most of these women will have normal fetuses. Fetal ultrasonography should be performed to detect multiple gestation, fetal demise, or fetal anomalies (neural tube defects, ventral abdominal wall defects, and urinary tract anomalies) as well as to confirm gestational age, as all of these factors are associated with elevated AFP levels. Amniocentesis is offered if the ultrasonography does not indicate the reason for the elevated AFP. Chorionic villus sampling is offered in the evaluation of suspected chromosomal anomalies as an adjunct to amniocentesis. Serum hCG would be indicated in the workup of suspected Down syndrome, where the AFP would be low, not elevated. The hCG level would be expected to be over 2.5 multiples of the mean (MoM) with Down syndrome.

Ref: Ross HL, Elias S: Maternal serum screening for fetal genetic disorders. *Obstet Gynecol Clin North Am* 1997;24(1):33-47.
2) Rakel RE: *Textbook of Family Practice*, ed 6. WB Saunders Co, 2002, p 525.

Item 32

ANSWER: E

Dopaminergic drugs are the first-line drugs for most cases of restless legs syndrome (RLS). When dopaminergic agents are prescribed, patients should be informed that although these medications are normally used to treat Parkinson's disease, they also help relieve RLS symptoms.

Ref: National Heart, Lung, and Blood Institute Working Group on Restless Legs Syndrome: Restless legs syndrome: Detection and management in primary care. *Am Fam Physician* 2000;62(1):108-114.

Item 33**ANSWER: C**

The patient described presents with a history most consistent with a recent, resolved transient ischemic attack (TIA). This was most likely due to an embolus related to her atrial fibrillation. Her risk for a recurrent neurologic event (TIA or stroke) is high. Long-term anticoagulation with warfarin reduces this risk. The use of antiplatelet agents such as clopidogrel to reduce TIAs has not been studied. Lowering blood pressure and lipid levels can reduce risks over the long term, but do not require immediate intervention.

Cardioversion for patients with atrial fibrillation of uncertain or long duration may be appropriate but should not be attempted before several weeks of anticoagulation in the stable patient.

Ref: Johnston SC: Transient ischemic attack. *N Engl J Med* 2002;347(21):1687-1692.

Item 34**ANSWER: A**

Pharyngitis is a common complaint, and usually has a viral cause. The key factors in diagnosing streptococcal pharyngitis are a fever over 100.4° F, tonsillar exudates, anterior cervical lymphadenopathy, and absence of cough. Age plays a role also, with those <15 years of age more likely to have streptococcal infection, and those 10–25 years of age more likely to have mononucleosis. The scenario described is consistent with a viral infection, with no risk factors to make streptococcal infection likely; therefore, this patient should be offered symptomatic treatment for likely viral infection. Testing for other infections is not indicated unless the patient worsens or does not improve.

Ref: Vincent M, Celestin N, Hussain A: Pharyngitis. *Am Fam Physician* 2004;69(6):1465-1470.

Item 35**ANSWER: A**

Angioneurotic edema can be life-threatening, and ACE inhibitors should not be given to patients with a history of this condition from any cause. Elevated creatinine levels are not an absolute contraindication to ACE inhibitor therapy. Myocardial infarction and a reduced cardiac ejection fraction are indications for ACE inhibitor therapy. ACE inhibitors do not affect asthma.

Ref: Bicket DP: Using ACE inhibitors appropriately. *Am Fam Physician* 2002;66(3):461-468, 473.

Item 36**ANSWER: A**

Since its FDA approval, imiquimod has been used off-label to treat all of the conditions listed, but is approved only for treatment of external genital and perianal warts in patients 12 years of age and over.

Ref: Gaspari AA: Topical immune-response modifiers: Mechanism of action and clinical implications. *Fam Pract Recert* 2003;25(6):2-10.

Item 37

ANSWER: E

Prophylaxis is indicated with total knee or hip replacements. The two regimens recommended are low-molecular-weight heparin and adjusted-dose warfarin. These may be augmented by intermittent pneumatic compression.

Ref: The use of oral anticoagulants (warfarin) in older people: American Geriatrics Society guideline. *J Am Geriatr Soc* 2002;50(8):1439-1445.

Item 38

ANSWER: B

Secondary causes of behavioral symptoms include adverse medication effects, metabolic causes, infections, dehydration, pain, delirium, fecal impaction, and injury. Appropriate first-line pharmacologic treatment of nursing-home residents who have severe behavioral symptoms with psychotic features, such as hallucinations and delusions that are causing distress, consists of atypical antipsychotics such as risperidone. The other choices listed are not atypical antipsychotics.

Ref: American Geriatrics Society and American Association for Geriatric Psychiatry: Consensus statement on improving the quality of mental health care in U.S. nursing homes: Management of depression and behavioral symptoms associated with dementia. *J Am Geriatr Soc* 2003;51(9):1287-1298.

Item 39

ANSWER: D

Patients should be routinely screened for hepatitis C if they have a history of any of the following: intravenous drug abuse no matter how long or how often, receiving clotting factor produced before 1987, persistent alanine aminotransferase elevations, or recent needle stick with HCV-positive blood.

Ref: Spach DH: Role of the primary care physician in the diagnosis and management of hepatitis C virus infection. *J Am Board Fam Pract* 1999;12(6):497-500. 2) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 1822-1838.

Item 40

ANSWER: B

Black cohosh is an herbal preparation widely used in the treatment of menopausal symptoms and menstrual dysfunction. Studies have demonstrated that this botanic medicine appears to be effective in alleviating menopausal symptoms. It has not been proven effective in randomized controlled trials and should not be used to prevent osteoporosis. Questions as to its stimulating effect on endometrial tissue are as yet unanswered.

Ref: Kligler B: Black cohosh. *Am Fam Physician* 2003;68(1):114-116.

Item 41**ANSWER: A**

An FDA Advisory Committee has recommended over-the-counter marketing of Plan B, an emergency contraceptive package that contains two 0.75-mg tablets of levonorgestrel to be taken 12 hours apart. Plan B is one of the two FDA-approved products for this indication. The Preven emergency contraceptive kit includes four tablets, each containing 0.25 mg of levonorgestrel and 50 µg of ethinyl estradiol; these are taken two at a time 12 hours apart. In a randomized, controlled trial comparing the single versus combined estrogen/progestin, the single-drug regimen was shown to be more effective. Pregnancy occurred in 11 of 976 women (1.1%) given levonorgestrel alone, and in 31 of 979 (3.2%) given ethinyl estradiol plus levonorgestrel. The proportion of pregnancies prevented, compared to the expected number without treatment, was 85% with levonorgestrel and 57% with the combination. In both regimens, the interval between individual doses is 12 hours. In this case, emergency contraception may be appropriate in the face of a possible pregnancy from previous consensual intercourse. Emergency contraception has not been found to interfere with an established post-implantation pregnancy. Furthermore, no fetal malformations have been reported as a result of the unsuccessful use of high-dose oral contraceptives for emergency contraception.

Ref: Emergency contraception OTC. *Med Lett Drugs Ther* 2004;46(1175):10-11.

Item 42**ANSWER: D**

Results of randomized clinical trials demonstrate that medications such as SSRIs, tricyclic antidepressants, and monoamine oxidase inhibitors alleviate the symptoms of post-traumatic stress disorder (PTSD) and are associated with improvements in overall functioning. SSRIs are a first-line medication because they are safer and better tolerated than other types of psychotropic medications. Sertraline and paroxetine are the only agents that have been approved by the FDA for the treatment of PTSD.

Ref: Yehuda R: Post-traumatic stress disorder. *N Engl J Med* 2002;346(2):108-114.

Item 43**ANSWER: C**

Although some older studies showed a possible increase in asthma and other atopic illness in children vaccinated for pertussis, more recent, better controlled trials have shown no association. Studies have failed to demonstrate an association between atopic disease and measles immunization. Therefore, there is no recommendation to withhold immunizations from children to prevent atopic disease. Allergy to the specific vaccine would, of course, be a valid reason not to vaccinate.

Ref: von Hertzen LC, Haahtela T: Immunization and atopy: Possible implications of ethnicity. *J Allergy Clin Immunol* 2004;113(3):401-406.

Item 44**ANSWER: E**

When treating arrhythmias related to cocaine toxicity, hypertonic sodium bicarbonate and benzodiazepines may be given when the distinction between sodium channel blockade-induced QRS-complex widening and ischemia-induced ventricular tachycardia is unclear. Lidocaine may subsequently be utilized if necessary. Verapamil has been shown to reverse cocaine-induced coronary vasospasm. β -Adrenergic blocking drugs have been shown to exacerbate coronary vasospasm by resulting in unopposed α -adrenergic activity. β -Blockers are therefore contraindicated in the treatment of cocaine-induced cardiac problems.

Ref: Hoffman RS, Hollander JE: Evaluation of patients with chest pain after cocaine use. *Crit Care Clin* 1997;13(4):809-828. 2) Lange RA, Hillis LD: Cardiovascular complications of cocaine use. *N Engl J Med* 2001;345(5):351-358.

Item 45**ANSWER: A**

Intoeing, as described, is usually caused by internal tibial torsion. This problem is believed to be caused by sleeping in the prone position, and sitting on the feet. In 90% of cases, internal tibial torsion gradually resolves without intervention by the age of 8. Avoiding prone sleeping enhances resolution of the problem. Night splints, orthotics, and shoe wedges are ineffective. Surgery (osteotomy) has been associated with a high complication rate, and is therefore not recommended in mild cases before the age of 8.

Ref: Sass P, Hassan G: Lower extremity abnormalities in children. *Am Fam Physician* 2003;68(3):461-468. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 2252-2253.

Item 46**ANSWER: C**

The recommended time to screen for gestational diabetes is 24–28 weeks gestation. The patient may be given a 50-g oral glucose load followed by a glucose determination 1 hour later.

Ref: American Diabetes Association: Gestational diabetes mellitus. *Diabetes Care* 2004;27(suppl):588-590. 2) U.S. Preventive Services Task Force: Screening for Gestational Diabetes Mellitus. AHRQ 2003. Available at www.ahrq.gov/clinic/uspstf/uspstf/gdm.htm.

Item 47**ANSWER: A**

Sleep apnea is associated with hypertension, and may in fact be a cause of hypertension. Improvement of sleep apnea can be associated with improved blood pressure.

Ref: Silverberg DS, Iaina A, Oksenberg A: Treating obstructive sleep apnea improves essential hypertension and quality of life. *Am Fam Physician* 2002;65(2):229-236.

Item 48**ANSWER: E**

All the agents listed are effective in the management of panic disorder. However, only alprazolam has an onset of action measured in hours instead of weeks, making it the most appropriate choice for managing acutely distressed patients. Because of the difficulty in discontinuing benzodiazepines, their most common use is to stabilize severe initial symptoms until another treatment becomes effective.

Ref: Saeed SA, Bruce TJ: Panic disorder: Effective treatment options. *Am Fam Physician* 1998;57(10):2405-2412. 2) Sadock BJ, Sadock VA (eds): *Kaplan & Sadock's Comprehensive Textbook of Psychiatry*, ed 7. Lippincott Williams & Wilkins, 2000, pp 2249, 2274.

Item 49**ANSWER: D**

In the younger patient who wishes to retain fertility, myomectomy is the surgical treatment of choice in significantly symptomatic uterine fibroids. Uterine artery embolization, while effective, may induce menopause or reduce fertility by decreasing ovarian reserve. It has also been associated with adverse pregnancy outcomes including malpresentation, preterm birth, and postpartum hemorrhage. Although oral contraceptives are useful in dysmenorrhea and dysfunctional uterine bleeding, they are ineffective in symptoms secondary to uterine myomas. GnRH agonists, danazol, and mifepristone are effective medications for symptomatic uterine fibroids. Metformin is useful in the treatment of polycystic ovary syndrome, but not for fibroids.

Ref: Al-Fozan H, Dufort J, Kaplow M, et al: Cost analysis of myomectomy, hysterectomy, and uterine artery embolization. *Am J Obstet Gynecol* 2002;187(5):1401-1404.

Item 50**ANSWER: A**

Insulin-dependent diabetes, even if well controlled, disqualifies a driver for commercial interstate driving. Vision of 20/40 is the minimum allowed under Department of Transportation regulations. Adequate hearing in one ear and well-compensated controlled heart disease are both allowed. Blood pressure of 160/90 mm Hg or less merits an unrestricted 2-year certification. Drivers with a blood pressure of 160/90–181/105 mm Hg can receive a 3-month temporary certification during which treatment for hypertension should be undertaken.

Ref: Pommerenke F, Hegmann K, Hartenbaum NP: DOT examinations: Practical aspects and regulatory review. *Am Fam Physician* 1998;58(2):415-426. 2) U.S. Department of Transportation: Federal motor carrier safety regulations, rules and notices, 2004. Available at www.fmcsa.dot.gov/rulesregs/fmcsrhome.htm.

Item 51

ANSWER: B

The scabies mite is predominantly transmitted by direct personal contact. Infestation from indirect contact with clothing or bedding is believed to be infrequent. Hats are frequent transmitters of head lice, but not scabies.

Ref: Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 2600-2606.

Item 52

ANSWER: D

Amitriptyline, doxepin, MAO inhibitors, and clomipramine should be avoided in nursing-home patients. SSRIs are the most appropriate first-line pharmacologic treatment for depression in nursing-home residents. Other classes of non-tricyclic antidepressants may be effective and appropriate, but the evidence for this is not as good as the evidence for SSRIs.

Ref: American Geriatrics Society, American Association for Geriatric Psychiatry: Consensus statement on improving the quality of mental health care in U.S. nursing homes: Management of depression and behavioral symptoms associated with dementia. *J Am Geriatr Soc* 2003;51(9):1287-1298.

Item 53

ANSWER: C

Postdate and post-term pregnancy are terms that are used interchangeably. The postdate pregnancy is defined as a pregnancy that has reached 42 weeks of amenorrhea. This is important because perinatal mortality doubles at 42 weeks gestational age. The diagnosis of postdate pregnancy depends heavily on accurate dating methods.

Ref: Gabbe SG (ed): *Obstetrics: Normal and Problem Pregnancies*, ed 3. Churchill Livingstone, 2002, pp 887-888.

Item 54

ANSWER: D

When draining a felon, a volar longitudinal incision or a high lateral incision is recommended. Incisions that are not recommended are the "fish-mouth" incision, the "hockey stick" (or "J") incision, and the transverse palmar incision.

Ref: Clark DC: Common acute hand infections. *Am Fam Physician* 2003;68(11):2167-2176.

Item 55

ANSWER: E

A number of medications can cause thrombocytopenia, but heparin is a more likely cause than enalapril, furosemide, labetalol, or insulin. Even the small doses of heparin used to flush intravenous lines can be a source of thrombocytopenia.

Ref: *Drug Facts and Comparisons, 2004 Edition*. Facts and Comparisons, 2004, pp 188-189.

Item 56

ANSWER: D

An electroencephalogram (EEG) is one of the most well-validated tests for confirming brain death. The presence of hypothermia will confound any attempt to determine brain death; the patient must be warm to ensure the diagnosis. The mechanical ventilator may give false readings and must be discontinued to get a real picture of the patient's ability to breathe. Spontaneous body movements can occur even hours after actual brain death. Corneal reflexes never occur after death.

Ref: Wijdicks EF: The diagnosis of brain death. *N Engl J Med* 2001;344(16):1215-1221.

Item 57

ANSWER: B

The most likely diagnosis is cutaneous leishmaniasis, caused by an intracellular parasite transmitted by the bite of small sandflies. Lesions develop gradually, and are often misdiagnosed as folliculitis or as infected epidermal inclusion cysts, but they fail to respond to usual skin antibiotics. Hundreds of cases have been diagnosed in troops returning from Iraq, most due to *Leishmania major*.

Treatment is not always required, as most lesions will resolve over several months; however, scarring is frequent. U.S. military medical facilities and the CDC are coordinating treatment when indicated with sodium stibogluconate. Family physicians can play a key role in correctly identifying these lesions.

Ref: Markle WH, Makhoul K: Cutaneous leishmaniasis: Recognition and treatment. *Am Fam Physician* 2004;69(6):1455-1460.
2) Update: Cutaneous leishmaniasis in U.S. military personnel—Southwest/Central Asia, 2002-2004. *MMWR* 2004;53(12):264-265.

Item 58

ANSWER: A

Atenolol and propranolol are associated with intrauterine growth retardation when used for prolonged periods during pregnancy. They are class D agents during pregnancy. Other β -blockers may not share this risk.

Methyldopa, hydralazine, and calcium channel blockers have not been associated with intrauterine growth retardation. They are generally acceptable agents to use for established, significant hypertension during pregnancy.

Ref: Magee LA, Ornstein MP, von Dadelszen P: Fortnightly review: Management of hypertension in pregnancy. *BMJ* 1999;318:1332-1336. 2) Ratcliffe SD, Baxley EG, Byrd JE, et al (eds): *Family Practice Obstetrics*, ed 2. Hanley & Belfus, 2001, pp 154-160, 202-205.

Item 59

ANSWER: D

About 3% of persons over age 55 have glaucoma, making it a leading cause of vision impairment. Although it is usually asymptomatic, the most common presenting symptom is tunnel vision, a gradual loss of peripheral vision.

Ref: Distelhorst JS, Hughes GM: Open-angle glaucoma. *Am Fam Physician* 2003;67(9):1937-1944.

Item 60

ANSWER: E

SSRIs are considered first-line treatment for premenstrual dysphoric disorder. Several randomized trials have shown that they are superior to placebo for this condition. Fluoxetine and sertraline have been studied the most. There have been no controlled trials to support anecdotal reports of benefit from the reduction of caffeine or refined sugar. Studies using alprazolam have shown it to be effective for premenstrual anxiety only. Progesterone has not been proven more effective than placebo in clinical trials, and bupropion is less effective than agents that primarily boost serotonergic activity. Treatment during the luteal phase alone has been shown to be more effective than continuous treatment for this condition.

Ref: Grady-Weliky T: Premenstrual dysphoric disorder. *N Engl J Med* 2003;348(5):433-438.

Item 61

ANSWER: E

This child has chronic diarrhea, recurrent sinusitis, and nasal polyps, and is underweight. Nasal polyps tend to occur more often in adult males, with the prevalence increasing in both sexes after age 50. Any child 12 years or younger who presents with nasal polyps should be suspected of having cystic fibrosis until proven otherwise. A sweat chloride test, along with a history and clinical examination, is necessary to evaluate this possibility. Nasal polyps are found in 1% of the normal population, but a full 18% of those with cystic fibrosis are afflicted. There is no association of polyps with Wilson's disease, sarcoidosis, or emphysema, so serum ceruloplasmin, angiotensin-converting enzyme, and α_1 -antitrypsin levels would not be useful. An erythrocyte sedimentation rate likewise would yield limited information.

Ref: Lund VJ: Diagnosis and treatment of nasal polyps. *BMJ* 1995;311:1411-1414. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 1388-1389.

Item 62

ANSWER: D

If possible, NSAIDs should be avoided in patients with heart failure. They cause sodium and water retention, as well as an increase in systemic vascular resistance which may lead to cardiac decompensation. Patients with heart failure who take NSAIDs have a tenfold increased risk of hospitalization for exacerbation of their CHF. NSAIDs alone in patients with normal ventricular function have not been associated with initial episodes of heart failure.

NSAIDs, including high-dose aspirin (325 mg/day), may decrease or negate entirely the beneficial unloading effects of ACE inhibition. They have been shown to have a negative impact on the long-term morbidity and mortality benefits that ACE inhibitors provide. Sulindac and low-dose aspirin (81 mg/day) are less likely to cause these negative effects.

Ref: Bleumink GS, Feenstra J, Sturkenboom MC, et al: Nonsteroidal anti-inflammatory drugs and heart failure. *Drugs* 2003;63(6):525-534. 2) Amabile CM, Spencer AP: Keeping your patient with heart failure safe: A review of potentially dangerous medications. *Arch Intern Med* 2004;164(7):709-720. 3) Burton R, Kaplan N: NSAIDs effects in hypertension and heart failure. *UpToDate* 1/8/04, version 12.1.

Item 63

ANSWER: A

Infants born to hepatitis B–positive mothers should receive both immune globulin and hepatitis B vaccine. They should receive the entire series of the vaccine, with testing for seroconversion only after completion of the vaccination series; the recommended age for testing is 9–12 months of age.

Ref: Middleton DB, Zimmerman RK, Mitchell KB: Vaccine schedules and procedures, 2001. *J Fam Pract* 2001;50(10):S36-S47.

Item 64

ANSWER: A

Both ectopic pregnancy and spontaneous or therapeutic abortion pose a significant risk for fetomaternal hemorrhage. Thus, administration of RHO immune globulin (RhoGAM) is recommended in **any** Rh-negative patient who is unsensitized (D antibody screen–negative prior to administration of RhoGAM). If the estimated gestational age is 12 weeks or less, 50 :g of RhoGAM is recommended. If the estimated gestational age is greater than 12 weeks, 300 :g of RhoGAM is recommended.

Ref: Scott JR, Gibbs RS, Karlan BY, et al (eds): *Danforth's Obstetrics and Gynecology*, ed 9. Lippincott Williams & Wilkins, 2003, pp 316-323. 2) Moise KJ: Diagnosis and management of Rhesus (Rh) alloimmunization. *UpToDate* 5/23/03. Version 11.3.

Item 65**ANSWER: E**

Most American women who have undergone hysterectomy are not at risk of cervical cancer, as they underwent the procedure for benign disease and no longer have a cervix. U.S. Preventive Services Task Force recommendations issued in 1996 stated that routine Papanicolaou (Pap) screening is unnecessary for these women. Nevertheless, data from the Behavioral Risk Factor Surveillance System (1992–2002) indicated that in the previous 3 years, some 69% of women with a previous history of hysterectomy for benign causes had undergone screening.

Ref: U.S. Preventive Services Task Force: Recommendations and rationale: Screening for cervical cancer. U.S. Preventive Services Task Force, U.S. Department of Health and Human Services, 2002. 2) Sirovich BE, Welch HG: Cervical cancer screening among women without a cervix. *JAMA* 2004;291(24):2990.

Item 66**ANSWER: A**

Suppressive therapy with acyclovir, valacyclovir, or famciclovir reduces, but does not eliminate, the risk of transmission of HSV to sexual partners. HSV type 1 and HSV type 2 infections in the genital area are clinically identical. Psychological issues, including anger, guilt, low self-esteem, anxiety, and depression are common after first receiving a diagnosis of genital HSV infection. Initial clinical outbreaks of genital HSV infections are often recurrences of previous infection. Either of the partners may have had an asymptomatic infection acquired in a previous relationship. An experimental HSV type 2 vaccine has been developed, but it is ineffective in men.

Ref: Kimberlin DW, Rouse DJ: Genital herpes. *N Engl J Med* 2004;350(19):1970-1977.

Item 67**ANSWER: E**

Cardiovascular disease is the leading cause of death among women. According to the CDC, 29.3% of deaths in females in the U.S. in 2001 were due to cardiovascular disease and 21.6% were due to cancer, with most resulting from lung cancer. Breast cancer is the third most common cause of cancer death in women, and ovarian cancer is the fifth most common.

Ref: Anderson RN, Smith BL: Deaths: Leading causes for 2001. *Natl Vital Stat Rep* 2003 Nov 7;52(9). Available at www.cdc.gov/nchs/data/nvsr/nvsr52/nvsr52_09.pdf. 2) Centers for Disease Control: CDC Office of Women's Health. Leading causes of death females—United States, 2001. Available at www.cdc.gov/od/spotlight/nwhw/lcod.htm. 3) American Cancer Society: *Cancer Facts and Figures 2002*. Publication number 02-250M-No. 5008.02. 4) Centers for Disease Control and Prevention: CDC recommendations regarding selected conditions affecting women's health. *MMWR* 2000;49(RR-2):1-73.

Item 68**ANSWER: C**

The patient exhibits signs of a moderate bleeding diathesis. Her prothrombin time (PT) elevation, without evidence of hepatocellular damage or hepatic dysfunction, is highly suspicious for warfarin ingestion. The normalization of the PT under observation in a hospital setting is consistent with this suspicion. Although accidental poisoning is a possibility, the mother's affect is highly suspicious for Munchausen syndrome by proxy. The fact that her mother is a health-care worker and develops a close and appropriate relationship with the health-care team is consistent with this diagnosis. Acetaminophen toxicity of this degree would likely produce transaminase and bilirubin elevations, as well as mental status changes. Antiphospholipid syndrome produces a hypercoagulable state. Henoch-Schönlein purpura presents with purpura, joint pain, abdominal pain, and a normal PT. Traumatic injury would not result in PT elevations.

Ref: Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 73, 122, 130-131.

Item 69**ANSWER: C**

Melasma or chloasma is common in pregnancy, with approximately 70% of pregnant women affected. It is an acquired hypermelanosis of the face, with symmetric distribution usually on the cheeks, nose, eyebrows, chin, and/or upper lip. The pathogenesis is not known. UV sunscreen is important, as sun exposure worsens the condition. Melasma often resolves or improves post partum. Persistent melasma can be treated with hydroquinone cream, retinoic acid, and/or chemical peels performed post partum by a dermatologist.

The facial rash of lupus is usually more erythematous, and lupus is relatively rare. Pemphigoid gestationis is a rare autoimmune disease with extremely pruritic, bullous skin lesions that usually spare the face. Prurigo gestationis involves pruritic papules on the extensor surfaces and is usually associated with significant excoriation by the uncomfortable patient.

Ref: Gabbe SG, Niebyl JR, Simpson JL (eds): *Obstetrics: Normal and Problem Pregnancies*, ed 4. Churchill Livingstone, 2002, pp 1283-1284.

Item 70**ANSWER: C**

Postpartum depression is a highly prevalent disorder with consequences that can be profound. The "postpartum blues" affect up to 85% of women and typically resolve by the tenth postpartum day, whereas the onset of postpartum depression may not occur until 6 months following delivery. Evidence regarding the benefit of hormonal therapy for patients with postpartum depression is lacking. Generally, postpartum depression can be managed on an outpatient basis unless the illness is severe. SSRIs are ideal first-line agents and should be used for similar periods of time and in dosages comparable to those prescribed to patients who suffer from nonpuerperal illness.

Ref: Gold LH: Postpartum disorders in primary care: Diagnosis and treatment. *Prim Care* 2002;29(1):27-41.

Item 71**ANSWER: A**

It is recommended that sexually active women under the age of 25 years be screened routinely for *Chlamydia trachomatis*. Treatment of asymptomatic infections in women reduces their risk of developing pelvic inflammatory disease, tubal infertility, ectopic pregnancy, and chronic pelvic pain. A 1-gram dose of oral azithromycin is an appropriate treatment, including during pregnancy. Sexual contacts during the preceding 60 days should be either treated empirically or tested for infection and treated if positive. The patient should avoid sexual intercourse for 7 days after initiation of treatment. Consistent use of barrier methods for contraception reduces the risk of *C. trachomatis* genital infection.

Ref: Peipert JF: Genital chlamydial infections. *N Engl J Med* 2004;349(25):2424-2430.

Item 72**ANSWER: A**

Cellulitis in patients after breast lumpectomy is thought to be related to lymphedema. Axillary dissection and radiation predispose to these infections. Non-group A hemolytic *Streptococcus* is the most common organism associated with this infection. The onset is often several weeks to several months after surgery.

Pneumococcus is more frequently a cause of periorbital cellulitis. It is also seen in patients who have bacteremia with immunocompromised status. Immunocompromising conditions would include diabetes mellitus, alcoholism, lupus, nephritic syndrome, and some hematologic cancers.

Clostridium and *Escherichia coli* are more frequently associated with crepitant cellulitis and tissue necrosis. *Pasteurella multocida* cellulitis is most frequently associated with animal bites, especially cat bites.

Ref: Swartz MN: Cellulitis. *N Engl J Med* 2004;350(9):904-912.

Item 73**ANSWER: E**

In patients with head and neck lymphadenopathy, supraclavicular nodes are the most likely to be malignant. Lymphadenopathy of these nodes should always be investigated, even in children. Overall, the prevalence of malignancy with this presentation is unknown, but rates of 54%–85% have been seen in biopsy series reports.

Ref: Bazemore AW, Smucker DR: Lymphadenopathy and malignancy. *Am Fam Physician* 2002;66(11):2103-2110.

Item 74

ANSWER: D

Acute uncomplicated cystitis in women can be effectively and inexpensively treated with a 3-day course of trimethoprim/sulfamethoxazole before the infecting organism is known. Generally, either trimethoprim/sulfamethoxazole, a fluoroquinolone, or nitrofurantoin is a suitable choice for uncomplicated cystitis. Because of a probable drug allergy and a high prevalence of resistant *Escherichia coli* in the community, this patient should not be given trimethoprim/sulfamethoxazole. A fluoroquinolone is not listed among the choices. Thus, in a patient with acute, uncomplicated cystitis, the most appropriate regimen from the choices listed is nitrofurantoin for 5–7 days.

Urinary tract infections that recur after the use of antimicrobial agents, or that are acquired in the hospital or nursing home, are more likely to be due to antibiotic-resistant gram-negative bacilli. A fluoroquinolone, oral amoxicillin/clavulanate, or an oral third-generation cephalosporin such as cefpodoxime, cefdinir, or ceftibuten can be useful in treating such infections in the outpatient setting. However, the patient described here does not fall into these categories. Neither azithromycin nor metronidazole alone is indicated as the drug of choice for a simple bacterial urinary tract infection. They are commonly used for the treatment of chlamydial cervicitis and trichomoniasis of the urogenital tract, respectively.

Ref: Choice of antibacterial drugs. *Treatment Guidelines from The Medical Letter* 2004;2(19):13-24.

Item 75

ANSWER: C

When the just-delivered fetal head retracts firmly against the perineum, shoulder dystocia is apparent. This is an obstetric emergency that requires appropriate assistance and a calm but timely approach to ensure a safe delivery. While all of the maneuvers described are steps in managing shoulder dystocia, the McRoberts maneuver by itself (maximal flexion and abduction of the maternal hips) relieves the impaction of the anterior shoulder against the maternal symphysis in a large percentage of cases, especially when combined with suprapubic pressure.

Ref: Baxley EG, Gobbo RW: Shoulder dystocia. *Am Fam Physician* 2004;69(7):1707-1713.

Item 76

ANSWER: E

The major concern with regard to pneumonia in the nursing-home setting is the increased frequency of oropharyngeal colonization by gram-negative organisms. In the absence of collectible or diagnostic sputum Gram's stains or cultures, empiric therapy must cover *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Haemophilus influenzae*, and gram-negative bacteria. Levofloxacin is the best single agent for providing coverage against this spectrum of organisms.

Ref: Niederman MS, Mandell LA, Anzueto A, et al: Guidelines for the management of adults with community-acquired pneumonia. Diagnosis, assessment of severity, antimicrobial therapy, and prevention. *Am J Respir Crit Care Med* 2001;163(7):1730-1754. 2) Cassel CK, Leipzig RM, Cohen HJ, et al (eds): *Geriatric Medicine: An Evidence-Based Approach*, ed 4. Springer, 2003, pp 806-808. 3) Hazzard WR, Blass JP, Halter JB, et al (eds): *Principles of Geriatric Medicine and Gerontology*, ed 5. McGraw-Hill, 2003, pp 207-208, 1093-1094.

Item 77**ANSWER: A**

The criteria for severe preeclampsia specify a blood pressure of 160/110 mm Hg or above on two occasions, 6 hours apart. Other criteria include proteinuria above 5 g/24 hr, thrombocytopenia with a platelet count <100,000/mm³, liver enzyme abnormalities, epigastric or right upper quadrant pain, and alteration of mental status.

Ref: Sibai BM: Diagnosis and management of gestational hypertension and preeclampsia. *Obstet Gynecol* 2003;102(1):181-192.
2) DeCherney AH, Nathan L (eds): *Current Obstetric & Gynecologic Diagnosis & Treatment*, ed 9. Lange Medical Books/McGraw-Hill, 2003, p 338.

Item 78**ANSWER: B**

The diagnosis of hereditary hemochromatosis is based on a combination of clinical, laboratory, and pathologic criteria. Serum transferrin saturation is the best initial screening value. Serum ferritin concentration is a sensitive measure of iron overload, but ferritin is an acute-phase reactant and is therefore elevated in a variety of infectious and inflammatory conditions in the absence of iron overload.

Ref: Brandhagen DJ, Fairbanks VF, Baldus W: Recognition and management of hereditary hemochromatosis. *Am Fam Physician* 2002;65(5):853-860.

Item 79**ANSWER: E**

The anterior fontanelle in the newborn is normally 0.6–3.6 cm, with the mean size being 2.1 cm. It may actually enlarge the first few months, but the median age of closure is 13.8 months. The anterior fontanelle closes at 3 months in 1% of cases, and by 1 year, 38% are closed.

While early closure of the anterior fontanelle may be normal, the head circumference must be carefully monitored. The patient needs to be monitored for craniosynostosis (premature closure of one or more sutures) and for abnormal brain development. When craniosynostosis is suspected, a skull radiograph is useful for initial evaluation. If craniosynostosis is seen on the film, a CT scan should be obtained.

Ref: Kiesler J, Ricer R: The abnormal fontanel. *Am Fam Physician* 2003;67(12):2547-2552.

Item 80

ANSWER: E

Reflex syncope is a strong diagnostic consideration for episodes of syncope associated with a characteristic precipitating factor. The major categories of syncope include carotid sinus hypersensitivity, and neurally mediated and situational syncopes. The most common and benign forms of syncope are neurally mediated or vasovagal types with sudden hypotension, frequently accompanied by bradycardia. Other terms for this include neurocardiogenic, vasomotor, neurovascular, or vasodepressive syncope. Most patients are young and otherwise healthy. The mechanism of the syncope seems to be a period of high sympathetic tone (often induced by pain or fear), followed by sudden sympathetic withdrawal, which then triggers a paradoxical vasodilatation and hypotension. Attacks occur with upright posture, often accompanied by a feeling of warmth or cold sweating, lightheadedness, yawning, or dimming of vision. If the patient does not lie down quickly he or she will fall, with the horizontal position allowing a rapid restoration of central perfusion. Recovery is rapid, with no focal neurologic sense of confusion or headache. The event can be duplicated with tilt testing, demonstrating hypotension and bradycardia.

Ref: Weimer LH, Williams O: Syncope and orthostatic intolerance. *Med Clin North Am* 2003;87(4):835-865.

Item 81

ANSWER: E

The risk of ovarian cancer is decreased by at least half among women who use oral contraceptives, including those who use low-estrogen formulations. With the use of oral contraceptives, the risk of thromboembolism is increased, the risk of anemia is decreased, the risk of endometrial cancer is decreased, and the severity of acne is decreased.

Ref: Petitti DB: Combination estrogen-progestin oral contraceptives. *N Engl J Med* 2003;349(15):1443-1450.

Item 82

ANSWER: A

Dog bites are a common medical problem. Timely and copious irrigation with normal saline or Ringer's lactate will reduce the rate of infection markedly. Recent wounds and wounds on the face are usually closed primarily. Cultures are usually not helpful unless the wound appears infected. Amoxicillin/clavulanate is the antibiotic of choice for a dog bite. Since this is a neighbor's dog, it can be observed at home for 10 days if the rabies vaccination is current, or at a veterinarian's office if vaccination status is unknown.

Ref: Presutti RJ: Prevention and treatment of dog bites. *Am Fam Physician* 2001;63(8):1567-1572. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 2385-2387. 3) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 740-744, 1159.

Item 83**ANSWER: A**

When evaluating a patient with a solitary thyroid nodule, red flags indicating possible thyroid cancer include male gender; age <20 years or >65 years; rapid growth of the nodule; symptoms of local invasion such as dysphagia, neck pain, and hoarseness; a history of head or neck radiation; a family history of thyroid cancer; a hard, fixed nodule >4 cm; and cervical lymphadenopathy.

Ref: Welker MJ, Orlov D: Thyroid nodules. *Am Fam Physician* 2003;67(3):559-566.

Item 84**ANSWER: C**

This patient has typical findings of melanosis coli, the term used to describe black or brown discoloration of the mucosa of the colon. It results from the presence of dark pigment in large mononuclear cells or macrophages in the lamina propria of the mucosa. The coloration is usually most intense just inside the anal sphincter and is lighter higher up in the sigmoid colon. The condition is thought to result from fecal stasis and the use of anthracene cathartics such as cascara sagrada, senna, and danthron. Ectopic endometrial tissue (endometriosis) most commonly involves the serosal layer of those parts of the bowel adjacent to the uterus and fallopian tubes, particularly the rectosigmoid colon. Collagenous colitis does not cause mucosal pigmentary changes. Melanoma rarely metastasizes multicentrically to the bowel wall. Multiple arteriovenous malformations are more common in the proximal bowel, and would not appear as described.

Ref: Feldman M, Friedman LS, Sleisenger MH (eds): *Sleisenger & Fordtran's Gastrointestinal and Liver Disease*, ed 7. WB Saunders Co, 2004, p 2305. 2) Hardman JG, Limbird LE, Gilman AG (eds): *Goodman & Gilman's The Pharmacological Basis of Therapeutics*, ed 10. McGraw-Hill, 2001, pp 1046-1047. 3) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 231-233.

Item 85**ANSWER: B**

Studies have shown that epidural analgesia increases the length of both the first and second stage of labor. Although there is an increase in the rate of instrument-assisted delivery and fourth degree laceration, an increase in the rate of cesarean sections has not been shown. An increase in the rate of urinary incontinence also has not been shown.

Ref: Leeman L, Fontaine P, King V, et al: The nature and management of labor pain: Part II. Pharmacologic pain relief. *Am Fam Physician* 2003;68(6):1121-1122.

Item 86**ANSWER: A**

When the flexion abduction external rotation (FABER) test elicits pain posteriorly, it indicates sacroiliac involvement. Anterior pain indicates hip involvement.

Ref: Margo K, Drezner J, Motzkin D: Evaluation and management of hip pain: An algorithmic approach. *J Fam Pract* 2003;52(8):607-616.

Item 87**ANSWER: E**

Although the risk of transmitting a virus to a developing fetus is primarily theoretic, live-virus vaccines are generally contraindicated in pregnancy. MMR is a live attenuated vaccine and thus should be avoided in pregnancy. If it is inadvertently given, or a woman becomes pregnant within 4 weeks of administration, the woman should be counseled regarding potential adverse effects on the fetus, but should not be advised that it is an indication for termination.

Tetanus and diphtheria vaccine (Td) should be routinely recommended for pregnant women who have not received Td in the past 10 years, or who have never been immunized. The influenza vaccine is a killed-virus preparation and is recommended for all women who will be pregnant during the influenza season.

Rabies vaccination has not been associated with any fetal abnormalities. Due to the potential severe consequences of rabies exposure to the mother and fetus, the guidelines for postexposure prophylaxis in pregnancy are similar to those for the nonpregnant patient. Hepatitis B vaccine is composed of a viral surface antigen made through recombinant DNA technology and poses no risk to the mother or fetus. It should be routinely recommended to women who have risk factors including multiple sexual partners, a history of intravenous drug use or a partner with a history of intravenous drug use, occupational exposure, or household contact with a chronic carrier or acutely infected person.

Ref: Sur D, Wallis D, O'Connell T: Vaccinations in pregnancy. *Am Fam Physician* 2003;68(2):299-309. 2) Centers for Disease Control and Prevention: *Guidelines for Vaccinating Pregnant Women*. Updated June 2004. Available at www.cdc.gov/nip/publications/preg_guide.pdf.

Item 88**ANSWER: E**

Electroconvulsive therapy (ECT) is as effective as medication for the acute treatment of the severe depression and/or mania of bipolar disorder. However, ECT should be reserved for patients with severe mood syndromes who may be unable to wait for mood-stabilizing drugs to take effect. Neuroleptic (antipsychotic) drugs are effective in acute mania, but are not recommended for long-term use because of side effects. Bipolar depression generally responds to tricyclic antidepressants, SSRIs, and MAO inhibitors, but when used as long-term therapy these drugs may induce episodes of mania.

Anticonvulsants, such as carbamazepine, valproic acid, and benzodiazepines, have been useful adjuncts combined with lithium in patients with breakthrough episodes of mania and/or depression. Lithium is the classic mood stabilizer. It has been shown to have antimanic efficacy, prophylactic efficacy in bipolar disorder, and some efficacy in prophylaxis against bipolar depression. Lithium remains the drug of choice for long-term treatment of the majority of patients with bipolar illness.

Ref: Belmaker RH: Bipolar disorder. *N Engl J Med* 2004;351(5):476-486.

Item 89

ANSWER: B

The use of low-molecular-weight heparin allows patients with acute deep vein thrombosis (DVT) to be managed as outpatients. The dosage is 1 mg/kg subcutaneously twice daily. Patients chosen for outpatient care should have good cardiopulmonary reserve, normal renal function, and no risk for excessive bleeding. Oral anticoagulation with warfarin can be initiated on the first day of treatment after heparin loading is completed.

Monotherapy with warfarin is inappropriate. The incidence of thrombocytopenia with low-molecular-weight heparin is lower than with conventional heparin. The INR should be maintained at 2.0–3.0 in this patient. The 2.5–3.5 range is used for patients with mechanical heart valves. The therapeutic INR should be maintained for 3–6 months in a patient with a first DVT related to travel.

Ref: Weismantel D: Treatment of the patient with deep vein thrombosis. *J Fam Pract* 2001;50(3):249-256. 2) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 570, 1491-1429.

Item 90

ANSWER: D

The MMSE is most commonly used in clinical settings. It is considered valuable because it assesses a broad range of cognitive abilities (i.e., memory, language, spatial ability, set shifting) in a simple and straightforward manner. In addition, the wide use of the MMSE in epidemiologic studies has yielded cutoff scores that facilitate the identification of patients with cognitive dysfunction.

Ref: Geldmacher DS, Gordon B: Dementia in the elderly: Is it Alzheimer's disease? *The AD Letter* 2000;1(1):1-4. 2) Cassel CK, Leipzig RM, Cohen HJ, et al (eds): *Geriatric Medicine: An Evidence-Based Approach*, ed 4. Springer, 2003, p 206.

Item 91

ANSWER: A

Iron deficiency is the most common known form of nutritional deficiency. Its prevalence is highest in children and in women of childbearing age (especially pregnant women).

Ref: Recommendations to prevent and control iron deficiency in the United States. *MMWR* 1998;47(RR-3):1. 2) Iron deficiency—United States, 1999-2000. *MMWR* 2002;51(40):897.

Item 92

ANSWER: A

The diagnosis of depression requires the presence of at least five of the following: depressed mood, sleep disturbance, lack of interest or pleasure in activities, guilt and feelings of worthlessness, lack of energy, loss of concentration and difficulty making decisions, anorexia or weight loss, psychomotor agitation or retardation, and suicidal ideation. The symptoms must be present nearly every day during a 2-week period. Because dementia may cause similar symptoms, distinguishing between the two is important. Dementia is insidious, with a long duration of symptoms including fluctuating mood and memory impairment for recent events. Memory loss often precedes mood changes. Organic problems such as brain tumor, hypoglycemia, and myocardial infarction may cause similar symptoms, but are far less likely to be the cause.

Ref: Birrer RB, Vemuri SP: Depression in later life: A diagnostic and therapeutic challenge. *Am Fam Physician* 2004;69(10):2375-2382.

Item 93

ANSWER: D

Two large European trials studied the use of CA-125 and CA-125 with transvaginal ultrasonography (TVU) as screening methods for ovarian cancer. TVU has been reviewed separately. None of these methods is effective as a screening test. No major organization recommends screening women at average risk. The American Cancer Society does not recommend routine screening; the American College of Obstetricians and Gynecologists recommends against population-based screening; an NIH consensus conference recommended obtaining a family history and performing annual pelvic examinations. The U.S. Preventive Services Task Force graded routine screening for ovarian cancer as a “D,” meaning that there is fair evidence to recommend excluding ovarian cancer screening as a part of the periodic health examination. This recommendation reflects both a lack of benefit from screening and the fact that a significant number of women have to undergo exploratory surgery to find a single case.

Ref: Wender RC, Smith R, Harper D: Cancer screening. *Prim Care* 2002;29(3):697-725.

Item 94

ANSWER: E

The gastrointestinal tract is the most likely reservoir of group B *Streptococcus* with secondary spread to the genital tract. Cultures from the vaginal introitus and the rectum are the most sensitive for detecting colonization. No speculum examination is necessary. The closest time to delivery that cultures can be performed and allow time for results to be available is 35–37 weeks gestation. Culture-positive women are then treated during labor. Other criteria for the use of chemoprophylaxis during delivery continue to apply.

Ref: Centers for Disease Control and Prevention: Prevention of perinatal group B streptococcal disease: A public health perspective. *MMWR* 1996;45(RR-7):1-24. 2) Hospital-based policies for prevention of perinatal group B streptococcal disease—United States, 1999. *MMWR* 2000;49(41):936-940. 3) Adoption of perinatal group B streptococcal disease prevention recommendations by prenatal-care providers—Connecticut and Minnesota, 1998. *MMWR* 2000;49(11):228-231. 4) Pickering LK (ed): *2003 Red Book: Report of the Committee on Infectious Diseases*, ed 26. American Academy of Pediatrics, 2003, pp 584-591.

Item 95

ANSWER: C

Complaints of discomfort in the eye with blurred vision and a history of striking steel should arouse strong suspicion of an intraocular foreign body.

Ref: Vaughan D, Asbury T, Riordan-Eva P: *General Ophthalmology*, ed 15. Appleton & Lange, 1999, pp 350-351. 2) Goldman L, Ausiello D (eds): *Cecil Textbook of Medicine*, ed 22. Saunders, 2004, pp 2406-2408. 3) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, p 165.

Item 96

ANSWER: C

The recommended age range for administration of intranasal influenza vaccine is between 5 and 50 years of age. It should not be given to family members of immunocompromised patients. A history of egg allergy is a contraindication to its use. Allergic rhinitis is not a contraindication.

Ref: FluMist: An intranasal live vaccine. *Med Lett Drugs Ther* 2003;45(1163):65-66.

Item 97

ANSWER: A

A recent expert consensus panel endorsed the use of second-generation antipsychotics rather than first-generation drugs. Tardive dyskinesia is much less common with the use of second-generation antipsychotics. Several of the second-generation drugs require monitoring for major side effects, however. For example, clozapine, shown by studies to be the most efficacious of the new class, causes granulocytopenia or agranulocytosis, requiring weekly and later biweekly monitoring of blood counts. Both classes have depot formulations for intramuscular administration every 2–4 weeks. Oral dosing of drugs from both classes varies from 1 to 3 times daily. First-generation antipsychotics cost less than second-generation drugs.

Ref: Kane JM, Leucht S, Carpenter D, et al: Expert consensus guideline series. Optimizing pharmacologic treatment of psychotic disorders. Introduction: Methods, commentary, and summary. *J Clin Psychiatry* 2003;64 supp 12:5-19. 2) Choice of an antipsychotic. *Med Lett Drugs Ther* 2003;45(1172):102-104.

Item 98

ANSWER: E

While anticholinergics such as benztropine and amantadine may provide some improvement of symptoms, these effects wane within a few months. Such medications are not a good option in this patient with advanced disease.

Dopamine agonists provide some improvement in motor complications, but are mainly used to delay the introduction of levodopa in younger patients, to avoid levodopa-related adverse reactions. Carbidopa/levodopa is better for initial therapy in older patients, and those who present with more severe symptoms. Slow-release versions of this combination may decrease motor fluctuations.

Stereotactic thalamotomy is used to ameliorate tremors that have become disabling. This procedure has been replaced by other surgical options such as pallidotomy and high-frequency, deep-brain stimulation of specific nuclei.

Ref: Siderowf A, Stern M: Update on Parkinson disease. *Ann Intern Med* 2003;138(8):651-658. 2) Goldman L, Ausiello D (eds): *Cecil Textbook of Medicine*, ed 22. Saunders, 2004, pp 2306-2310.

Item 99

ANSWER: A

First-line treatment for gonorrhea includes intramuscular ceftriaxone, oral cefixime, ciprofloxacin, ofloxacin, and levofloxacin. Oral amoxicillin is no longer listed as first-line treatment for gonorrhea. Erythromycin and metronidazole are useful in nongonococcal cervicitis, but are not effective in the treatment of gonorrhea.

Ref: Miller KE, Ruiz DE, Graves JC: Update on the prevention and treatment of sexually transmitted diseases. *Am Fam Physician* 2003;67(9):1915-1922.

Item 100

ANSWER: A

Elevated results on prostate-specific antigen (PSA) screening are associated with a variety of factors. A simple rectal examination, however, does not elevate the level.

Benign prostatic enlargement is a frequent cause of mild elevations in PSA. Interventions such as prostatic massage or cystoscopy will also elevate the level. Other conditions that can elevate PSA include urinary tract infections and urinary retention.

Ref: Mokete M, Palmer AR, O'Flynn KJ: High result in prostate specific antigen test. *BMJ USA* 2003;3:549.

Item 101

ANSWER: C

Adnexal masses in women under 45 years of age are benign in 80%–85% of cases. The specific findings of this case also strongly suggest a benign etiology, namely a thin-walled, simple cyst, a lesion that is less than 8 cm in size, and a patient of relatively young age. No aggressive means are indicated in these situations unless there are significant clinical symptoms such as pain, abdominal pressure, urinary symptoms, or gastrointestinal symptoms. Most experts currently recommend a conservative approach with repeat ultrasonography in at least 2 months, during which time the vast majority of benign cysts resolve spontaneously.

Ref: Berek JS (ed): *Novak's Gynecology*, ed 13. Lippincott Williams & Wilkins, 2002, pp 382-387, 396-398.

Item 102**ANSWER: C**

Headaches, and migraines in particular, are very common in women of childbearing age. Migraine sufferers usually have improvement of symptoms in pregnancy and many have complete remission. Most medications used for prophylaxis and abortive treatment of migraines in the nonpregnant patient can also be used in pregnant patients. Most β -blockers and calcium channel blockers are safe. Acetaminophen and narcotics can be used for acute pain. Ibuprofen can also be used but should be avoided *late* in pregnancy because it is associated with premature closure of the ductus arteriosus and oligohydramnios. Ergotamines should be avoided as they are uterotonic and have abortifacient properties. They have also been associated with case reports of fetal birth defects. Triptans have the potential to cause vasoconstriction of the placental and uterine vessels and should be used only if the benefit clearly outweighs the harm.

Ref: Gabbe SG, Niebyl JR, Simpson JL (eds): *Obstetrics: Normal and Problem Pregnancies*, ed 4. Churchill Livingstone, 2002, pp 1244-1246.

Item 103**ANSWER: B**

Low-dose inhaled corticosteroids are preferred for patients with mild persistent asthma, defined as the occurrence of symptoms more than twice a week but less than once a day. Patients with severe persistent asthma, defined as continual symptoms, should be treated with high-dose inhaled corticosteroids and long-acting inhaled β_2 -agonists. Moderate asthma, defined as daily symptoms, should be treated with low- to medium-dose inhaled corticosteroids and long-acting inhaled β_2 -agonists. Mild intermittent asthma, with symptoms 1 or 2 days per week, does not require daily medication.

Ref: National Asthma Education and Prevention Program: Expert Panel Report: Guidelines for the diagnosis and management of asthma on selected topics—2002. *J Allergy Clin Immunol* 2002;110(5 suppl):S141-S219.

Item 104**ANSWER: B**

According to the Summary of the National Cholesterol Education Program (NCEP) Adult Treatment Panel III Report of 2001, any person with elevated LDL cholesterol or any other form of hyperlipidemia should undergo clinical or laboratory assessment to rule out secondary dyslipidemia before initiation of lipid-lowering therapy. Causes of secondary dyslipidemia include diabetes mellitus, hypothyroidism, obstructive liver disease, chronic renal failure, and some medications.

Ref: Executive summary of the Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). *JAMA* 2001;285(19):2486-2509.

Item 105**ANSWER: A**

Chlamydial genital infection is reported in 5%–30% of pregnant women, with vertical transmission to >50% of their infants at birth. An infant born to a mother with active chlamydial infection has a 50%–70% risk of acquiring infection at any anatomical site. Approximately 30%–50% of infants born to *Chlamydia-positive* mothers will develop conjunctivitis, and at least 50% of these children will also have nasopharyngeal infection. Infants born to women with chlamydial infection may also develop associated pneumonia, but this affects only 10%–20% of this population.

Ref: Peipert JF: Genital chlamydial infections. *N Engl J Med* 2003;349(25):2424-2430. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, p 997.

Item 106**ANSWER: C**

Clozapine is one of the so-called second-generation antipsychotics, which are believed to be less likely to cause extrapyramidal side effects than the first-generation drugs such as haloperidol or the phenothiazines (e.g., fluphenazine). A 2003 meta-analysis concluded that clozapine was the most efficacious second-generation antipsychotic, followed by risperidone and olanzapine. However, clozapine use is associated with an approximately 1% incidence of granulocytopenia or agranulocytosis. Early detection by monitoring blood counts every 1–2 weeks has led to a reduction in agranulocytosis-related death, but clozapine is generally considered second-line therapy, to be used in cases unresponsive to other drugs.

Ref: Choice of an antipsychotic. *Med Lett Drugs Ther* 2003;45:102-104.

Item 107**ANSWER: A**

Croup is a viral illness and is not treated with antibiotics. Racemic epinephrine may be used acutely, but rebound can occur. Albuterol has not been shown to be helpful. Oral or intramuscular dexamethasone, 0.6 mg/kg as a single dose, and nebulized budesonide have been shown to reduce croup scores and shorten hospital stays.

Ref: Knutson D, Aring A: Viral croup. *Am Fam Physician* 2004;69(3):535-540.

Item 108**ANSWER: D**

Trying to distinguish between anxiety and depression can be difficult because there is a high incidence of depressive symptoms in patients with anxiety disorders, and a significant number of individuals with major depression have anxiety symptoms. A number of symptoms are characteristic of both disorders, such as sleep disturbance, appetite changes, difficulty concentrating, irritability, fatigue, thoughts of suicide or death, and nonspecific gastrointestinal or cardiac complaints.

Features that are more characteristic of anxiety include difficulty falling asleep, apprehensive expectations or feelings of dread, tremors or palpitations, phobic avoidance behavior, rapid pulse and other autonomic hyperactivity, breathing disturbances, sweating spells, feeling faint or dizzy, depersonalization (feelings of detachment from one's body), or derealization (a sensation that the immediate environment is unreal or unfamiliar). Findings more characteristic of depression include early morning awakening, diurnal variation (feeling worse in the mornings), sad and downcast facial expressions, psychomotor retardation (slowed speech, slowed thought processes), chronic unexplained pain, sadness, feeling guilty, hopelessness, feelings of worthlessness, despair, loss of interest in usual activities, anhedonia (inability to experience pleasure), and difficulty in making decisions.

Ref: Sadock BJ, Sadock VA (eds): *Kaplan & Sadock's Comprehensive Textbook of Psychiatry*, ed 7. Lippincott Williams & Wilkins, 2000, pp 223, 1369, 2167-2168.

Item 109

ANSWER: D

The American Academy of Dermatology grades acne as mild, moderate, and severe. Mild acne is limited to a few to several papules and pustules without any nodules. Patients with moderate acne have several to many papules and pustules with a few to several nodules. Patients with severe acne have many or extensive papules, pustules, and nodules.

The patient has mild acne according to the American Academy of Dermatology classification scheme. Topical treatments including benzoyl peroxide, retinoids, and topical antibiotics are useful first-line agents in mild acne. Topical sulfacetamide is not considered first-line therapy for mild acne. Oral antibiotics are used in mild acne when there is inadequate response to topical agents and as first-line therapy in more severe acne. Caution must be used to avoid tetracycline in pregnant females. Oral isotretinoin is used in severe nodular acne, but also must be used with extreme caution in females who may become pregnant. Special registration is required by physicians who use isotretinoin, because of its teratogenicity.

Ref: Feldman S, Careccia RE, Barham KL, et al: Diagnosis and treatment of acne. *Am Fam Physician* 2004;69(9):2123-2136.

Item 110

ANSWER: C

The 1991 National Institutes of Health Consensus Development Panel recommended that surgical treatment of severe obesity be considered for any patient with a BMI >40 or those with a BMI >35 who have serious coexisting medical problems. Examples of such coexisting medical problems include severe sleep apnea, Pickwickian syndrome, obesity-related cardiomyopathy, and severe diabetes mellitus.

Ref: Brolin RE: Bariatric surgery and long-term control of morbid obesity. *JAMA* 2002;288(22):2793-2796.

Item 111

ANSWER: B

The three most common knee conditions in children and adolescents are patellar subluxation, tibial apophysitis, and patellar tendinitis. Gout, osteoarthritis, and popliteal cysts present in older adults. Inflammatory arthritis is more common in adults than in children.

Ref: Calmbach WL, Hutchens M: Evaluation of patients presenting with knee pain: Part II. Differential diagnosis. *Am Fam Physician* 2003;68(5):917-922.

Item 112

ANSWER: E

Five recent randomized, controlled trials have indicated that in most patients with atrial fibrillation, an initial approach of rate control is best. Patients who were stratified to the rhythm control arm of the trials did NOT have a morbidity or mortality benefit and were more likely to suffer from adverse drug effects and increased hospitalizations. The most efficacious drugs for rate control are calcium channel blockers and β -blockers. Digoxin is less effective for rate control and should be reserved as an add-on option for those not controlled with a β -blocker or calcium channel blocker, or for patients with significant left ventricular systolic dysfunction.

In patients 65 years of age or older or with one or more risk factors for stroke, the best choice for anticoagulation to prevent thromboembolic disease is warfarin. Of note, in patients who are successfully rhythm controlled and maintained in sinus rhythm, the thromboembolic rate is equivalent to those managed with a rate control strategy. Thus, the data suggest that patients who choose a rhythm control strategy should be maintained on anticoagulation regardless of whether they are consistently in sinus rhythm.

Ref: Snow V, Weiss K, LeFevre M, et al: Management of newly detected atrial fibrillation: A clinical practice guideline from the AAFP and the ACP. *Ann Intern Med* 2003;139(12):1009-1017. 2) McNamara RL, Tamariz L, Segal JB, et al: Management of atrial fibrillation: Review of the evidence for the role of pharmacologic therapy, electrical cardioversion and echo. *Ann Intern Med* 2003;139(12):1018-1033.

Item 113

ANSWER: C

The classic clinical presentation of placenta previa is painless, bright red vaginal bleeding. This diagnosis must be considered in all patients beyond 24 weeks gestation who present with bleeding. Threatened abortion is unlikely at this stage of pregnancy and hemorrhagic cystitis is not accompanied by brisk bleeding. Abruptio of the placenta is the most common cause of intrapartum fetal death but is associated not only with brisk vaginal bleeding, but also with uterine tenderness that may be marked. Clinical signs of chorioamnionitis include purulent vaginal discharge, fever, tachycardia, and uterine tenderness.

Ref: Rakel RE: *Textbook of Family Practice*, ed 6. WB Saunders Co, 2002, pp 518-556.

Item 114**ANSWER: A**

All of the herbal preparations listed are important to ask about when performing a preoperative evaluation, but the potential hypoglycemic and anticoagulant effect of ginseng requires that it be stopped at least 7 days before surgery.

Ref: Ang-Lee MK, Moss J, Yuan CS: Herbal medicines and perioperative care. *JAMA* 2001;286(2):208-214.

Item 115**ANSWER: A**

Rigidity, sialorrhea, and stooped posture are parkinsonian side effects of neuroleptic drugs. These are treated with anticholinergic drugs such as benztropine or amantadine. Dystonia, often manifested as an acute spasm of the muscles of the head and neck, also responds to anticholinergics. Akathisia (motor restlessness and an inability to sit still) can be treated with either anticholinergic drugs or β -blockers.

Ref: Sadock JB, Sadock VA (eds): *Kaplan & Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry*, ed 9. Lippincott Williams & Wilkins, 2003, pp 1009, 1012-1015.

Item 116**ANSWER: A**

The patient has the typical symptoms and signs of bacterial vaginosis. There is no need for confirmatory testing. The treatment of choice is oral metronidazole, which may cause a disulfiram-like interaction with alcohol. Treatment of the partner has not been shown to improve the outcome.

Ref: Branch WT (ed): *Office Practice of Medicine*, ed 4. Saunders, 2003, pp 581-585.

Item 117**ANSWER: D**

Most decision trees for the evaluation of hyponatremia begin with an assessment of volume status; edema reflects volume overload and increased total body sodium caused by congestive heart failure, cirrhosis, or renal failure. If edema is absent, plasma osmolality should be determined. SIADH, Addison's disease (hypoadrenalism), diuretic use, and renal artery stenosis all lower serum osmolality. Urine electrolytes help distinguish the other conditions: psychogenic polydipsia causes low urine sodium, while SIADH and hypoadrenalism cause inappropriately elevated urine sodium. Diuretic use, a very common cause of hyponatremia in the geriatric population, causes hypovolemic hyponatremia and can be associated with either high or low urine sodium, but there is often concomitant hypokalemia.

Ref: Goh KP: Management of hyponatremia. *Am Fam Physician* 2004;69(10):2387-2394.

Item 118

ANSWER: B

In patients who are depressed after coronary artery bypass graft (CABG) surgery, impaired memory and cognition are seen more frequently than other depressive symptoms. Patients with rapid progression of cardiac symptoms before surgery are at particular risk of depressive symptoms after surgery. Newly depressed patients are at higher risk than non-depressed patients for long-term cardiovascular events and death from cardiovascular causes. The Sertraline AntiDepressant Heart Attack Randomized Trial (SADHART) showed that antidepressant use was associated with a slight, but not significant, reduction in the rates of cardiovascular events. The Enhancing Recovery in Coronary Heart Disease (ENRICH) trial showed that although it did not reduce the risk of cardiac events, participation in a cardiac rehabilitation program reduced depressive symptoms and increased social ties.

Ref: Charlson ME, Isom OW: Care after coronary-artery bypass surgery. *N Engl J Med* 2003;348(15):1456-1463.

Item 119

ANSWER: D

A retrospective review of 650 patients with suspected appendicitis showed a sensitivity of 97% and a specificity of 98% for spiral CT. In patients in whom the clinical diagnosis was uncertain, sensitivity was 92% and specificity was 85%. Two prospective studies comparing ultrasonography with spiral CT have favored spiral CT. Ultrasonography is used in women who are pregnant and women in whom there is a high degree of suspicion of gynecologic disease. Abdominal radiography has low specificity and sensitivity for the diagnosis of acute appendicitis. Air contrast barium enema also has low accuracy. Limitations of MRI include increased cost, decreased availability, and increased examination time compared to CT.

Ref: Paulson EK, Kalady MF, Pappas TN: Suspected appendicitis. *N Engl J Med* 2003;348(16):236-242. 2) Pedrosa I, Rofsky NM: MR imaging in abdominal emergencies. *Radiol Clin North Am* 2003;41(6):1243-1273.

Item 120

ANSWER: B

This is a classic presentation of a possible scaphoid fracture. This fracture is important to diagnose and treat appropriately because of a high rate of non-union. If radiographs are negative, the patient should be placed in a thumb spica splint and have repeat radiographs in 2 weeks, because initial studies may be negative. An Ace bandage or a sugar tong splint would be inappropriate because they do not immobilize the thumb. A long arm cast for 8 weeks would immobilize the thumb, but could lead to loss of function, and may overtreat the injury if it is not truly a scaphoid fracture.

Ref: Daniels J, Zook E, Lynch J: Hand and wrist injuries. Part I. Nonemergent evaluation. *Am Fam Physician* 2003;69(8):1941-1948.

Item 121

ANSWER: B

When straw-colored or grey-green fluid is obtained by fine-needle aspiration of a breast nodule and the lesion completely disappears, the diagnosis is simple cyst. The fluid should not be sent for analysis because the risk for cancer is exceedingly small. If the fluid is bloody or otherwise unusual, it should be sent for cytologic examination because about 7% of bloodstained aspirates are associated with cancer.

Ref: Kerlikowske K, Smith-Birdman R, Ljung B, et al: Evaluation of abnormal mammography results and palpable breast abnormalities. *Ann Intern Med* 2003;139(4):274-284.

Item 122

ANSWER: B

Almost all glass is visible on radiographs if it is 2 mm or larger, and contrary to popular belief, it doesn't have to contain lead to be visible on plain films. Many common or highly reactive materials, such as wood, thorns, cactus spines, some fish bones, other organic matter, and most plastics, are not visible on plain films. Alternative techniques such as ultrasonography or CT scanning may be effective and necessary in those cases. Sea urchin spines, like many animal parts, have not been found to be easily detected by plain radiography.

Ref: Tintinalli JE (ed): *Emergency Medicine: A Comprehensive Study Guide*, ed 6. McGraw-Hill, 2004, pp 318-324.

Item 123

ANSWER: A

The U.S. Preventive Services Task Force found that β -carotene supplementation provides no benefit in the prevention of cancer in middle-aged and older adults. In two trials limited to heavy smokers, supplementation with β -carotene was associated with a higher incidence of lung cancer and all-cause mortality. In general, little evidence was found to determine whether supplementation of any of the mentioned vitamins reduces the risk of cardiovascular disease or cancer.

Ref: U.S. Preventive Services Task Force: Routine vitamin supplementation to prevent cancer and cardiovascular disease: Recommendations and rationale. *Ann Intern Med* 2003;139(1):51-55.

Item 124

ANSWER: C

Even mild chronic excess thyroid hormone replacement over many years can cause bone mineral resorption, increase serum calcium levels, and lead to osteoporosis. The elevated calcium decreases parathyroid hormone. Goiter is an indicator, not a cause, for hormone replacement. Osteoarthritis is not related to thyroid hormone replacement.

Ref: Speroff L, Glass RH, Kase NG: *Clinical Gynecologic Endocrinology and Infertility*, ed 6. Lippincott Williams & Wilkins, 1999, p 817. 2) Cassel CK, Leipzig RM, Cohen HJ, et al (eds): *Geriatric Medicine: An Evidence-Based Approach*, ed 4. Springer, 2003, pp 621-650.

Item 125

ANSWER: A

Cilostazol is a drug with phosphodiesterase inhibitor activity introduced for the symptomatic treatment of arterial occlusive disease and intermittent claudication. Cilostazol should be avoided in patients with congestive heart failure. There are no limitations on its use in patients with previous stroke or a history of diabetes. It has been found to have beneficial effects on HDL cholesterol levels and in the treatment of third degree heart block.

Ref: Hiatt WMR: Drug therapy: Medical treatment of peripheral arterial disease and claudication. *N Engl J Med* 2001;344(2):1608-1621. 2) Chapman T, Goa KL: Cilostazol: A review of its use in intermittent claudication. *Am J Cardiovasc Drugs* 2003;3(2):117-138.

Item 126

ANSWER: A

Of the listed options covering the realm of complementary and alternative medicine, only biofeedback has been shown to have a therapeutic effect on migraine. Specifically, the modality that seeks to control physiologic response to skin temperature and skin conductance appears to be the most successful. It is best performed in a medical office by caring, supportive staff members under physician supervision. Oxygen is used to treat cluster headaches. The Epley maneuver is used for managing benign positional vertigo, and phototherapy is useful in seasonal affective disorder. Ma huang, a Chinese herb, has ephedrine properties but is not useful in treating migraine headaches.

Ref: Novey DW (ed): *Clinician's Complete Reference to Complementary/Alternative Medicine*. Mosby, 2000, pp 32-35. 2) Dambro MR (ed): *Griffith's 5 Minute Clinical Consult*. Lippincott Williams & Wilkins, 2002, pp 690-691. 3) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 88-93.

Item 127

ANSWER: A

This patient presents with a history of snakebite, swelling of an entire extremity, weakness, and ecchymosis. This is consistent with a grade III envenomation and merits antivenin therapy. Production of equine-derived antivenin has stopped, but may still be indicated where available. The ovine product, CroFab, is less allergenic but still scarce due to limited production.

Venom extractors are thought to be useful only in the first few minutes after a bite. Two hours is too late to be of any use. Tourniquets are thought to be contraindicated when used to compress an artery. Low-pressure constriction of lymphatic and venous vessels is controversial. Fasciotomy has not proved useful. Antivenin is indicated before any consideration of compartment syndrome. Pressure measurements would be required because of the clinical similarities between envenomation injury and compartment syndrome. Coagulation factors and blood products are rapidly inactivated. They are indicated only in the presence of exsanguination.

Ref: Walter FG, Bilden EF, Gibly RL: Envenomations. *Crit Care Clin* 1999;15(2):353-386. 2) Juckett G, Hancox JG: Venomous snakebites in the United States: Management review and update. *Am Fam Physician* 2002;65(7):1367-1374, 1377. 3) Marx JA (ed): *Rosen's Emergency Medicine*, ed 5. Mosby Inc, 2002, pp 786-793. 4) Rakel RE, Bope ET (eds): *Conn's Current Therapy 2004*. Saunders, 2004, pp 1192-1193.

Item 128**ANSWER: B**

The ability to touch the tip of the thumb to the tip of the little finger indicates normal motor function of the median nerve. The radial nerve controls extension of the thumb and fingers. The median nerve partially controls flexion of the wrist, but the site of innervation is proximal to the wound site at the base of the thumb. Abduction of the thumb is a function of the radial nerve. Finger abduction is a function of the ulnar nerve.

Ref: Marx JA (ed): *Rosen's Emergency Medicine*, ed 5. Mosby Inc, 2002, p 505.

Item 129**ANSWER: B**

Alprazolam (Xanax) has a half-life of about 12 hours, versus 25 hours for clonazepam and 50 hours for flurazepam, clorazepate, and diazepam.

Ref: Sadock BJ, Sadock VA (eds): *Kaplan & Sadock's Comprehensive Textbook of Psychiatry*, ed 7. Lippincott Williams & Wilkins, 2000, p 1013. 2) *Drug Facts and Comparisons, 2003 Edition*. Facts and Comparisons, 2004, pp 1011-1013.

Item 130**ANSWER: A**

Vasomotor symptoms slowly increase until perimenopause, at which time they peak. The symptoms then tend to diminish after menopause. Numerous other pathologic and functional vasomotor etiologies may mimic hot flashes. Estrogen is effective in treating hot flashes but generally should not be given alone, as it increases the risk for endometrial cancer.

Ref: Kaunitz AM: Gynecologic problems of the perimenopause: Evaluation and treatment. *Obstet Gynecol Clin North Am* 2002;29(3):455-473.

Item 131**ANSWER: E**

American Cancer Society guidelines for breast cancer screening were updated in 2003. Of all modalities that are used for screening, the only level A (strong clinical evidence for effectiveness in screening) technology is screen-film mammography. Ultrasonography and MRI have level B evidence, while a dedicated CT scan has level C. There is little clinical evidence that thermography is effective as a screening tool (evidence level D).

Ref: Smith RA, Saslow D, Andrews K, et al: American Cancer Society Guidelines for breast cancer screening: Update, 2003. *CA Cancer J Clin* 2003;53(3):141-169.

Item 132**ANSWER: B**

Dementia with Lewy bodies is currently considered one of the most common etiologies of dementia in elderly patients, representing up to 20%–30% of those with significant memory loss. The clinical presentation consists of parkinsonian symptoms (rigidity, tremor), fluctuating levels of alertness and cognitive abilities, and behavior sometimes mimicking acute delirium. Significant visual hallucinations are common, and delusions and auditory hallucinations are seen to a lesser degree. On pathologic examination, Lewy bodies (seen in the substantia nigra in patients with Parkinson’s disease) are present diffusely in the cortex. There is currently no specific treatment.

Ref: Galvin JE: Dementia with Lewy bodies. *Arch Neurol* 2003;60(9):1332-1335. 2) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison’s Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 2402-2403.

Item 133**ANSWER: A**

Loperamide may be used for mild non-dysenteric traveler’s diarrhea in patients greater than 2 years of age. Parasites rarely cause traveler’s diarrhea. Ciprofloxacin is a good choice for self-treatment of severe or dysenteric diarrhea in adults, but should not be used in children. Prophylactic antibiotics are rarely indicated.

Ref: Ryan ET, Kain KC: Health advice and immunization for travelers. *N Engl J Med* 2000;342(23):1716-1725.

Item 134**ANSWER: E**

Even though the patient’s DEXA has improved and she is technically osteopenic, she still has risk factors for osteoporosis, including recent smoking, low BMI, and a prior fragility fracture. She should continue her current regimen.

Ref: Miller P: Bone mass measurements. *Clin Geriatric Med* 2003;19(2):281-297.

Item 135**ANSWER: C**

Anticonvulsant medications are used in the treatment of various psychiatric disorders. Valproic acid is FDA-approved for the treatment of manic episodes associated with bipolar disorder. It has been shown in controlled studies to be significantly more effective than placebo. The initial dosage is 750 mg daily given in divided doses, and most individuals require between 1000 and 2500 mg daily. Carbamazepine has also been used to treat mania and is an alternative for individuals who cannot tolerate lithium or valproic acid. Clonazepam is used in the treatment of panic attacks, and gabapentin is used to treat anxiety. Both phenytoin and gabapentin are also used to treat peripheral neuropathy. The primary use of phenobarbital is as an anticonvulsant.

Ref: Valproate and other anticonvulsants for psychiatric disorders. *Med Lett Drugs Ther* 2000;42(1094):114-115. 2) *Drug Facts and Comparisons*, 2004 Edition. Facts and Comparisons, 2004, p 1205. 3) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, p 2557.

Item 136

ANSWER: D

Gastroesophageal reflux (GER) is a functional process occurring in a healthy infant. It is common and self-limited, and represents a physiologic process of "spitting up." GER occurs in the absence of poor weight gain, irritability, cough, pain, or anemia. The majority of infants with GER are thriving.

It is important to consider other systemic disorders, and rule them out when appropriate. Possible causes of spitting up include pyloric stenosis, infections (e.g., gastrointestinal, genitourinary), and metabolic disorders. It is not necessary to perform a diagnostic evaluation prior to starting drug therapy unless a structural defect is highly suspected. GER in infants is usually self-limited and resolves by 1 year of age.

Ref: Jung AD: Gastroesophageal reflux in infants and children. *Am Fam Physician* 2001;64(11):1853-1860.

Item 137

ANSWER: C

With widespread immunization against *Haemophilus influenzae* infection, *Streptococcus pneumoniae* has become the predominant cause of serious bacterial infection in infants and young children. In a study of about 9000 well-appearing older infants and young children, 149 (1.7%) had positive blood cultures, 92% of which were *S. pneumoniae*.

Ref: Lee GM, Harper MB: Risk of bacteremia for febrile young children in the *post-Haemophilus influenzae* type b era. *Arch Pediatr Adolesc Med* 1998;152(7):624-628. 2) Luszczak M: Evaluation and management of infants and young children with fever. *Am Fam Physician* 2001;64(7):1219-1226.

Item 138

ANSWER: C

Patients with HIV infection are at increased risk for a number of opportunistic infections, including herpes simplex, human papillomavirus infection, cytomegalovirus infection, and many others. Human herpesvirus 8 (HHV-8) infection is of particular concern because it is associated with Kaposi's sarcoma. The method of transmission is unknown.

Ref: 1999 USPHS/IDSA guidelines for the prevention of opportunistic infections in persons infected with HIV: Part I. Prevention of exposure. *Am Fam Physician* 2000;61(1):163-174.

Item 139

ANSWER: E

The vaginal ring works by releasing etonogestrel and ethinyl estradiol intravaginally. Because it is not a barrier method of contraception, it does not protect against STDs. It is currently recommended that the ring be left in place for 3 weeks and then removed for 1 week so that withdrawal bleeding occurs. A new ring is then inserted. The vaginal ring has a lower incidence of breakthrough bleeding than levonorgestrel/ethinyl estradiol oral contraceptives. In a 1-year study, the majority of women who used the vaginal ring considered insertion and removal of the device easy, and 90% used the device correctly. If for some reason the ring is out of the vagina for more than 3 hours, back-up contraception should be used until the device has been back in place for 7 days.

Ref: Herndon EJ, Zieman M: New contraceptive options. *Am Fam Physician* 2004;69(4):853-860.

Item 140

ANSWER: E

Rifampin, in the absence of major contraindications, is the drug of choice for preventing the spread of meningococcal disease when the susceptibility of the organism is not known. In this situation, meningococcal vaccines are of no value because their protective effects take a few days to develop, and because they do not protect against group B meningococci, the most prevalent strain for meningococcal disease. Sulfadiazine is the drug of choice if the meningococcus is known to be susceptible to it. Chloramphenicol and penicillin, which are effective in treating the disease, are ineffective in eliminating nasopharyngeal carriers of meningococci, possibly because they do not appear in high concentrations in saliva. Culturing contacts for meningococcal carriage in the nasopharynx has no value for identifying those at risk for meningococcal disease.

Ref: Pickering LK (ed): *2003 Red Book: Report of the Committee on Infectious Diseases*, ed 26. American Academy of Pediatrics, 2003, pp 123-137, 430-436.

Item 141

ANSWER: A

The most common cause of nasal obstruction in all age groups is the common cold, which is classified as mucosal disease. Anatomic abnormalities, however, are the most frequent cause of constant unilateral obstruction. Of these, septal deviation is the most common. Foreign body impaction is an important, but infrequent, cause of unilateral obstruction and purulent rhinorrhea. Mucosal disease is usually bilateral and intermittent. Adenoidal hypertrophy is the most common tumor or growth to cause nasal obstruction, followed by nasal polyps, but both are less frequent than true anatomic causes of constant obstruction.

Ref: Fornadley JA: The stuffy nose and rhinitis. *Med Clin North Am* 1999;83(1):1-12. 2) Rakel RE: *Textbook of Family Practice*, ed 6. WB Saunders Co, 2002, pp 447-448.

Item 142**ANSWER: A**

This individual is exhibiting symptoms of delirium. Diagnostic criteria for delirium, according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), include the following:

- A. Disturbance of consciousness (i.e., reduced clarity of awareness about the environment) with reduced ability to focus, sustain, or shift awareness.
- B. A change in cognition (e.g., memory deficit, disorientation, language disturbance) or development of a perceptual disturbance that is not better accounted for by a preexisting, established, or evolving dementia.
- C. Development over a short period of time (usually hours to days) with a tendency to fluctuate during the course of a day.
- D. Evidence from the history, physical examination, or laboratory findings that indicates the disturbance is caused by direct physiologic consequences of a general medical condition.

In the case described, the patient's history does not indicate preexisting problems and she had a relatively abrupt onset of disturbance of consciousness and change in cognition, related to the hospitalization for hip fracture.

Ref: American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders*, ed 4. American Psychiatric Association, 1994, pp 132-133. 2) Gleason OC: Delirium. *Am Fam Physician* 2003;67(5):1025-1034.

Item 143**ANSWER: B**

Celiac sprue is a condition of acquired malabsorption that resolves when the patient is exposed to a gluten-free diet. Gluten is a substance found in wheat, rye, and barley, but not in corn or rice products. Children with this sensitivity will develop inflammation and destruction of the microvilli in the small intestine as a result of an immune response to gluten. Patients with celiac sprue often present as this child has, between 4 and 24 months of age with impaired growth, diarrhea, and abdominal distention. An iron deficiency anemia can occur with impairment of iron absorption from the small intestine. Lesser cases of malabsorption are common, and this condition often goes unrecognized into adolescence or adulthood. Serologic tests, and ultimately a biopsy of the small intestine, can confirm the diagnosis.

Ref: Farrell RJ, Kelly CP: Current concepts: Celiac sprue. *N Engl J Med* 2002;346(3):180-188.

Item 144

ANSWER: D

Genital warts can proliferate and fragment during pregnancy, and many specialists recommend that they be eliminated. Imiquimod, podophyllin, and podofilox are not recommended for use during pregnancy. For the treatment of vaginal warts, the Centers for Disease Control and Prevention (CDC) recommends the use of cryotherapy. Liquid nitrogen, rather than a cryoprobe, should be used to avoid possible vaginal perforation and subsequent fistula formation. An alternative is the use of trichloroacetic acid or bichloroacetic acid carefully applied to the lesions to avoid damage to adjacent tissue. Interferon is no longer recommended for routine use in treating genital warts, due to a high frequency of systemic adverse effects.

Ref: Berek JS (ed): *Novak's Gynecology*, ed 13. Lippincott Williams & Wilkins, 2002, p 405. 2) Centers for Disease Control and Prevention: Sexually transmitted diseases treatment guidelines 2002. *MMWR* 2002;51(RR-6):53-57.

Item 145

ANSWER: C

The appropriate management of a thrombosed hemorrhoid presenting within 48 hours of onset of symptoms is an elliptical excision of the hemorrhoid and overlying skin under local anesthesia (i.e., 0.5% bupivacaine hydrochloride [Marcaine] in 1:200,000 epinephrine) infiltrated slowly with a small (27 gauge) needle for patient comfort.

Incision and clot removal may provide inadequate drainage with rehemorrhage and clot reaccumulation. Most thrombosed hemorrhoids contain multilocular clots which may not be accessible through a simple incision. Rubber band ligation is an excellent technique for management of *internal* hemorrhoids. Banding an external hemorrhoid would cause exquisite pain.

When pain is already subsiding or more time has elapsed (in the absence of necrosis or ulceration), measures such as sitz baths, bulk laxatives, stool softeners, and local analgesia may all be helpful. Some local anesthetics carry the risk of sensitization, however. Counseling to avoid precipitating factors (e.g., prolonged standing/sitting, constipation, delay of defecation) is also appropriate.

Ref: Rakel RE, Bope ET (eds): *Conn's Current Therapy 2004*. Saunders, 2004, pp 538-541. 2) Townsend CM Jr, Beauchamp RD, Evers BM, et al: *Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice*, ed 17. Elsevier Saunders, 2004, pp 1490-1494.

Item 146**ANSWER: D**

Although vital capacity declines with age, total lung capacity remains constant. The reduction in vital capacity results from an increase in residual volume. This increase in residual volume and functional residual capacity results from the collapse of small airways that occurs at higher lung volumes as age increases. Residual volume increases nearly 50% between early adulthood and age 70. In addition, standard spirometric measurements of lung function (i.e., forced expiratory volume in 1 second, peak expiratory flow rate, and maximal expiratory flow volume) have been shown to decline with age. Arterial oxygen tension also slowly declines with age.

Ref: Hazzard WR, Blass JP, Halter JB, et al (eds): *Principles of Geriatric Medicine and Gerontology*, ed 5. McGraw-Hill, 2003, pp 511-515.

Item 147**ANSWER: E**

Neurally mediated syncope (also termed neurocardiogenic or vasovagal syncope) comprises the largest group of disorders causing syncope. These disorders result from reflex-mediated changes in vascular tone or heart rate.

Ref: Kapoor WN: Syncope. *N Engl J Med* 2000;343(25):1856-1862. 2) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 126-128.

Item 148**ANSWER: C**

Pharmacologic treatment of depression should last for a minimum of 6 months after an initial episode.

Ref: Majeroni BA, Hess A: The pharmacologic treatment of depression. *J Am Board Fam Pract* 1998;11(2):127-139. 2) Kaplan HI, Sadock BJ: *Kaplan & Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry*, ed 8. Lippincott Williams & Wilkins, 1998, pp 570-571.

Item 149**ANSWER: C**

The specificity of a test is the true-negative rate, or how well the test correctly identifies patients without disease. The sensitivity of a test is the true-positive rate of the test, or how well the test correctly identifies patients with disease.

Ref: Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 9, 444.

Item 150**ANSWER: A**

In 2000, the American Thoracic Society and the Centers for Disease Control and Prevention (CDC) advocated a shift in focus from screening the general population to testing only patients at increased risk for developing tuberculosis. In some persons PPD reactivity wanes with time but can be recalled by a second skin test administered 1 week or more after the first (i.e., two-step testing). For persons undergoing PPD skin testing, such as health-care workers, initial two-step testing may preclude misclassification of persons with boosted reactions as PPD converters. In those at low risk, such as this patient, a tuberculin skin test is now considered positive only if induration is at least 15 mm. Thus, this hospital volunteer would pose little risk to the hospital population since her 10-mm reaction falls within the guidelines of a negative test. She does not require diagnostic evaluation at this time, and isoniazid therapy is not indicated.

Ref: Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 961-966.

Item 151**ANSWER: B**

Most bleeding in Meckel's diverticulum is secondary to heterotrophic gastric mucosa, causing acid-induced ileal ulceration. *Helicobacter pylori* has not been shown to be an etiologic agent. Intussusception is fairly common in patients with Meckel's diverticulum but is not a frequent cause of bleeding. Arteriovenous malformation is not a major complication of Meckel's diverticulum.

Ref: Yahchouchy EK, Marano AF, Etienne JF, et al: Meckel's diverticulum. *J Am Coll Surg* 2001;192(5):658-662.

Item 152**ANSWER: B**

More than 50% of suicides are associated with a major depressive episode and 25% are associated with a substance abuse disorder. Suicide rates increase with age and are higher among men. Increased suicide rates also occur in patients with significant medical illnesses. Because discussing suicidal ideation may relieve the patient's anxiety, the physician should directly ask depressed patients about any suicidal thoughts. There are no known reliable tools for assessing suicide risk, so the assessment is subjective. The initial management of suicidal ideation should establish safety, often by hospitalization. The suicide prevention contract is of unproven clinical and legal usefulness. Antidepressant medication has not been shown to reduce suicide rates, especially on a short-term basis.

Ref: Stovall J, Domino FJ: Approaching the suicidal patient. *Am Fam Physician* 2003;68(9):1814-1818.

Item 153

ANSWER: D

Orthostatic proteinuria accounts for up to 60% of all cases of asymptomatic proteinuria reported in children, with an even higher incidence in adolescents.

Ref: Loghman-Adham M: Evaluating proteinuria in children. *Am Fam Physician* 1998;58(5):1145-1152. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 1751-1757.

Item 154

ANSWER: A

At this time in the patient's pregnancy, a gestational sac should be visible on ultrasonography. An empty uterus presents the highest risk (14%) for ectopic pregnancy, while nonspecific fluid and echogenic material are associated with a 5% and 4% risk, respectively. An abnormal or normal sac is associated with no risk, with the rare exception of multiple pregnancies with one being heterotopic.

Ref: Dart R: First-trimester pregnancies: A practical approach to abdominal pain and vaginal bleeding in early pregnancy. *Emerg Med Pract* 2003;5(11):1-20.

Item 155

ANSWER: A

Several clinical trials suggest that 7-day regimens of erythromycin or amoxicillin, and single-dose regimens of azithromycin, are effective for treating chlamydial infections during pregnancy. Doxycycline and levofloxacin are contraindicated during pregnancy due to potential ill effects on the fetus, and metronidazole is not effective for the treatment of chlamydial infections.

Ref: Peipert JF: Genital chlamydial infections. *N Engl J Med* 2003;349(25):2424-2430.

Item 156

ANSWER: C

The use of automated external defibrillators (AEDs) by lay persons, trained and otherwise, has been quite successful, with up to 40% of those treated recovering full neurologic and functional capacity. At present, 45 states have passed Good Samaritan laws covering the use of AEDs by well-intentioned lay persons. There are initiatives for widespread placement of AEDs, to include commercial airlines and other public facilities. Implantable cardioverter defibrillators (ICDs) are useful in known at-risk patients, but the use of AEDs is for the population at large.

Ref: Marengo JP, Wang PJ, Link MS, et al: Improving survival from sudden cardiac arrest: The role of the automated external defibrillator. *JAMA* 2001;285(9):1193-1200. 2) Hallstrom AP, Ornato JP, Wesifeldt M, et al: Public-access defibrillation and survival after out-of-hospital cardiac arrest. The Public Access Defibrillation Trial Investigators. *N Engl J Med* 2004;351(7):637-646.

Item 157**ANSWER: B**

All of the options listed can be assessed by ultrasonography. Crown-rump length is a very accurate parameter in the first trimester, but the biparietal diameter is the most accurate parameter during the second trimester. Both have a 95% confidence level of being within 5–10 days of the actual gestational age when used at the proper time.

Ref: Cunningham FG, Gant NF, Leveno KJ, et al: *Williams Obstetrics*, ed 21. McGraw-Hill, 2001, p 753.

Item 158**ANSWER: E**

Cytomegalovirus (CMV) is the most common congenital infection and occurs in up to 2.2% of newborns. It is the leading cause of congenital hearing loss. The virus is transmitted by contact with infected blood, urine, or saliva, or by sexual contact. Risk factors for CMV include low socioeconomic status, birth outside North America, first pregnancy prior to age 15, a history of cervical dysplasia, and a history of sexually transmitted diseases. Infection can be primary or a reactivation of a previous infection. While the greatest risk of infection is during the third trimester, those occurring in the first trimester are the most dangerous to the fetus.

Ref: Choby BA: *Pregnancy Care*. AAFP Self-Assessment monograph series, 2003, no 292, pp 40-43. 2) Rudolph CD, Rudolph AM (eds): *Rudolph's Pediatrics*, ed 21. McGraw-Hill, 2003, pp 1031-1035.

Item 159**ANSWER: D**

For many women, labor will be preceded by several hours, or even days, by “bloody show.” So-called “false labor,” or Braxton Hicks contractions, consists of weak, irregular, regional contractions that usually occur for weeks before the onset of actual labor and abate with time, analgesia, and sedation. Spontaneous chorioamniotic membrane rupture precedes the onset of labor in about 10% of pregnancies, and amniotic fluid leaks through the cervix and out the vagina.

The second stage of labor is defined as the period from complete cervical dilation to complete delivery of the baby. When the cervix is completely dilated, the patient usually experiences the urge to push with contractions. The third stage of labor begins with the delivery of the baby and ends with the delivery of the placenta.

Ref: Scott JR, Gibbs RS, Karlan BY, et al (eds): *Danforth's Obstetrics and Gynecology*, ed 9. Lippincott Williams & Wilkins, 2003, pp 35-46.

Item 160**ANSWER: B**

The patient has symptoms, signs, and laboratory findings consistent with a diagnosis of Waldenström's macroglobulinemia. This illness is due to an uncontrolled proliferation of lymphocytes and plasma cells, which produce IgM proteins with 6-light chains. The average age at the time of diagnosis is 65 years. Weakness, fatigue, weight loss, bleeding, and recurrent infections are common presenting symptoms. Physical findings include pallor, hepatosplenomegaly, and lymphadenopathy. Typical laboratory findings include moderate anemia and monoclonal IgM peaks on serum electrophoresis. Bence-Jones protein is seen in 80% of cases, but is typically absent in monoclonal gammopathy of undetermined significance. Unlike in multiple myeloma, lytic bone lesions are not seen, and marrow biopsy reveals mostly lymphocytes. Sarcoidosis usually presents with hilar lymphadenopathy and a polyclonal gammopathy. Non-Hodgkin's lymphoma presents with similar symptoms, lymphadenopathy, and hepatosplenomegaly, but generally lacks a monoclonal gammopathy and Bence-Jones proteinemia, and has distinctive malignant lymphocytes on bone marrow biopsy.

Ref: Goldman L, Ausiello D (eds): *Cecil Textbook of Medicine*, ed 22. Saunders, 2004, pp 1066-1068, 1192.

Item 161**ANSWER: D**

While the exact etiology of nausea and vomiting in pregnancy remains unclear, there are few data to support the theory that psychological factors play a role. Although nausea is usually a self-limited condition, other causes must be ruled out. Secondary causes are more likely to be present if the onset of symptoms occurs after 9 weeks gestation. Several pharmacologic treatments are proven safe and are superior to placebo in relieving symptoms and preventing hospitalization. Metoclopramide is more effective than a placebo and has not been associated with an increased risk of adverse effects on the fetus.

Ref: Quinlan JD, Hill DA: Nausea and vomiting of pregnancy. *Am Fam Physician* 2003;68(1):121-128.

Item 162**ANSWER: C**

The most common infection transmitted person-to-person in wrestlers is herpes gladiatorum caused by the herpes simplex virus. Molluscum contagiosum causes keratinized plugs. Human papillomavirus causes warts. Tinea corporis is ringworm, which is manifested by round to oval raised areas with central clearing. Mat burn is an abrasion.

Ref: Buescher ES: Infections associated with pediatric sport participation. *Pediatr Clin North Am* 2002;49(4):743-751.

Item 163

ANSWER: C

It is well established that atrial fibrillation is associated with a heightened risk of stroke. Anticoagulant therapy is not without risk, and for this reason a risk-scoring system has been developed to aid the clinician in deciding on therapy. Points are assigned using the acronym "CHADS₂". One point each is given for a history of Congestive heart failure, Hypertension (both treated and untreated), Age greater than 75, and Diabetes mellitus, and 2 points for a previous history of Stroke or TIA.

Ref: Gage BF, Waterman AD, Shannon W, et al: Validation of clinical classification schemes for predicting stroke: Results from the National Registry of Atrial Fibrillation. *JAMA* 2001;285(22):2864-2870.

Item 164

ANSWER: B

Treatment should be initiated when a PPD causes induration ≥ 5 mm in a patient with HIV infection.

Ref: Mandell GL, Bennett JE, Dolin R (eds): *Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases*, ed 5. Churchill Livingstone, 2000, p 2594.

Item 165

ANSWER: A

Symptoms of congestive heart failure in infants are often related to feedings. Only small feedings may be tolerated, and dyspnea may develop with feedings. Profuse perspiration with feedings is characteristic, and is related to adrenergic drive. Older children may have symptoms more similar to adults, but the infant's greatest exertion is related to feeding.

Fever and nasal congestion are more suggestive of infectious problems. Noisy respiration or wheezing does not distinguish between congestive heart failure, asthma, and infectious processes. A staccato cough is more suggestive of an infectious process, including pertussis.

Ref: Strange GR, Ahrens WR, Lelyveld S, et al (eds): *Pediatric Emergency Medicine: A Comprehensive Study Guide*, ed 2. American College of Emergency Physicians, 2002, pp 216, 226, 246. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, p 1583.

Item 166

ANSWER: B

According to the American Geriatrics Society, propoxyphene is not recommended for persistent mild to moderate pain. Studies suggest that its efficacy is similar to that of aspirin or acetaminophen alone, but drug accumulation, neuroexcitatory effects, and ataxia or dizziness may add unnecessary morbidity in older patients. Other analgesic strategies are considered more appropriate for patients with persistent mild to moderate pain. Acetaminophen, hydrocodone, oxycodone, and hydromorphone are options for treating chronic pain of varying degrees of severity.

Ref: AGS Panel on Persistent Pain in Older Persons: The management of persistent pain in older persons. *J Am Geriatr Soc* 2002;50(6 supp):S205-S224.

Item 167

ANSWER: E

Informed consent to treat is considered an important ethical and legal part of caring for children and adolescents. Some situations can become confusing when trying to balance the need for treatment, a child's assent, and a parent or guardian's permission. In most states, the age of legal decision making is the chronologic age of 18, while in some it is age 21. Children under the age of majority must have proof of permission from a parent or guardian to treat for non-emergent care. This condition does not apply for emergency situations in which a delay in care could result in serious harm. Another exception to parental consent is when a child is considered emancipated under state law. This can happen with a court order or (in some states) if the child is married, is a parent, is in the military, or is living independently. Both biological parents are able to permit treatment unless a parent is explicitly denied guardianship. If a child presents with a non-emergent condition and does not have evidence of permission to be seen by a parent or guardian, permission should be sought before the physician interaction takes place.

Ref: Zawistowski CA, Frader JE: Ethical problems in pediatric critical care: Consent. *Crit Care Med* 2003;31(5 Suppl):S407-S410.

Item 168

ANSWER: D

Many patients stop taking antidepressants within the first month of therapy, often citing side effects as the reason. Fluoxetine, an SSRI, is frequently associated with gastrointestinal irritation, sexual side effects, and agitation. Sertraline is an SSRI with a similar side-effect profile. Bupropion does not have the sexual side effects of the SSRIs but can cause significant agitation. Clonazepam is a benzodiazepine and likely would not cause many of this patient's side effects, but is not appropriate as the primary treatment for major depression. The mechanism of action for venlafaxine includes both serotonin and epinephrine reuptake inhibition, and it can cause some of the same symptoms as the SSRIs. Mirtazapine, however, would help this patient sleep, usually does not cause appetite suppression, and infrequently causes sexual disturbance.

Ref: Whooley MA, Simon GE: Primary care: Managing depression in medical outpatients. *N Engl J Med* 2000;343(26):1942-1950.

Item 169

ANSWER: B

Stress fractures of the femoral neck are most commonly seen in military recruits and runners. They present with persistent groin pain, and limited hip flexion and internal rotation. Radiographs may be normal early. Iliotibial band syndrome also occurs in runners and presents with stinging pain over the lateral femoral epicondyle. Osteitis pubis occurs in distance runners and presents with pain in the anterior pelvic area and tenderness over the symphysis pubis. Pelvic inflammatory disease is associated with abdominal pain and fever.

Ref: Martin TM, Martin JS: Special issues and concerns for high school and college athletes. *Pediatr Clin North Am* 2002;49(3):533-552.

Item 170

ANSWER: B

Uterine rupture occurs in 0.2%–1.0% of women in labor after one previous low transverse cesarean section. Obviously, this can have devastating consequences for the mother and baby, so vigilance during labor is paramount. Uterine pain, cessation of contractions, vaginal bleeding, failure of labor to progress, or fetal regression may occur, but none of these are as consistent as fetal bradycardia in cases of uterine rupture during labor for VBAC patients.

Ref: Toppenberg KS, Block WA Jr: Uterine rupture: What family physicians need to know. *Am Fam Physician* 2002;66(5):823-828.

Item 171

ANSWER: D

Barrett's esophagus is an acquired intestinal metaplasia of the distal esophagus associated with longstanding gastroesophageal acid reflux, although a quarter of patients with Barrett's esophagus have no reflux symptoms. It is more common in white and Hispanic men over 50 with longstanding severe reflux symptoms, and possible risk factors include obesity and tobacco use. It is a risk factor for adenocarcinoma of the esophagus, with a rate of about one case in every 200 patients with Barrett's esophagus per year. Treatment is directed at reducing reflux, thus reducing symptoms. Neither medical nor surgical treatment has been shown to reduce the carcinoma risk. One reasonable screening suggestion is to perform esophagoduodenoscopy in all men over 50 with gastroesophageal reflux disease (GERD), but these recommendations are based only on expert opinion (level C evidence), and no outcomes-based guidelines are available.

Ref: Heidelbaugh JJ, Nostrant TT, Kim C, et al: Management of gastroesophageal reflux disease. *Am Fam Physician* 2003;68(7):1311-1318. 2) Shaluta MD, Saad R: Barrett's esophagus. *Am Fam Physician* 2004;69(9):2113-2118.

Item 172

ANSWER: B

Most breast masses in adolescent girls are benign. Fibroadenoma is the most common, accounting for approximately two-thirds of all adolescent breast masses. It is characterized by a slow growing, nontender, rubbery, well-defined mass, most commonly located in the upper, outer quadrant. Size varies, and is most commonly in the range of 2–3 cm.

Fibrocystic disease is found in older adolescents and is characterized by bilateral nodularity and cyclic tenderness. Benign breast cysts are characterized by a spongy, tender mass with symptoms exacerbated by menses. Cysts are frequently multiple, and spontaneous regression occurs in 50% of patients. Cystosarcoma phyllodes is a rare tumor with malignant potential, although most are benign. It presents as a firm, rubbery mass that may enlarge rapidly. Skin necrosis is usually associated with the tumor. Intraductal papillomas are usually benign but do have malignant potential. They are commonly subareolar and are associated with nipple discharge. These tumors are rare in the adolescent population.

Ref: Hay WH (ed): *Current Pediatric Diagnosis and Treatment*, ed 16. McGraw-Hill, 2003, pp 122-123.

Item 173

ANSWER: E

Somatoform disorder is often encountered in family practice. Studies have documented that 5% of patients meet the criteria for somatization disorder, while another 4% have borderline somatization disorder. Most of these patients are female and have a low socioeconomic status. They have a high utilization of medical services, usually reflected by a thick medical chart, and are often single parents. As a rule, physicians tend to be less satisfied with the care rendered to these patients as opposed to those without the disorder. Patients with multiple unexplained physical complaints have been described as functionally disabled, spending an average of one week per month in bed. Many of these patients seek and are ultimately granted surgical procedures, and it is not uncommon for them to have multiple procedures, especially involving the pelvic area. Often there are associated psychiatric symptoms such as anxiety, depression, suicidal threats, alcohol or drug abuse, interpersonal or occupational difficulties, and antisocial behavior. A background of a dysfunctional family unit in which one or both parents abused alcohol or drugs or were somatically preoccupied is also quite common. Unfortunately, these individuals tend to marry alcohol abusers, and thus continue the pattern of dysfunctional family life.

Treatment of somatoform disorder should be by one primary physician where an established relationship and regular visits can curtail the dramatic symptoms that many times lead to hospitalization. The family physician is in a position to monitor family dynamics and provide direction on such issues as alcoholism and child abuse. Each office visit should be accompanied by a physical examination, and the temptation to tell the patient that the problem is not physical should be avoided. Knowing the patient well helps to avoid unnecessary hospitalization, diagnostic procedures, surgery, and laboratory tests. These should be done only if clearly indicated. Psychotropic medications should be avoided except when clearly indicated, as medications reinforce the sick role, may be abused, and may be used for suicidal gestures. Following these recommendations significantly decreases the cost of care for the patient.

Ref: Rakel RE: *Textbook of Family Practice*, ed 6. WB Saunders Co, 2002, pp 1497-1498. 2) Hales RE, Yudofsky SC (ed): *Textbook of Clinical Psychiatry*, ed 4. American Psychiatric Publishing, 2003, pp 659-673.

Item 174**ANSWER: B**

There is a 30% probability of pregnancy resulting from unprotected intercourse 1 or 2 days before ovulation, 15% 3 days before, 12% the day of ovulation, and essentially 0% 1–2 days after ovulation. Knowing the time of ovulation therefore has implications not only for “natural” family planning, but also for decisions regarding postcoital contraception.

Ref: Emergency contraception OTC. *Med Lett Drugs Ther* 2004;46(1175):10.

Item 175**ANSWER: A**

Trazodone has been found useful for its sedative and hypnotic effects, and is often used in combination with another antidepressant. Benzodiazepines are not recommended for long-term use. Zaleplon is more short-acting than zolpidem and therefore would not be more effective. Amitriptyline could be used for its antidepressant and sedative effects, but its chronotropic side effects make it less preferable for someone with a disposition to cardiac arrhythmia.

Ref: Kaplan HI, Sadock BJ: *Kaplan & Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry*, ed 8. Lippincott Williams & Wilkins, 1998, pp 1098-1099. 2) Dording CM, Mischoulon D, Petersen TJ, et al: The pharmacologic management of SSRI-induced side effects: A survey of psychiatrists. *Ann Clin Psychiatry* 2002;14(3):143-147.

Item 176**ANSWER: B**

The FDA has approved more than 90% of the drugs available from Canada. Most of these drugs come from the same manufacturers as drugs in the U.S. Health Canada takes longer, on average, to approve a drug for release than does the FDA, and most drugs discontinued for safety reasons by the FDA between 1992 and 2001 had not been approved for use in Canada. Websites advertising Canadian drugs may be selling counterfeit drugs from unregulated sources.

Ref: Safety of Canadian drugs. *Med Lett Drugs Ther* 2003;45:100.

Item 177**ANSWER: A**

The diaphragm is an effective method of contraception if used correctly. A weight change of more than 15 lb, pregnancy, or pelvic surgery may necessitate refitting. If used with nonoxynol-9, a diaphragm may actually increase the risk of HIV transmission. Diaphragms are made of latex, but a wide seal rim model made of silicone is available for those who are latex sensitive. Diaphragm use is contraindicated in women with a history of toxic shock syndrome. The diaphragm should remain in place for 6–24 hours after intercourse.

Ref: Allen R: Diaphragm fitting. *Am Fam Physician* 2004;69(1):97-100.

Item 178**ANSWER: A**

Calcitonin, either intranasal or subcutaneous, provides pain relief within a few days in many patients with osteoporotic vertebral compression fractures. The remainder of the choices do not provide acute relief. Vertebroplasty/kyphoplasty procedures are generally reserved for cases in which medical management has failed.

Ref: Cassel CK, Leipzig RM, Cohen HJ, et al (eds): *Geriatric Medicine: An Evidence-Based Approach*, ed 4. Springer, 2003, pp 621-650.

Item 179**ANSWER: E**

The majority of children with failure to thrive (FTT) have no laboratory abnormalities. In a classic study of children hospitalized with FTT, only 1.4% of laboratory tests were of diagnostic significance. A practical approach is not to order any laboratory tests initially unless suggested by the history or physical examination. Screening laboratory studies can be considered in children who fail to respond to nutritional intervention.

Ref: Krugman SD, Dubowitz H: Failure to thrive. *Am Fam Physician* 2003;68(5):879-884.

Item 180**ANSWER: D**

Radiofrequency catheter ablation of bypass tracts is possible in over 90% of patients and is safer and more cost effective than surgery, with a similar success rate. Intravenous and oral digoxin can shorten the refractory period of the accessory pathway, and increase the ventricular rate, causing ventricular fibrillation. β -Blockers will not control the ventricular response during atrial fibrillation when conduction proceeds over the bypass tract.

Ref: Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 1347-1351.

Item 181**ANSWER: A**

Two doses of influenza vaccine are recommended for children under the age of 9 years unless they have been vaccinated previously. Children 3–8 years of age should receive one or two 0.5-mL doses of split-virus vaccine intramuscularly.

Ref: Couch RB: Prevention and treatment of influenza. *N Engl J Med* 2000;343(24):1778-1787.

Item 182**ANSWER: A**

In the 2001 Bethesda System, *atypical squamous cells of unknown significance (ASCUS)* was replaced by *atypical squamous cells (ASC)*. ASC is divided into *atypical squamous cells—cannot exclude HSIL (ASC-H)* and *atypical squamous cells of unknown significance (ASC-US)*. *ASCUS—favor reactive* has been downgraded to negative in the 2001 system. *Atypical glandular cells of unknown significance (AGUS)* has been replaced by *atypical glandular cells (AGC)*.

Ref: Appgar B, Zoschnick L, Wright TC: The 2001 Bethesda System Terminology. *Am Fam Physician* 2003;68(8):1992-1998.

Item 183**ANSWER: C**

The symptom complex presented is typical of cholelithiasis. Plain radiography of the abdomen may reveal radiopaque gallstones, but will not reveal radiolucent stones or biliary dilatation. Although rarely used, oral cholecystography is 98% accurate, but only when compliance is assured, the contrast agent is absorbed, and liver function is normal. Abdominal ultrasonography is considered the best study to confirm this diagnosis because of its high sensitivity and its accuracy in detecting gallstones. A barium swallow will identify some functional and structural esophageal abnormalities, but will not focus on the suspected organ in this case. The same is true of esophagogastroscopy.

Ref: Bland KI, Sarr MG (ed): *The Practice of General Surgery*. Saunders, 2002, pp 667-670.

Item 184**ANSWER: D**

Of the drugs listed, the only maternal medication that affects the infant is lithium. Breastfed infants of women taking lithium can have blood lithium concentrations that are 30%–50% of therapeutic levels.

Ref: Ressel G: AAP updates statement for transfer of drugs and other chemicals into breast milk. *Am Fam Physician* 2002;65(5):979-980.

Item 185**ANSWER: B**

This patient has several clinical features of vitamin B₁₂ deficiency. Some patients with significant vitamin B₁₂ deficiency have levels in the lower range of normal, as this patient does. Vitamin B₁₂ is a cofactor in the synthesis of both methionine and succinyl coenzyme A, and vitamin B₁₂ deficiency leads to the accumulation of methylmalonic acid and homocysteine, which are the precursors of these compounds. An elevated level of these substances is therefore more sensitive than a low vitamin B₁₂ level for vitamin B₁₂ deficiency. Homocysteine is also elevated in folic acid deficiency, however, so a methylmalonic acid level is recommended if vitamin B₁₂ deficiency is a concern and serum vitamin B₁₂ levels are 150–400 pg/mL.

A reduced haptoglobin level is useful to confirm hemolytic anemia. An elevated free erythrocyte protoporphyrin level may occur in lead poisoning or iron deficiency. An elevated angiotensin converting enzyme level is found in sarcoidosis.

Ref: Oh R, Brown DL: Vitamin B₁₂ deficiency. *Am Fam Physician* 2003;67(5):979-986, 993-994.

Item 186

ANSWER: C

Initial exercise routines for the elderly can be as short as 6 minutes in duration. Even 30 minutes per week of exercise has been shown to be beneficial. Graded exercise testing need not be done, especially if low-level exercise is planned. A target heart rate of 60%–75% of the predicted maximum should be set as a ceiling. Patients with peripheral neuropathy should not perform treadmill walking or step aerobics because of the risk of damage to their feet.

Ref: Heath JM, Stuart MR: Prescribing exercise for frail elders. *J Am Board Fam Pract* 2002;15(3):218-228.

Item 187

ANSWER: B

β-Blockers and ACE inhibitors have been found to decrease mortality late after myocardial infarction. Aspirin has been shown to decrease nonfatal myocardial infarction, nonfatal stroke, and vascular events. Nitrates, digoxin, thiazide diuretics, and calcium channel antagonists have not been found to reduce mortality after myocardial infarction.

Ref: Foody JM (ed): *Preventive Cardiology: Strategies for the Prevention and Treatment of Coronary Artery Disease*. Humana Press, 2001, pp 244-247.

Item 188

ANSWER: D

The U.S. Preventive Services Task Force recommends a routine physical examination every 3–5 years for young adults until the age of 40. Mammograms are not recommended until age 40. Lead screening is recommended for at-risk individuals between 6 months and 6 years of age. Colorectal cancer screening for average-risk individuals is recommended at age 50. Counseling on tobacco use and other substance abuse is recommended as part of all routine preventive care.

Ref: U.S. Preventive Services Task Force: *Guide to Clinical Preventive Services*, ed 3. AHRQ Publications Clearinghouse, 2002.

Item 189

ANSWER: D

Hormone replacement therapy (HRT) improves the urogenital symptoms of menopause, such as vaginal dryness and dyspareunia. However, recent research regarding HRT has not shown a benefit for reducing coronary events, slowing the progression of Alzheimer's disease, improving depression, or improving urinary incontinence.

Ref: Executive Committee of the International Position Paper on Women's Health and Menopause, Wenger NK, chair: International position paper on women's health and menopause: A comprehensive approach, ch. 13. National Heart, Lung, and Blood Institute, Office of Research on Women's Health, National Institutes of Health, and Giovanni Lorenzini Medical Science Foundation, 2002, pp 1-31. 2) Scott JR, Gibbs RS, Karlan BY, et al (eds): *Danforth's Obstetrics and Gynecology*, ed 9. Lippincott Williams & Wilkins, 2003, pp 732-736.

Item 190

ANSWER: A

Behavioral symptoms such as agitation and wandering become common as Alzheimer's disease progresses. Cholinesterase inhibitors may improve some of these symptoms. If they persist, use of a psychotropic agent may be necessary. Atypical agents can help control problematic delusions, hallucinations, severe psychomotor agitation, and combativeness. Typical agents help control these same problems, but are used more as second-line therapy in those who do not respond to atypical agents. Mood-stabilizing drugs can help control these symptoms as well, and may also be useful alternatives to antipsychotic agents for controlling severe agitated, repetitive, and combative behaviors. Benzodiazepines are used to manage insomnia, anxiety and agitation. Some behaviors, such as wandering and pacing, are not amenable to drug therapy.

Ref: Cummings JL, Frank JC, Cherry D, et al: Guidelines for managing Alzheimer's disease: Part II. Treatment. *Am Fam Physician* 2002;65(12):2525-2534.

Item 191

ANSWER: E

This child is entering puberty. In the 6- to 12-month period before menarche, girls often develop a physiologic vaginal discharge secondary to the increase in circulating estrogens. The gray-white discharge is non-irritating. When physiologic discharge is examined with the microscope, sheets of vaginal epithelial cells are seen. The only treatment necessary is reassurance of both parents and child that this is a normal process that will subside with time. The other conditions listed are pathologic and have other associated symptoms and findings not seen in this case. Pinworms normally cause perianal and vulvar pruritus and irritation. The findings in sexual abuse range from an inflamed vulvovaginal area, to evidence of sexually transmitted diseases, to evidence of local trauma. Trichomoniasis would cause vulvovaginal irritation and microscopic examination of the discharge would show *Trichomonas* organisms. A vaginal foreign body would usually present with a foul and/or bloody vaginal discharge.

Ref: Stenchever MA, Droegemueller W, Herbst AL, et al: *Comprehensive Gynecology*, ed 4. Mosby, 2001, pp 274-277. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 663-667.

Item 192**ANSWER: A**

Hypertrophic pyloric stenosis is the most likely diagnosis in this case. If it is allowed to progress untreated, there may be signs of malnutrition, constipation, oliguria, and profound hypochloremic metabolic alkalosis. The latter is a characteristic sign of pyloric obstruction. As the child vomits chloride and hydrogen-rich gastric contents, hypochloremic alkalosis sets in. Pneumonia is not a common problem with pyloric stenosis, as it can be with congenital tracheoesophageal fistulae for example. After feeding, there may be a visible peristaltic wave that progresses across the abdomen. However, since the point of obstruction is proximal to the small and large intestines and affected infants lose weight, the abdomen is usually flat rather than distended, especially in the malnourished infant. Currant jelly stool is a common clinical manifestation of intussusception. Mild jaundice with elevated indirect bilirubin is seen in about 5% of infants with pyloric stenosis, but is not a characteristic sign.

Ref: Bland KI, Sarr MG (ed): *The Practice of General Surgery*. Saunders, 2002, pp 930-933. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 1219-1220, 1229-1231, 1242-1243.

Item 193**ANSWER: C**

Oral contraceptives increase the risk of venous thromboembolic phenomena. The combination of oral contraceptives and smoking substantially increases the risk of cardiovascular disease. Caution should be exercised in prescribing oral contraceptives for women older than 35 years of age who smoke. In general, oral contraceptive use is considered absolutely contraindicated in women older than 35 who are heavy smokers. Women who smoke fewer than 15 cigarettes a day and patients with mildly elevated blood pressure and elevated lipid levels are not at increased risk for cardiovascular disease when oral contraceptives are used.

Ref: Seibert C, Barbouche E, Fagan J, et al: Prescribing oral contraceptives for women older than 35 years of age. *Ann Intern Med* 2003;138:54-64.

Item 194**ANSWER: A**

All of these viruses can cause an erythematous exanthem; however, this description is classic for fifth disease, or erythema infectiosum. It was the fifth viral exanthem to be identified after measles, scarlet fever, rubella, and Filatov-Dukes disease (atypical scarlet fever). Roseola infantum is known as sixth disease.

Erythema infectiosum is caused by parvovirus B19. It presents with the typical viral prodrome, along with symptoms of mild URI. The hallmark rash has three stages. The first is a facial flushing, described as a “slapped cheek” appearance. The exanthem can spread concurrently to the trunk and proximal extremities as a diffuse macular erythematous rash. Central clearing of this rash creates a lacy, reticulated appearance, as seen in the photo. This rash tends to be on the extensor surfaces and spares the palms and soles. It resolves over 1–3 weeks but can recur with heat, stress, and exposure to sunlight.

Ref: Pickering LK (ed): *2003 Red Book: Report of the Committee on Infectious Diseases*, ed 26. American Academy of Pediatrics, 2003, pp 459-460. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, p 1049.

Item 195

ANSWER: D

Funduscopy evaluation can provide valuable clues to systemic illness. This classic picture of a cholesterol embolus (Hollenhorst plaque) is characteristic of atherosclerotic vascular disease.

Nonproliferative diabetic retinopathy typically exhibits scattered “dot and blot” retinal hemorrhages and exudates. Infective endocarditis due to intravenous drug abuse may result in embolization to the retina, which is manifested as discrete, small, white-centered hemorrhages (Roth’s spots). Waldenström’s macroglobulinemia may cause retinal hemorrhages or exudates, and venous congestion with vascular segmentation (“sausage” formation) as a consequence of increased viscosity.

Ref: Vaughan D, Asbury T, Riordan-Eva P: *General Ophthalmology*, ed 15. Appleton & Lange, 1999, pp 281, 290. 2) Goldman L, Ausiello D (eds): *Cecil Textbook of Medicine*, ed 22. Saunders, 2004, pp 1192, 2418-2419.

Item 196

ANSWER: D

The EKG shown represents torsades de pointes. This special form of ventricular tachyarrhythmia is often regarded as an intermediary between ventricular tachycardia and ventricular fibrillation. Morphologically it is characterized by wide QRS complexes with apices that are sometimes positive and sometimes negative. It is generally restricted to those polymorphous tachycardias associated with QT prolongation.

It is caused by anything that produces or is associated with a prolonged QT interval, including drugs (quinidine, procainamide, disopyramide, phenothiazines), electrolyte disturbances, insecticide poisoning, subarachnoid hemorrhage, and congenital QT prolongation. Its great clinical importance lies in the fact that the usual anti-arrhythmic drugs are not only useless but contraindicated, because they can make matters worse.

Ventricular flutter is the term used by some authorities to describe a rapid ventricular tachycardia producing a regular zigzag on EKG, without clearly formed QRS complexes. Ventricular tachycardia consists of at least three consecutive ectopic QRS complexes recurring at a rapid rate. They are usually regular.

Ventricular fibrillation is characterized by the complete absence of properly formed ventricular complexes; the baseline wavers unevenly with no clear-cut QRS deflections.

Ref: Braunwald E, Zipes DP, Libby P (eds): *Heart Disease: A Textbook of Cardiovascular Medicine*, ed 6. WB Saunders Co, 2001, pp 867-868.

Item 197

ANSWER: C

These lesions are very typical of herpes zoster, with small, grouped vesicles on an erythematous base. Several crusted lesions are present, indicating that the condition has progressed in a fashion typical of the disorder. The hallmark “shingle” distribution of a cutaneous dermatome of the thorax is also seen. Zoster in children rarely progresses to a chronically painful condition. Although this condition is often associated with immune suppression, it is also seen in normal children. Antiviral medication such as acyclovir can help to reduce the extent of the disease.

Ref: Rudolph CD, Rudolph AM (eds): *Rudolph’s Pediatrics*, ed 21. McGraw-Hill, 2003, pp 1175-1183.

Item 198

ANSWER: C

This patient has a history, physical findings, and radiographic views typical of a rotator cuff tear. The film shows the humeral head located superiorly in the glenoid fossa, almost touching the acromion, with narrowing of the acromiohumeral interval.

Ref: Weinstein SL, Buckwalter JA (eds): *Turek’s Orthopaedics*, ed 5. JB Lippincott Co, 1994, pp 382-388. 2) Steinberg GG, Akins CM, Baran DT (eds): *Orthopaedics in Primary Care*, ed 3. Lippincott Williams & Wilkins, 1999, p 47. 3) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison’s Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 2035, 2064-2065.

Item 199

ANSWER: C

The figure shows a very localized erythematous rash that appears to be the healing stage of an allergic dermatitis. The location is very atypical of eczema, and the chronicity would rule out herpes zoster. The lesion does not have any typical features of tinea corporis, which tends to be annular or macular with scaling. Squamous cell cancer is exceedingly rare in children and would not be suggested by a rash that completely disappears only to reappear again. The history and appearance are most suggestive of nickel sensitivity, likely associated with a metal clasp on the child’s pants (i.e., the rivet on a pair of jeans). Placing athletic tape over this clasp usually results in resolution of the condition.

Ref: Rudolph CD, Rudolph AM (eds): *Rudolph’s Pediatrics*, ed 21. McGraw-Hill, 2003, pp 1175-1183.

Item 200

ANSWER: B

The audiogram shows bilateral high-frequency hearing loss with the characteristic “notch” at 4000 Hz. It is highly suggestive of noise-induced injury, as could occur in a noisy machine shop. Meniere’s disease of the left ear or traumatic perforation of the right ear would cause unilateral hearing loss in the affected ear. Presbycusis produces high-frequency loss (without a “notch”) that is greatest at 8000 Hz. Recurrent otitis media may cause middle ear damage and conductive hearing loss which is more prominent at lower frequencies.

Ref: Cummings CW, Frederickson JM, Harker LA, et al (eds): *Otolaryngology: Head and Neck Surgery*, ed 3. Mosby, 1998, pp 3152-3160. 2) Goldman L, Ausiello D (eds): *Cecil Textbook of Medicine*, ed 22. Saunders, 2004, pp 2436-2440.

BOOK II

PATIENT A

Options 1–10

ANSWERS: 1) F; 2) T; 3) T; 4) F; 5) T; 6) T; 7) F; 8) F; 9) T; 10) F

Once pregnancy is ruled out, the most common cause of vaginal bleeding in adolescents and adults is dysfunctional uterine bleeding. Patients with severe bleeding, orthostatic hypotension, and anemia require hospitalization. Minimal laboratory evaluation should include a CBC, serum β -hCG, bleeding time, platelet count, and typing and crossmatching for 2 units of packed RBCs. Dysfunctional uterine bleeding is caused by inadequate estrogen support for the proliferating endometrium, and the initial treatment of severe bleeding in an unstable patient is high-dose intravenous estrogen. The bleeding usually stops after 4–24 hours. If it continues, uterine curettage is indicated. After the bleeding stops, shedding of the endometrium should be induced with oral medroxyprogesterone acetate for 10 days. When the medroxyprogesterone is stopped, the patient should be warned to expect a heavier than usual menstrual period.

Ref: Speroff L, Glas RH, Kase NG: *Clinical Gynecologic Endocrinology and Infertility*, ed 6. Lippincott Williams & Wilkins, 1999, pp 581-585. 2) Goldman L, Ausiello D (eds): *Cecil Textbook of Medicine*, ed 22. Saunders, 2004, p 1501.

PATIENT B

Options 11–18

ANSWERS: 11) T; 12) F; 13) T; 14) F; 15) F; 16) F; 17) T; 18) F

The patient described clearly meets the criteria for the diagnosis of major depression. It is imperative to specifically inquire about any suicidal ideation or plans. A workup to exclude underlying diseases such as malignancies should be done only if this possibility is suggested by the history, physical examination, or screening tests. While many medications can cause or exacerbate depression, thiazides and HMG Co-A reductase inhibitors are unlikely causes. Alcohol use may cause early morning awakening. Once a patient has had two episodes of major depression, the risk of recurrence is so high that lifelong treatment should be considered. Cost-effective psychiatric interventions include short-term cognitive behavioral or interpersonal therapy, but not long-term anolytic treatment.

Ref: Rakel RE, Bope ET (eds): *Conn's Current Therapy 2004*. Saunders, 2004, pp 1161-1166.

PATIENT C

Options 19–27

ANSWERS: 19) T; 20) F; 21) F; 22) T; 23) T; 24) F; 25) T; 26) F; 27) F

Although subacute thyroiditis is usually painful, it may present as painless thyrotoxicosis. This condition may occur in the postpartum period. The thyrotoxicosis is transient and usually resolves spontaneously in 1–3 months. Graves' disease is more common in young females. Multinodular goiters can cause thyrotoxicosis, but are less common than Graves' disease.

TSH and free thyroxine (T_4) levels are the initial tests recommended for suspected hyperthyroidism. Free triiodothyronine (T_3) measurement is indicated only if the free thyroxine level is normal. Antinuclear antibody (or antithyroglobulin antibody) levels could be positive in some autoimmune thyroid disorders, but they are not necessary in this case.

Propranolol is useful for controlling the symptoms related to thyrotoxicosis. If the thyrotoxicosis is due to subacute thyroiditis, it will spontaneously resolve and neither surgery nor radioactive iodine would be indicated at this time.

Ref: Tierney LM Jr, McPhee SJ, Papadakis MA (eds): *Current Medical Diagnosis & Treatment*, ed 38. Appleton & Lange, 1999, pp 1074-1080. 2) Weetman AP: Graves' disease. *N Engl J Med* 2000;343(17):1236-1248. 3) Goldman L, Ausiello D (eds): *Cecil Textbook of Medicine*, ed 22. Saunders, 2004, pp 1396-1407.

PATIENT D

Options 28–39

ANSWERS: 28) T; 29) T; 30) F; 31) T; 32) F; 33) T; 34) T; 35) T; 36) F; 37) F; 38) T; 39) F

Post-term pregnancy, by definition, is a gestation of 42 weeks or more and represents one of the most common high-risk problems in obstetrics. The accurate determination of the time of conception is critical in the diagnosis of post-term pregnancy. Ultrasonography during the first and second trimesters is reliable in dating a pregnancy, but third-trimester ultrasonography is unreliable because there is a wide range of normal findings. Uterine size consistent with dates throughout the first trimester is also a useful clinical sign.

The post-term pregnancy poses a threat to the fetus due to placental insufficiency, meconium aspiration, macrosomia, and oligohydramnios, but not polyhydramnios. Post-term pregnancy may be managed by induction of labor, especially if the cervix is favorable, or by monitoring the pregnancy carefully using fetal heart rate monitoring, repeat ultrasonography, and biophysical profiles. Routine follow-up might miss signs of placental insufficiency; cesarean section in the absence of labor is neither advisable nor indicated.

Ref: Cunningham FG, Gant NF, Leveno KJ, et al: *Williams Obstetrics*, ed 21. McGraw-Hill, 2001, pp 228-229, 732-741.

PATIENT E

Options 40–52

ANSWERS: 40) T; 41) T; 42) F; 43) F; 44) T; 45) T; 46) T; 47) T; 48) T; 49) F; 50) F; 51) T; 52) T

This patient presents with upper abdominal pain and tenderness. The differential diagnosis primarily includes peptic ulcer disease, gastritis/duodenitis, acute cholecystitis, hepatitis, pancreatitis, small bowel obstruction, mesenteric ischemia, renal colic, and myocardial infarction. In this case, the elevated amylase and lipase are most consistent with a diagnosis of acute pancreatitis. The most common etiologies include gallstones and alcohol use. Severe hypertriglyceridemia is associated with pancreatitis. A triglyceride level and right upper quadrant ultrasonography on admission are generally advised. Penetrating peptic ulcer is a rare cause of pancreatitis, but the presence of antibody to *Helicobacter pylori* is common so it is not particularly useful as an initial diagnostic study for pancreatitis. There is a probable association of acetaminophen use with pancreatitis, but checking an acetaminophen level is not generally indicated.

The Ranson criteria have been developed to help predict the degree of morbidity and mortality associated with acute pancreatitis. This is primarily based on laboratory values obtained on admission and within 48 hours of admission. Negative prognostic factors on admission include age >55, WBCs >16,000/mm³, glucose >200 mg/dL, LDH >400 U/L, and AST (SGOT) >250 IU/L. Negative prognostic factors within 48 hours of admission include a fall in hematocrit by >10%, fluid deficit >4000 mL, calcium <8.0 mg/dL, pO₂ <60 mm Hg, albumin <3.2 g/dL, and an increase in BUN of >5 mg/L. A CT scan of the abdomen is not included in the Ranson criteria. However, it can provide valuable information about the severity and prognosis of the illness by demonstrating the presence or absence of a pancreatic abscess or pancreatic necrosis.

Conventional measures for treating pancreatitis include avoiding oral intake, analgesics for pain, and intravenous fluids to maintain intravascular volume. There is no evidence that H₂ blockers such as ranitidine have a beneficial effect on outcome. Antibiotics may be beneficial in severe pancreatitis. Morphine is an acceptable analgesic in patients with biliary and pancreatic disease, and it has not been shown to cause spasm of the sphincter of Oddi.

Ref: Spiegel B: Meperidine or morphine in acute pancreatitis? *Am Fam Physician* 2001;64(2):219-220. 2) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 1896-1899.

PATIENT F

Options 53–60

ANSWERS: 53) T; 54) F; 55) T; 56) F; 57) T; 58) T; 59) T; 60) F

High-risk populations for lead poisoning include residents in a community with a high prevalence of lead levels; residents in or frequent visitors to a home built before 1950 that has dilapidated paint or has recently undergone or is undergoing renovation or remodeling; close contacts of people with elevated lead levels; residents near a lead industry or heavy traffic; those using lead-based pottery; those who use traditional remedies containing lead; and those living with someone whose hobby or job involves lead exposure. High consumption of fish is a primary cause of mercury exposure in children, but has not been linked to high blood lead levels. Secondary prevention of lead poisoning includes education, high-efficiency particulate air vacuums, interior dust abatement, soil abatement, and residential paint hazard remediation. Dry abrasive blasting and the use of methylene blue or propane torches can transiently raise blood lead levels, and therefore are not recommended.

Ref: Ellis MR, Kane KY: Lightening the lead load in children. *Am Fam Physician* 2000;62(3):545-554, 559-560. 2) Goldman LR, Shannon MW: Technical report: Mercury in the technical environment. *Pediatrics* 2001;108(1):197-205.

PATIENT G

Options 61–72

ANSWERS: 61) T; 62) F; 63) T; 64) T; 65) F; 66) F; 67) T; 68) T; 69) T; 70) F; 71) F; 72) T

Hepatitis C is the most common cause of chronic liver disease in the U.S. Significant risk factors for hepatitis C include injection drug use, long-term hemodialysis, blood transfusions prior to July of 1992, and treatment with clotting factors before 1987. The lifetime risk of sexual transmission of hepatitis C is <1% for a monogamous couple. Routine household exposure to persons with hepatitis C is also not a significant risk factor, although sharing of personal products such as razors or toothbrushes should be avoided because of possible blood contamination.

Most persons with a positive anti-HCV antibody test should be tested for an HCV RNA viral load level. Cost-effective indications for referral include a positive viral load and abnormal ALT (SGPT) levels. A cost-effective workup prior to referral would include viral load measurement, HCV genotyping, and screening for hepatitis B. Genotyping is useful since genotypes 2 and 3 have a better prognosis than genotype 1, with respective cure rates of 70%–80% for types 2 and 3 and 40%–50% for type 1. With such high cure rates, many specialists do not require liver biopsy for types 2 and 3. A ceruloplasmin level, which is a test for Wilson's disease, is unlikely to be helpful in a patient who is in her forties and asymptomatic. Wilson's disease usually presents in adolescence or young adulthood with liver disease and/or neuropsychiatric illness. An abdominal CT scan is unlikely to add further clinical information or change initial management.

The risk of contracting HCV from a blood transfusion today is between 0.01% and 0.001% per unit transfused. Consumption of greater than one drink per day is associated with a significantly higher risk of progression of liver disease, and patients should be counseled to abstain from or limit alcohol intake.

Ref: Ward RP, Kugelmas M, Libsch KD: Management of hepatitis C: Evaluating suitability for drug therapy. *Am Fam Physician* 2004;69(6):1429-1438. 2) Rakel RE, Bope ET (eds): *Conn's Current Therapy 2004*. Saunders, 2004, pp 552-553.

PATIENT H

Options 73–80

ANSWERS: 73) F; 74) T; 75) T; 76) F; 77) T; 78) T; 79) T; 80) F

Primary restless legs syndrome (RLS) is a common neurologic movement disorder that may be present to some degree in 2%–15% of the population. Minimal clinical criteria required for its diagnosis are: 1) a compelling urge to move the limbs, usually associated with paresthesias/dysesthesias; 2) motor restlessness, evidenced by activities such as floor pacing, tossing or turning in bed, or rubbing the legs; 3) symptoms that are worse or exclusively present at rest, with variable and temporary relief with activity; and 4) symptoms that are worse in the evening and at night. Unlike nocturnal leg cramps, RLS is not associated with palpable, focal, involuntary muscle contractions, nor is it usually unilateral. The neurologic examination is usually normal in patients with RLS. Laboratory tests used to identify possible secondary causes for RLS include serum ferritin levels and tests to rule out diabetes and uremia. A sleep study is not routinely indicated in the workup because RLS is diagnosed on the basis of the history and clinical findings.

Ref: National Heart, Lung, and Blood Institute Working Group on Restless Legs Syndrome: Restless legs syndrome: Detection and management in primary care. *Am Fam Physician* 2000;62(1):108-114.

PATIENT I

Options 81–90

ANSWERS: 81) T; 82) F; 83) F; 84) F; 85) F; 86) T; 87) T; 88) F; 89) F; 90) F

In the initial evaluation of a neck mass, a posteroanterior chest film is the most economical and easiest method to ascertain whether there is any mediastinal lymph node involvement. Tissue diagnosis from a lymph node biopsy is necessary before performing any of the other tests.

Once the tissue diagnosis of Hodgkin's disease has been made, it is critical to stage the disease. Blood tests such as a CBC and chemistry panels should be ordered. Methods to assess the extent of adenopathy in the chest and abdomen include CT, ultrasonography, MRI, gallium scanning, and PET. Although not as commonly available, lymphangiography is an extremely accurate way of assessing lower abdominal nodes.

Staging laparoscopy is no longer used to evaluate the extent of disease. The incidence of metastasis to the brain and central nervous system is very low with Hodgkins disease; therefore, neither a brain scan nor a lumbar puncture is indicated during the initial evaluation of the disease.

Ref: Goldman L, Ausiello D (eds): *Cecil Textbook of Medicine*, ed 22. Saunders, 2004, pp 990-992, 1166-1173.

PATIENT J

Options 91–105

ANSWERS: 91) F; 92) T; 93) F; 94) F; 95) F; 96) T; 97) F; 98) T; 99) F; 100) F; 101) F; 102) T; 103) F; 104) T; 105) F

The most important risk factor for perioperative stroke is previous stroke. Other risk factors include advanced age, diabetes, renal insufficiency, tobacco abuse, coronary artery disease, congestive heart failure, and cardiovascular operations. Of the choices given, hypotension and embolic stroke due to atrial fibrillation are most likely. Fat embolism is an uncommon complication of long bone fractures. Postoperative hemorrhagic strokes are most commonly related to anticoagulant use in the postoperative period. Septic embolization is a concern in the setting of valvular heart disease.

Most neurologic findings in strokes are defined relative to the affected side of the brain. Furthermore, many findings in a stroke located in the distribution of the middle cerebral artery (MCA) are manifested on the contralateral side of the body relative to the affected brain tissue. The territory of the MCA includes the major motor and sensory areas of the cortex and, in the dominant hemisphere, the motor and sensory areas for language. In this case, with the left MCA distribution involved, there would be a right-sided hemiplegia and hemiparesis. In a right-handed patient, the left cortex is most likely the dominant hemisphere and speech should be impaired. Manifestations may include a Broca's expressive aphasia with impaired fluency, naming, and writing, but relatively preserved comprehension. Sympathetic paralysis of the eye (Horner's syndrome) originates along a long track of neural fibers running from the lateral hypothalamus, brainstem, and cervical spinal cord on the ipsilateral side. The distribution of this stroke should not involve these structures, and if it did, the findings would be on the ipsilateral side. Visual field defects, such as quadrantanopsia or homonymous hemianopsia, are common in strokes of the MCA distribution. Bilateral blindness is found in patients who suffer a stroke resulting from pathology in the basilar artery distribution, rather than MCA strokes.

Since the patient was not on warfarin, there is no reason to obtain a prothrombin time. Lumbar puncture is no longer widely used to diagnose routine stroke because CT or MRI studies detect cerebral hemorrhage, and anticoagulation begun within 6 hours after a lumbar puncture can cause a spinal epidural hematoma. Since intraoperative myocardial infarctions and atrial fibrillation are relatively common causes of postoperative strokes, an EKG would be pertinent. Of the brain studies listed, MRI is currently considered the one best study to define the type, extent, and sometimes the etiology, of the stroke. As there is no history of seizures in this patient, an EEG would be of little value. A noncontrast head CT would also be an appropriate initial test to distinguish between ischemic and hemorrhagic stroke.

Ref: Kelley RE: Stroke in the postoperative period. *Med Clin North Am* 2001;85(5):1263-1276. 2) Blacker DJ: In-hospital stroke. *Lancet Neurol* 2003;2(12):741-746. 3) Goldman L, Ausiello D (eds): *Cecil Textbook of Medicine*, ed 22. Saunders, 2004, pp 2280-2287.

PATIENT K

Options 106–117

ANSWERS: 106) T; 107) T; 108) F; 109) F; 110) F; 111) T; 112) F; 113) T; 114) T; 115) F; 116) F; 117) F

Grading of burns using the depth of burn penetration is replacing first, second, and third degree classification. This patient has superficial burns, indicated by erythema and by dry macules that are painful and blanch with pressure. He also has superficial partial-thickness burns that have blisters, are moist and weeping, and that blanch with pressure. They are painful to air contact and temperature. He does not appear to have deep partial-thickness burns, which consist of easily unroofed wet blisters, or dry waxy blisters that do not blanch and are painful only to pressure. Full-thickness burns are white, leathery grey, or charred and black. These do not blanch, and sensation is only to deep pressure. This patient's tachycardia and tachypnea are most likely secondary to pain and anxiety, as pulmonary insufficiency is usually not seen with splash burn injuries. Coughing, wheezing, dyspnea, facial burns, sooty mucus, and laryngeal edema would indicate pulmonary damage.

As a consequence, this patient does not need hyperbaric oxygen therapy. Burns should be cooled with cool compresses and washed with mild soap. Disinfectants such as chlorhexidine or povidone-iodine should not be used, as they can inhibit the healing process. Topical infection prophylaxis should be used in all but superficial burns. Silver sulfadiazine may be used but should not be used on the face, or in pregnant or nursing women, or infants younger than 2 months of age. There is also a potential for cross-reaction in patients with sulfonamide hypersensitivity. Bacitracin may also be used. Sterile dressing should be applied.

Adult patients with significant burns over less than 10% of the body surface area need not be admitted to the hospital. The patient should be reexamined in 24 hours to restage the burn and check progress. With superficial partial-thickness burns, there is a minimal chance of scarring; however, initial assessment of the burn may prove to be inaccurate and deeper burns may not be detected until a follow-up examination. Hypertrophic scarring is likely if the burn takes over 3 weeks for epithelialization to occur. Full-thickness burns that require skin grafts are unlikely in this patient.

Ref: Morgan ED, Bledsoe SC, Barker J: Ambulatory management of burns. *Am Fam Physician* 2000;62(9):2015-2026.

PATIENT L

Options 118–124

ANSWERS: 118) F; 119) F; 120) T; 121) T; 122) T; 123) F; 124) T

The cause of Kawasaki's syndrome is currently unknown, but it is an acute febrile vasculitis that occurs most often in children younger than 5 years of age. Clinical features include a prolonged high fever of 5 days' duration or more; redness of the palms and soles; edema of the hands and feet; conjunctival injection without exudate; mucous membrane changes such as red, fissured lips, strawberry tongue, or injected pharynx; a skin rash that can be urticarial, macropapular, or scarlatiniform; and cervical adenopathy (often unilateral). Laboratory evidence includes thrombocytosis (often with a platelet count greater than 1,000,000/mm³ by the third week) and evidence of acute inflammation.

While the acute phase of this illness is self-limited, coronary artery aneurysms that can lead to thrombosis, stenosis, or myocardial infarction and sudden death may develop in 25% of untreated patients. Approximately 3000 cases occur annually in the U.S.

Goals of therapy include reduction of inflammation within the coronary artery wall and myocardium and prevention of thrombosis by inhibiting platelet aggregation. At one time, aspirin was the principal therapeutic agent. While this aided the resolution of the fever and other acute manifestations of the illness, it did not appreciably reduce the prevalence of coronary artery aneurysms. However, the administration of intravenous γ -globulin within the first 10 days of illness significantly reduces coronary artery abnormalities. Recommendations for treatment include intravenous γ -globulin, 2 mg/kg as a single infusion, plus aspirin, 80–100 mg/kg/day in 4 doses within 10 days of the onset of the illness. The aspirin can be reduced to 3–5 mg/kg as a single daily dose beginning on the 14th day of the illness. Aspirin can be discontinued if echocardiograms reveal no coronary artery abnormalities by 6 weeks after the beginning of the illness. The use of corticosteroids remains controversial and is not generally recommended.

Follow-up should include serial echocardiograms and cardiovascular evaluation by persons experienced in the pediatric aspects of these techniques. MMR vaccine should be delayed for at least 11 months due to the passively acquired measles antibody in the serum of patients who have received γ -globulin. Other childhood vaccinations need not be delayed.

Ref: Pickering LK (ed): *2003 Red Book: Report of the Committee on Infectious Diseases*, ed 26. American Academy of Pediatrics, 2003, pp 382-395. 2) Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 823-826.

PATIENT M

Options 125–132

ANSWERS: 125) T; 126) T; 127) T; 128) T; 129) T; 130) F; 131) F; 132) T

All variables listed are risk factors for STDs that have been confirmed in numerous population-based studies of adolescents. Among reportable sexually transmitted diseases, *Chlamydia trachomatis* remains the most prevalent in adolescents, with the highest rates occurring in sexually experienced adolescent girls and young women. This is also the group with the highest rates of *Neisseria gonorrhoeae* infection.

Ref: Boyer CB, Shafer MA, Teitle E, et al: Sexually transmitted diseases in a health maintenance organization teen clinic: Associations of race, partner's age, and marijuana use. *Arch Pediatr Adolesc Med* 1999;153(8):838-844. 2) Wang LY, Burstein GR, Cohen DA: An economic evaluation of a school-based sexually transmitted disease screening program. *Sex Transm Dis* 2002;29(12):737-745. 3) Pickering LK (ed): *2003 Red Book: Report of the Committee on Infectious Diseases*, ed 26. American Academy of Pediatrics, 2003, pp 157-160.

PATIENT N

Options 133–144

ANSWERS: 133) T; 134) T; 135) T; 136) F; 137) T; 138) T; 139) T; 140) T; 141) T; 142) T; 143) F; 144) T

Risk factors for coronary artery disease (CAD) include male sex and age >45, female sex and age >55 or postmenopausal status without estrogen replacement therapy, family history of premature CAD (before age 55 in a male first degree relative or 65 in a female first degree relative), current cigarette smoking, hypertension (blood pressure >140/90 mm Hg or anyone receiving antihypertensive drug therapy), HDL cholesterol <35 mg/dL, and diabetes mellitus. An HDL cholesterol level >60 mg/dL is considered to be a negative risk factor.

Assessment of this patient for thrombolytic therapy or other reperfusion techniques is indicated, along with oral aspirin and intravenous heparin for their anticoagulation effects. Initial management should include aspirin, sublingual nitroglycerin, and oxygen. Ongoing pain should be treated with intravenous nitroglycerin and morphine as needed. The patient should be admitted to an intensive-care unit, not an intermediate-care unit.

Ref: Ahmed SM, Clasen ME, Donnelly JE: Management of dyslipidemia in adults. *Am Fam Physician* 1998;57(9):2192-2204. 2) Lee TH, Goldman L: Evaluation of the patient with acute chest pain. *N Engl J Med* 2000;342(16):1187-1195. 3) Kasper DL, Braunwald E, Fauci AS, et al (eds): *Harrison's Principles of Internal Medicine*, ed 16. McGraw-Hill, 2005, pp 9-10, 29, 1444, 1448, 1453-1460.

PATIENT O

Options 145–154

ANSWERS: 145) T; 146) T; 147) T; 148) F; 149) F; 150) F; 151) F; 152) T; 153) T; 154) T

This patient has both abnormal perimenopausal uterine bleeding and polycystic ovary syndrome (PCOS). She has multiple risk factors for endometrial hyperplasia, including nulliparity, early menarche, infertility, obesity, and diabetes. In most cases of abnormal uterine bleeding in the premenopausal woman, a CBC, TSH, and pregnancy test are necessary. The evaluation of PCOS requires endocrine studies, including tests for glucose intolerance, as well as prolactin, FSH, LH, testosterone, and DHEA-S levels. Metformin is now considered the hypoglycemic agent of choice for PCOS. Endometrial adenomatous hyperplasia can be treated with progesterone, usually given cyclically to induce a medical curettage. Unopposed estrogen is contraindicated in all women with an intact uterus, especially those already showing potentially precancerous endometrial changes. Spironolactone can be used to control hirsutism.

Ref: Canavan TP, Doshi NR: Endometrial cancer. *Am Fam Physician* 1999;59(11):3069-3077. 2) Hunter MH, Sterrett JJ: Polycystic ovary syndrome: It's not just infertility. *Am Fam Physician* 2000;62(5):1079-1088, 1090. 3) Slowey MJ: Polycystic ovary syndrome: New perspective on an old problem. *South Med J* 2001;94(2):190-196. 4) Goldman L, Ausiello D (eds): *Cecil Textbook of Medicine*, ed 22. Saunders, 2004, pp 1495, 1502, 1506.

PATIENT P

Options 155–160

ANSWERS: 155) T; 156) F; 157) T; 158) F; 159) F; 160) T

Prematurity and a hematocrit below 45% in the newborn period correlate with the subsequent development of iron deficiency. Anemia in the mother has not been shown to reduce the hemoglobin concentration of the infant.

The presence of a decreased hemoglobin concentration (or hematocrit) in association with microcytosis strongly suggests iron deficiency anemia. This diagnosis can be confirmed by a reduced serum ferritin concentration, a reduced transferrin saturation, or an elevated erythrocyte porphyrin level. A rise in hemoglobin concentration following a therapeutic trial of bioavailable iron will also confirm the diagnosis.

Ref: Behrman RE, Kliegman RM, Jenson HB (eds): *Nelson Textbook of Pediatrics*, ed 17. Saunders, 2004, pp 1614-1616.