Davis's Comprehensive Manual of Laboratory and Diagnostic Tests with Nursing Implications 8th edition Leeuwen Test Bank

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Van Leeuwen: Davis's Comprehensive Manual of Laboratory and Diagnostic Tests with Nursing Implications, 8e

Rationales

Multiple Choice

1. A nurse is caring for a patient with a diagnosis of chronic myelogenous leukemia (CML). The patient was admitted to an acute care unit with a temperature of 100.4°F (38°C) and weight loss over the past 2 to 3 months. The nurse notes that the patient's white blood cell (WBC) count is 23×10^3/microL (SI = 23×10^9/L), and the physical examination shows splenomegaly. The priority nursing intervention should be:

1. avoiding falls.
2. managing pain.
3. preventing infection.
4. promoting adequate nutrition.

ANS: 3
Page: 1245

	Feedback
1.	This is incorrect. Although avoiding falls is important, it is not the main priority for a patient presenting with a diagnosis of CML and leukocytosis. Preventing opportunistic infections should be the priority.
2.	This is incorrect. Although managing pain is important, it is not the main priority for a patient presenting with a diagnosis of CML and leukocytosis. Preventing opportunistic infections should be the priority.
3.	This is correct. The nurse's priority should be planning interventions to prevent opportunistic infections for the patient with CML and significant leukocytosis.
4.	This is incorrect. Although promoting adequate nutrition is important, it is not the main priority for a patient presenting with a diagnosis of CML and leukocytosis. Preventing opportunistic infections should be the priority.

2. A patient with diabetes requires assessment of long-term glucose control. Which test would be most appropriate for this patient?
1. Glycated hemoglobin (Hgb)
2. Glucose
3. Glucose-6-phosphate dehydrogenase (G6PD)
4. Glucose tolerance test

ANS: 1
Page: 630

	Feedback

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1.	This is correct. Glycated hemoglobin is used to indicate long-term glycemic management.
2.	This is incorrect. Glucose levels are used to assist in the diagnosis of diabetes and to evaluate disorders of carbohydrate metabolism such as malabsorption syndrome
3.	This is incorrect. Glucose-6-phosphate dehydrogenase is used to identify an enzyme deficiency that can result in hemolytic anemia.
4.	This is incorrect. The glucose tolerance test is used to evaluate blood glucose levels to assist in diagnosing diabetes.

3. A nurse notes that a patient has a urine pH of 7.2. Which information in the patient's history may be related to this result?
1. Maintaining a vegetarian diet
2. Training for a marathon
3. Recent febrile illness
4. Use of cranberry supplements daily

ANS: 1
Page: 1201

	Feedback
1.	This is correct. Vegetarian diets may result in an elevated urine pH.
2.	This is incorrect. Metabolic or respiratory acidosis that may result from intense physical training results in a lower pH.
3.	This is incorrect. Although febrile illness increases urine glucose ketones, it does not influence pH.
4.	This is incorrect. Ingestion of cranberries decreases urine pH and therefore would not result in an elevated pH.

4. A patient with pernicious anemia has a laboratory order to test for intrinsic factor (IF) antibodies. A nurse scheduling this test should instruct the patient to:
1. begin a bowel prep 24 hours prior to the examination.
2. eliminate red meat from the diet for 72 hours before the test.
3. take nothing by mouth for 12 hours before the test is to take place.
4. withhold vitamin B_{12} for 2 weeks before the test is to take place.

ANS: 4
Page: 740

	Feedback
1.	This is incorrect. Bowel prep is not needed prior to this test.
2.	This is incorrect. There are no food restrictions unless by medical direction.
3.	This is incorrect. There are no food or fluid restrictions unless by medical direction.

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4.	This is correct. Administration of B_{12} should be withheld 2 weeks before testing because B_{12} can invalidate the results.

5. A nurse observes that a patient admitted to the emergency department with decreased level of consciousness has urine with a very fruity odor. Based on this observation, the nurse should plan interventions to manage:
1. alcohol withdrawal.
2. diabetic ketoacidosis (DKA).
3. fibromyalgia.
4. Lyme disease.

ANS: 2
Page: 749

	Feedback
1.	This is incorrect. Excessive alcohol use may lead to ketoacidosis, but alcohol withdrawal will not.
2.	This is correct. Elevated levels of ketone bodies are evidenced by fruit-smelling breath and therefore the nurse should plan interventions to manage the diabetic ketoacidosis.
3.	This is incorrect. Fibromyalgia does not influence the level of ketones in urine.
4.	This is incorrect. Lyme disease does not influence the level of ketones in urine.

6. A patient must undergo pulmonary angiography but has a history of allergic reaction to some medications. Which of the following actions should be taken in response to this finding?
1. Remove all metallic objects from the area to be examined.
2. Administer an antianxiety agent, as ordered.
3. Use a nonionic contrast medium.
4. Notify the health-care provider (HCP) to cancel the procedure.

ANS: 3
Page: 67

	Feedback
1.	This is incorrect. Removal of all metallic objects is a standard intervention before any x-ray imaging.
2.	This is incorrect. The nurse can administer an antianxiety agent, as ordered, but this will not influence the risk of an allergic reaction.
3.	This is correct. Use of nonionic contrast may be considered for patients who have experienced allergic reactions to medications in the past.
4.	This is incorrect. There is no need to cancel the procedure because a nonionic contrast medium can be used.

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7. A patient's laboratory test results following amniotic fluid analysis indicate elevated α1-fetoprotein (AFP) levels and presence of acetylcholinesterase (AChE). Which of the following conditions should the nurse most suspect given these findings?
1. Respiratory distress syndrome
2. Fetal hemolytic disease
3. Neural tube defect
4. Fetal immaturity

ANS: 3
Page: 57

	Feedback
1.	This is incorrect. A lecithin/sphingomyelin ratio of less than 2:1 and absence of phosphatidylglycerol at term indicate fetal lung immaturity and possible respiratory distress syndrome.
2.	This is incorrect. Elevated bilirubin levels indicate fetal hemolytic disease.
3.	This is correct. Elevated AFP levels and presence of AChE indicate a neural tube defect.
4.	This is incorrect. Creatinine concentration greater than 2 mg/dL (greater than 176.8 micromol/L) indicates fetal maturity (at 36 to 37 weeks) if maternal creatinine is also within the expected range.

8. A college student who is admitted to the hospital with newly diagnosed type 1 diabetes has a C-peptide level of 0.6 ng/mL (SI = 0.2 nmol/L) and serum glucose level of 256 mg/dL (SI = 14.2 mmol/L). Based on these results, which instruction should the nurse provide to this patient?
1. "Based on these results, your diabetes will be controlled by oral medications and diet."
2. "If you lose weight, you may be able to manage your diabetes with diet alone."
3. "Because you are already an adult, this result confirms that you have type 2 diabetes."
4. "You will need to take insulin for the rest of your life."

ANS: 4
Page: 411

	Feedback
1.	This is incorrect. A low C-peptide indicates insufficient production of insulin by the pancreas and therefore insulin is necessary.
2.	This is incorrect. Type I diabetes requires insulin and cannot be managed with diet alone.
3.	This is incorrect. C-peptide levels are typically increased in type 2 diabetes.
4.	This is correct. A low C-peptide indicates type 1 diabetes with an elevated blood glucose, so the nurse should instruct the patient that insulin will be required.

9. Which laboratory test should a nurse monitor to determine whether a patient is responding to the administration of iron for iron-deficiency anemia?
1. Eosinophils
2. Lymphocytes

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3. Monocytes
4. Reticulocytes

ANS: 4
Page: 1049

	Feedback
1.	This is incorrect. Eosinophil count is used to assist in the diagnosis of conditions related to immune responses, such as asthma, dermatitis, and hay fever and also assist in the identification of parasitic infections.
2.	This is incorrect. Lymphocytes are white blood cells produced in the bone marrow and thymus and are used to assess infection.
3.	This is incorrect. Monocytes are white blood cells that are used to assess infection.
4.	This is correct. If the patient is responding to the administration of iron for iron-deficiency anemia, the nurse would expect to see increased reticulocytes, immature red blood cells produced by the bone marrow.

10. A patient has had an indwelling urinary catheter inserted to collect urine for a 24-hour creatinine clearance test. To begin the test, the nurse should:
1. collect all urine during any 24-hour period by labeling the drainage collection bag with the date and time most recently emptied.
2. clamp the urinary catheter and then drain all urine into the container specified by the laboratory and repeat every 6 hours times 4.
3. empty all urine in the urinary drainage bag at 0600 and then save all urine until the next day at 0600.
4. increase meat portions in the diet for at least 48 hours prior to the planned start of the collection.

ANS: 3
Page: 426

	Feedback
1.	This is incorrect. The collection bag should include the urine total volume, test start and stop times/dates, and any medications that may interfere with test results.
2.	This is incorrect. All urine voided for the 24-hour collection period must be included in one collection or else inaccurate results may be obtained.
3.	This is correct. The accuracy of the creatinine clearance test requires careful collection of urine over a defined 24-hour period, so the nurse must empty all urine in the urinary drainage bag or, if the patient is not catheterized, ask the patient to void and discard the first specimen at 0600. Then save all urine until the next day at 0600.
4.	This is incorrect. Meat is metabolized to creatinine and excreted by the kidneys and therefore may invalidate results.

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11. A nurse is preparing to assist with performing a lumbar puncture to collect a specimen for diagnosis of Alzheimer disease. Which position should the nurse ask the patient to assume for this test?
1. Knee-chest
2. Side-lying
3. Prone
4. Standing

ANS: 1
Page: 43

	Feedback
1.	This is correct. To perform a lumbar puncture, position the patient in the knee-chest position at the side of the bed. Provide pillows to support the spine or for the patient to grasp.
2.	This is incorrect. The side-lying position is not appropriate for this test.
3.	This is incorrect. The prone position is not appropriate for this test.
4.	This is incorrect. The standing position is not appropriate for this test.

12. Which blood tests should a nurse monitor to determine whether a patient's blood level of warfarin [CA = warfarin sodium] is within the therapeutic range?
1. Activated partial thromboplastin time (aPTT)
2. Bleeding time
3. Platelet count and aPTT
4. Prothrombin time (PT) and international normalized ratio (INR)

ANS: 4
Page: 911

	Feedback
1.	This is incorrect. The aPPT time represents the time required for formation of a firm fibrin clot after tissue thromboplastin reagents and calcium are added to a plasma specimen.
2.	This is incorrect. Bleeding time studies provide measurable responses that represent the time it might take for platelet closure to occur after a vascular injury.
3.	This is incorrect. Platelet counts are used to assist in diagnosing and evaluating treatment for blood disorders and to evaluate coagulation status. aPTT is used to indicate factor deficiencies and assists in assessing coagulation disorders.
4.	This is correct. The PT and INR should both be monitored to determine the therapeutic range for a patient receiving warfarin.

13. A nurse has just conducted hearing loss audiometry testing on a 10-year-old patient. The patient's pure tone average was 52 dB. Which category of hearing of the American Speech-Language-Hearing Association (ASHA) does this result represent?
1. Normal

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2. Slight loss
3. Moderate loss
4. Profound loss

ANS: 3
Page: 125

	Feedback
1.	This is incorrect. Normal range is −10 to 15 dB.
2.	This is incorrect. Slight loss is 16 to 25 dB.
3.	This is correct. Moderate loss is 41 to 55 dB.
4.	This is incorrect. Profound loss is greater than 91 dB.

14. A nurse has just administered an IV nucleotide to a patient before a gallium scan. The nurse should instruct the patient to return for the first scanning in how many hours, typically?
1. 6
2. 24
3. 48
4. 72

ANS: 1
Page: 601

	Feedback
1.	This is correct. After the IV radionuclide is administered, the patient is instructed to return for scanning at a designated time after injection. Typical scanning occurs at 6, 24, 48, 72, 96, and/or 120 hours post-injection, depending on diagnosis.
2.	This is incorrect. The first scan occurs at 6 hours postinjection, depending on diagnosis.
3.	This is incorrect. The first scan occurs at 6 hours postinjection, depending on diagnosis.
4.	This is incorrect. The first scan occurs at 6 hours postinjection, depending on diagnosis.

15. A nurse notes that a patient's laboratory results show an acetylcholine receptor antibody (AChR) of 2.46 nmol/L. Based on this information, the nurse should assess this patient for clinical manifestations of:
1. malignant hyperprexia.
2. myasthenia gravis.
3. multiple myeloma.
4. muscular dystrophy.

ANS: 2
Page: 1

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	Feedback
1.	This is incorrect. Malignant hyperprexia is a complication of general anesthesia.
2.	This is correct. The nurse should assess the patient with an increased AChR level for clinical manifestations of myasthenia gravis because the muscle weakness associated with this disease is related to destruction of acetylcholine receptor sites.
3.	This is incorrect. Multiple myeloma is assessed using albumin levels, and not AChR.
4.	This is incorrect. Muscular dystrophy is assessed using aldolase levels, and not AChR.

16. A patient is suspected of having increased risk for stroke. Which type of angiography should be performed to detect this condition?
1. Abdominal
2. Adrenal
3. Carotid
4. Coronary

ANS: 3
Page: 66

	Feedback
1.	This is incorrect. Abdominal angiography is used to visualize and assess abdominal organs/structure for tumor, infection, or aneurysm.
2.	This is incorrect. Adrenal angiography is used to visualize and assess the adrenal gland for cancer or other tumors or masses, such as pheochromocytoma.
3.	This is correct. Carotid angiography is used to visualize and assess the carotid arteries and surrounding tissues for abscess, tumors, and aneurysm and to evaluate for atherosclerotic disease related to stroke risk.
4.	This is incorrect. Coronary angiography is used to visualize and assess the heart and surrounding structures for abnormalities, defects, aneurysm, and tumors and to diagnose coronary artery disease.

17. Which factor in a patient's history may be associated with a decreased creatine kinase (CK) level?
1. Sedentary lifestyle
2. Alcoholism
3. Hypothyroidism
4. Surgery

ANS: 1
Page: 416

	Feedback
1.	This is correct. Sedentary lifestyle is associated with a decreased CK level.

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2.	This is incorrect. Alcoholism is associated with an increased CK level.
3.	This is incorrect. Hypothyroidism is associated with an increased CK level.
4.	This is incorrect. Surgery is associated with an increased CK level.

18. A nurse is preparing to administer a radionuclide to an adult patient for a gastroesophageal reflux scan. With what should the nurse mix the radionuclide?
1. Orange juice
2. Milk
3. Water
4. Soda

ANS: 1
Page: 613

	Feedback
1.	This is correct. The nurse should mix the radionuclide with orange juice and have the patient drink it.
2.	This is incorrect. The nurse should mix the radionuclide with orange juice, not milk, and have the patient drink it.
3.	This is incorrect. The nurse should mix the radionuclide with orange juice, not water, and have the patient drink it.
4.	This is incorrect. The nurse should mix the radionuclide with orange juice, not soda, and have the patient drink it.

19. A patient is suspected of having multiple myeloma and needs to undergo testing to identify the individual types of immunoglobulins present to confirm a diagnosis. Which test would be most appropriate for this purpose?
1. Immunofixation electrophoresis (IFE)
2. Immunoglobulin E (IgE)
3. Immunoglobulin A (IgA)
4. Immunosuppressant cyclosporine [CA = ciclosporine]

ANS: 1
Page: 720

	Feedback
1.	This is correct. IFE is used to identify the individual types of immunoglobulins, to aid in diagnosing diseases such as multiple myeloma, and to evaluate effectiveness of chemotherapy
2.	This is incorrect. IgE testing is used to assess IgE levels to identify the presence of an allergic or inflammatory immune response, such as in hay fever.
3.	This is incorrect. IgA testing is used to evaluate patients suspected of IgA deficiency prior to transfusion and to evaluate anaphylaxis associated with the transfusion of blood and blood products (anti-IgA antibodies may develop in

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	patients with low levels of IgA, possibly resulting in anaphylaxis when donated blood is transfused).
4.	This is incorrect. Testing of the immunosuppressant cyclosporine [CA = ciclosporine] is done to assist in the management of treatments to prevent organ rejection and to monitor for toxicity.

20. A patient with a history of hypertension has a serum creatinine level of 1.9 mg/dL (SI = 168 micromol/L). When assessing this patient, a nurse should interpret these results as an indication this patient may have:
1. early signs of renal insufficiency.
2. evidence of severe kidney dysfunction.
3. hypertension secondary to kidney disease.
4. normal kidney function.

ANS: 1
Page: 418

	Feedback
1.	This is correct. The nurse should interpret these results as an indication that the patient may have early signs of renal insufficiency.
2.	This is incorrect. Kidney disease is present at levels greater than 3 mg/dL.
3.	This is incorrect. Although hypertension may result from renal insufficiency, additional testing is needed to confirm hypertension.
4.	This is incorrect. Serum creatinine levels are elevated and indicate early signs of renal insufficiency.

21. A patient who is treated in an emergency department following a sexual assault is concerned about the possibility of infection with HIV. The patient requests a blood test to determine whether HIV infection has occurred. The results are negative. Which action by the nurse is appropriate?
1. Inform the patient to monitor for symptoms because false-negative results are common.
2. Instruct the patient to schedule a follow-up test in 6 months.
3. Reassure the patient that no infection with HIV has occurred.
4. Reinforce the need to use appropriate protection with intercourse in the future.

ANS: 2
Page: 706

	Feedback
1.	This is incorrect. False-positive HIV test results can occur in patients who are immunocompromised due to conditions that include autoimmune disease, leukemias, and lymphomas.
2.	This is correct. The initial test establishes the patient's current HIV status. If this is negative, the most appropriate action is for the nurse to instruct the patient to

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	schedule a follow-up test in 6 months because it takes that long for the body to develop antibodies that can be detected.
3.	This is incorrect. Negative HIV test results occur during the acute state of the disease, so the patient should schedule a follow-up test in 6 months.
4.	This is incorrect. The nurse should not assume infection with HIV and should suggest a follow-up test in 6 months.

22. A patient maintained on furosemide is admitted with a serum potassium level of 2.9 mEq/L (SI = 2.9 mmol/L). Which clinical manifestation should the nurse expect to find on assessment?
1. Irritability and diarrhea
2. Malaise, thirst, polyuria, and low blood pressure
3. Oliguria and difficulty speaking
4. Cardiac dysrhythmias

ANS: 2
Page: 959

	Feedback
1.	This is incorrect. Irritability and diarrhea are signs of hyperkalemia, not hypokalemia.
2.	This is correct. The nurse should assess the patient for signs of hypokalemia, such as muscle weakness, lethargy, or irregular heartbeat. While hypokalemia may be asymptomatic, it is especially important to monitor the patient's cardiac status.
3.	This is incorrect. Oliguria and difficulty speaking are signs of hyperkalemia, not hypokalemia.
4.	This is incorrect. Cardiac dysrhythmias are signs of hyperkalemia, not hypokalemia.

23. A patient's laboratory test results indicate a negative finding on an infectious mononucleosis screen. The HCP, however, is concerned that this result could be a false-negative due to an interfering factor. Which of the following could cause such a false-negative finding?
1. Cocaine addition
2. Lymphoma
3. Hepatitis
4. Test conducted fewer than 6 days after exposure to the virus

ANS: 4
Page: 845

	Feedback
1.	This is incorrect. Cocaine addiction may cause a false-positive finding.
2.	This is incorrect. Lymphomas may result in a false-positive finding.

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3.	This is incorrect. Hepatitis may result in a false-positive finding.
4.	This is correct. A false-negative result may occur if treatment was begun before antibodies developed or if the test was done less than 6 days after exposure to the virus. False-positive results may occur in the presence of narcotic addiction, serum sickness, lymphomas, hepatitis, leukemia, cancer of the pancreas, and phenytoin therapy.

24. A high school student is undergoing a required annual sports physical screening examination. A nurse notes that the student's serum creatinine level is 1.3 mg/dL (SI = 114.9 micromol/L). Which additional laboratory data should the nurse consider in order to assess the significance of this result?
1. Albumin level
2. Blood urea nitrogen (BUN)
3. Hgb level
4. Triglyceride level

ANS: 2
Page: 419

	Feedback
1.	This is incorrect. Albuminuria is considered an independent risk factor predictive of kidney or cardiovascular disease and is not related to the serum creatinine level.
2.	This is correct. The ratio of serum creatinine to BUN is important when interpreting the significance of either result.
3.	This is incorrect. Hgb levels would be used to assess fluid volume excess.
4.	This is incorrect. Triglyceride levels are related to total cholesterol levels, and not serum creatinine.

25. A patient has an order for a blood test for antisperm antibodies. Which condition should a nurse plan to manage if this test is positive?
1. Infertility
2. Prostate cancer
3. Prostatic hyperplasia
4. Testicular cancer

ANS: 1
Page: 101

	Feedback
1.	This is correct. The nurse should plan to provide infertility counseling because the test is used to identify the presence of antibodies that lower the sperm count over time.
2.	This is incorrect. Prostate cancer is not identified using antisperm antibodies.
3.	This is incorrect. Prostatic hyperplasia is not identified using antisperm antibodies

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4.	This is incorrect. Although high levels of antisperm antibodies may result from the disruption in the integrity of the blood-testes barrier in testicular cancer, more testing is needed to confirm a diagnosis.

26. A patient diagnosed with chronic obstructive pulmonary disease has a carboxyhemoglobin level of 5%. When planning care for this patient, which question should a nurse ask to determine the significance of this result?
1. “Do you experience headaches or dizziness?”
2. “How many cigarettes do you smoke each day?
3. “How often do you exercise outdoors?”
4. “What kind of heating do you have in your home?”

ANS: 2
Page: 275

	Feedback
1.	This is incorrect. Headaches and dizziness occur at levels of 10% to 30% of total hemoglobin.
2.	This is correct. The nurse should ask about smoking habits because smokers can have carboxyhemoglobin levels up to 12%.
3.	This is incorrect. Exercising outdoors will not influence carboxyhemoglobin levels.
4.	This is incorrect. Although this question is important because gas heaters and indoor cooking fires may influence CO levels, the most relevant question to ask is related to cigarette smoking.

27. A patient with a history of sickle cell disease has a total bilirubin level of 0.9 mg/dL (SI = 15.4 micromol/L) with a direct bilirubin level of 0.3 mg/dL (SI = 5.1 micromol/L). Which additional data should the nurse obtain to plan care for this patient?
1. None, normal results
2. Ultrasound of the gallbladder
3. Liver function tests
4. Serum electrolytes

ANS: 1
Page: 141

	Feedback
1.	This is correct. Destruction of red blood cells during a sickle cell crisis could increase bilirubin, but these results are within normal limits, so no additional information is needed.
2.	This is incorrect. Total bilirubin levels are within normal limits, so no additional information is needed.
3.	This is incorrect. Total bilirubin levels are within normal limits, so no additional information is needed.

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4.	This is incorrect. Total bilirubin levels are within normal limits, so no additional information is needed.

28. A nurse assessing a patient with a history of inflammatory bowel disease notes bilateral pitting edema of both the ankles and feet. Which laboratory result is most likely related to this finding?
1. Decreased albumin
2. Elevated triglycerides
3. Elevated cholesterol
4. Elevated platelet count

ANS: 1
Page: 21

	Feedback
1.	This is correct. Because proteins in the blood maintain the osmotic pressure gradient that keeps water in the vascular spaces, the nurse should observe for decreased albumin that will contribute to the movement of water from the vascular to the interstitial spaces.
2.	This is incorrect. Elevated triglycerides would not lead to pitting edema of the ankles and feet.
3.	This is incorrect. Elevations of cholesterol are associated with conditions caused by an inherited defect in lipoprotein metabolism, liver disease, kidney disease, or a disorder of the endocrine system
4.	This is incorrect. An elevated platelet count, or thrombocytosis, may cause increased clotting and would not lead to pitting edema in the ankles and feet.

29. A patient diagnosed with coronary artery disease begins therapy with simvastatin. Which laboratory result should the nurse monitor to determine the effectiveness of this treatment?
1. Aspartate aminotransferase
2. Alkaline phosphatase
3. Alanine aminotransferase
4. Total cholesterol

ANS: 4
Page: 336

	Feedback
1.	This is incorrect. Aspartate aminotransferase is used to assess liver function and would not be affected by simvastatin.
2.	This is incorrect. Alkaline phosphatase is used to assess liver function and would not be affected by simvastatin.
3.	This is incorrect. Alanine aminotransferase is used to assess liver function and would not be affected by simvastatin.
4.	This is correct. Statins such as simvastatin inhibit a liver enzyme, HMG Co-A reductase, reducing the liver's ability to make cholesterol. This results in a

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	significant decrease in low-density lipoprotein “bad” cholesterol levels, so the nurse should monitor total cholesterol to determine the patient’s response to treatment.

30. A patient with a serum phosphate level of 1.1 mg/dL (SI = 0.4 mmol/L) is receiving IV sodium phosphate. When administering sodium phosphate, a nurse should monitor closely for:
1. convulsions, nervousness, and muscle cramps.
2. lethargy and confusion.
3. nausea, vomiting, and diarrhea.
4. headaches and anorexia.

ANS: 1
Page: 255

	Feedback
1.	This is correct. Phosphate can decrease calcium levels. The nurse should monitor for signs of hypocalcemia, including convulsions, nervousness, and muscle cramps.
2.	This is incorrect. Lethargy and confusion are signs of hypercalcemia, not hypocalcemia.
3.	This is incorrect. Nausea, vomiting, and diarrhea are signs of hypercalcemia, not hypocalcemia.
4.	This is incorrect. Headaches and anorexia are signs of hypercalcemia, not hypocalcemia.

31. When reviewing the laboratory results for an adult patient with elevated parathyroid hormone (PTH), which other laboratory result should the nurse interpret as significant?
1. Alanine aminotransferase (ALT) 22 units/L
2. Alkaline phosphatase (ALP) 250 units/L
3. Aspartate aminotransferase (AST) 20 units/L
4. Creatine kinase (CK) 120 units/L

ANS: 2
Page: 30

	Feedback
1.	This is incorrect. ALT is used to assess liver function and the level is in the normal range.
2.	This is correct. The nurse should interpret elevated ALP as significant for bone loss in patients with increased PTH.
3.	This is incorrect. AST is used to assess liver function and the level is in the normal range.
4.	This is incorrect. The CK level is within the normal range.

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32. A patient who is receiving chemotherapy has a white blood cell count of 7.2×10^3/microL (SI = 7.2×109/L) and a platelet count of 66×10^3/microL (SI = 66×10^9/L). Which order should the nurse question for this patient?
1. Acetaminophen 650 mg by mouth every 4 hours as needed for pain
2. Docusate [CA = docusate calcium] 1 to 2 tablets as needed
3. Eszopiclone [CA = N/A] 2 mg by mouth at bedtime as needed
4. Pneumococcal vaccine polyvalent 0.5 mL intramuscularly

ANS: 4
Page: 375

	Feedback
1.	This is incorrect. Acetaminophen is fine with patients with a low platelet count.
2.	This is incorrect. Docusate is a stool softener and is fine for patients with a low platelet count.
3.	This is incorrect. Eszopiclone is used to treat insomnia and does not need to be questioned for a patient with a low platelet count.
4.	This is correct. The nurse should question any order for an intramuscular injection due to the increased risk for bleeding. If this vaccination cannot be delayed until the platelet count improves, a subcutaneous injection may be preferred.

33. A patient is suspected of having Wegener syndrome. Which of the following antibody tests should the nurse expect to conduct on this patient to confirm this suspicion?
1. Anti-cyclic citrullinated peptide (anti-CCP)
2. Anti-glomerular basement membrane (anti-GBM)
3. Actin (smooth muscle) and mitochondrial M2
4. Perinuclear antineutrophil cytoplasmic antibody (p-ANCA)

ANS: 4
Page: 93

	Feedback
1.	This is incorrect. The anti-CCP antibodies test is performed to assist in diagnosing and monitoring rheumatoid arthritis.
2.	This is incorrect. The anti-GBM antibodies test is performed to assist in differentiating Goodpasture syndrome (an autoimmune disease) from renal dysfunction.
3.	This is incorrect. The actin (smooth muscle) and mitochondrial M2 antibodies test is performed to assist in the differential diagnosis of chronic liver disease, typically biliary cirrhosis.
4.	This is correct. The p-ANCA test is performed to assist in diagnosing and monitoring the effectiveness of therapeutic interventions for Wegener syndrome.

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34. A patient is suspected of having biliary cirrhosis. Which of the following antibody tests should the nurse expect to conduct on this patient to confirm this suspicion?
1. Anticyclic citrullinated peptide (anti-CCP)
2. Antiglomerular basement membrane (anti-GBM)
3. Actin (smooth muscle) and mitochondrial M2
4. Antineutrophil cytoplasmic

ANS: 3
Page: 76

	Feedback
1.	This is incorrect. The anti-CCP antibodies test is performed to assist in diagnosing and monitoring rheumatoid arthritis.
2.	This is incorrect. The anti-GBM antibodies test is performed to assist in differentiating Goodpasture syndrome (an autoimmune disease) from renal dysfunction.
3.	This is correct. The actin (smooth muscle) and mitochondrial M2 antibodies test is performed to assist in the differential diagnosis of chronic liver disease, typically biliary cirrhosis.
4.	This is incorrect. The antineutrophil cytoplasmic antibodies test is performed to assist in diagnosing and monitoring the effectiveness of therapeutic interventions for Wegener syndrome.

35. The results of a patient's adrenocorticotropic hormone (ACTH) test show a decreased cortisol level and an increased ACTH level. Which of the following conditions do these results most likely indicate?
1. Addison disease
2. Cushing disease
3. Cushing syndrome related to ectopic source of ACTH
4. Cushing syndrome (ACTH-independent)

ANS: 1
Page: 406

	Feedback
1.	This is correct. A decreased cortisol level and an increased ACTH level indicate Addison disease.
2.	This is incorrect. Increased levels of both cortisol and ACTH indicate either Cushing disease (pituitary adenoma) or Cushing syndrome related to ectopic source of ACTH.
3.	This is incorrect. Increased levels of both cortisol and ACTH indicate either Cushing disease (pituitary adenoma) or Cushing syndrome related to ectopic source of ACTH.
4.	This is incorrect. An increased cortisol level and decreased ACTH level indicate Cushing syndrome (ACTH-independent).

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36. A patient with lymphadenopathy and splenomegaly is diagnosed with infectious mononucleosis. The patient's platelet count is 50×10^3/microL (SI = 50×10^9/L). As a result of this laboratory value, what instructions would the nurse give the patient?
1. "Avoid contact sports, vigorous exercise, and lifting heavy objects."
2. "Brush teeth vigorously at least twice daily to maintain good oral hygiene."
3. "Restrict use of fiber in the diet or bulk-forming laxatives."
4. "Use aspirin or NSAIDs to manage pain."

ANS: 1
Page: 930

	Feedback
1.	This is correct. The patient, whose platelet count is 50×10^3/microL (SI = 50×10^9/L), is at risk for bleeding and therefore should avoid contact sports, vigorous exercise, and lifting heavy objects.
2.	This is incorrect. Although brushing teeth is important for maintaining good oral hygiene, it is not the most important priority for a patient with a low platelet count. The patient is at risk for bleeding from the gums, so vigorous brushing should be avoided.
3.	This is incorrect. The patient is at risk for bleeding and restricting fiber is not related.
4.	This is incorrect. Aspirin or NSAIDs increase bleeding risk and should not be recommended to someone with a reduced platelet count.

37. A patient who is maintained on total parenteral nutrition (TPN) due to an exacerbation of inflammatory bowel disease has a ceruloplasmin level of 17 mg/dL (SI = 170 mg/L). For which clinical manifestation should a nurse assess this patient?
1. Arthralgia or migratory joint pain
2. Chest pain or mental status changes
3. Increased white blood cell count and fever
4. Jaundice or change in eye color

ANS: 4
Page: 300

	Feedback
1.	This is incorrect. Ceruloplasmin deficiency will not lead to arthralgia or migratory joint pain.
2.	This is incorrect. Elevated ceruloplasmin levels are associated with mental status changes.
3.	This is incorrect. Increased white blood count and fever are not clinical manifestations of low ceruloplasmin levels.

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4.	This is correct. The nurse should assess for clinical manifestations of low ceruloplasmin, such as jaundice or change in eye color. The HCP or pharmacist should review the TPN formula and add copper to correct the deficiency.

38. A patient diagnosed with hepatitis B reports easy bruising and bleeding with minor skin trauma. Which laboratory result should a nurse relate to this finding?
1. Hematocrit (Hct) of 40% (SI = 0.4 volume fraction)
2. Platelet count of 200 × 10^3/microL (SI = 200 × 10^9/L)
3. PT of 22 seconds
4. aPTT of 35 seconds

ANS: 3
Page: 998

	Feedback
1.	This is incorrect. The patient's hematocrit is within the normal range.
2.	This is incorrect. The patient's platelet count is within the normal range.
3.	This is correct. The nurse relates a history of easy bruising and bleeding to an increased PT (normal PT is 10–13 seconds).
4.	This is incorrect. Normal aPTT is 25 to 35 seconds and is would not cause easy bruising and bleeding.

39. A patient diagnosed with type 1 diabetes is maintained on a nighttime dose of basal insulin with short-acting insulin prior to meals three times daily. The patient has had two consecutive glycated hemoglobin A1c (Hgb A1c) results that are less than 5%. Which question should a nurse ask when interpreting these results?
1. "Do you experience excessive fatigue during the daytime?"
2. "Have you noticed episodes of shakiness and profuse perspiration?"
3. "How often do you have to get up at night to void?"
4. "What time of day do you usually have your meals?"

ANS: 2
Page: 630

	Feedback
1.	This is incorrect. Fatigue is associated with excessive blood glucose levels.
2.	This is correct. The nurse should seek information about the possibility of potentially dangerous episodes of unrecognized hypoglycemia that would be consistent with such a low Hgb A1c
3.	This is incorrect. Polyuria is associated with is associated with elevated blood glucose levels.
4.	This is incorrect. The time of day that meals occur is not important for interpretation of the results. Instead, asking about the timing of insulin doses would be more helpful.

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40. A nurse is assisting with a gastrointestinal (GI) blood loss scan of a 1-month-old to detect areas of active GI bleeding. Given this patient's age, the nurse should suspect which primary cause of the bleeding?
1. Ingested foreign body
2. Allergies to milk proteins
3. Ulcers produced by NSAID use
4. Mallory-Weiss tears

ANS: 2
Page:1176

	Feedback
1.	This is incorrect. Ingested foreign bodies are common causes of GI bleeding in children 2 to 23 months old.
2.	This is correct. Allergies to milk proteins are a common cause of GI bleeding in infants up to 1 month old.
3.	This is incorrect. NSAID-induced ulcers are common causes of GI bleeding in children 2 to 23 months old.
4.	This is incorrect. Mallory-Weiss tears are a common cause of GI bleeding in children 24 months and older.

41. A patient undergoing assessment for anemia has a haptoglobin level of 25 mg/dL (SI = 0.25 g/L) and an increased reticulocyte count. Which type of anemia should the nurse plan to manage?
1. Aplastic anemia
2. Hemolytic anemia
3. Folic acid–deficiency anemia
4. Iron-deficiency anemia

ANS: 2
Page: 657

	Feedback
1.	This is incorrect. Low levels of haptoglobin and increased reticulocyte counts are associated with hemolytic anemia, not aplastic anemia.
2.	This is correct. Based on a low haptoglobin level with an increased reticulocyte count, the nurse should prepare to manage hemolytic anemia. Haptoglobin binds with free Hgb released when red blood cells are lysed.
3.	This is incorrect. Low levels of haptoglobin and increased reticulocyte counts are associated with hemolytic anemia, not folic acid–deficiency anemia. More testing would be needed to diagnose this type of anemia.
4.	This is incorrect. Low levels of haptoglobin and increased reticulocyte counts are associated with hemolytic anemia, not iron-deficiency anemia. More testing would be needed to diagnose this type of anemia.

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42. An adolescent female patient diagnosed with iron-deficiency anemia is started on oral iron supplements. Which laboratory result should the nurse identify as an indication that the patient is responding to treatment after 1 month?
1. Hgb has increased by 1 g/dL (SI = 10 g/L).
2. Mean corpuscular Hgb concentration (MCHC) decreases.
3. Red blood cells are hypochromic.
4. Reticulocyte count decreases.

ANS: 1
Page: 669

	Feedback
1.	This is correct. The nurse should evaluate that treatment is effective if Hgb increases by at least 1 g/dL (SI = 10 g/L) over 3 to 4 weeks of treatment. If anemia persists, further diagnostic interventions are indicated.
2.	This is incorrect. An increase in Hgb would indicate the patient is responding to treatment and increased Hgb levels would lead to an increased MCHC.
3.	This is incorrect. Hypochromia is associated with iron-deficiency anemia, so you would not want to have this finding. Instead, if responding to treatment, RBCs should be normochromic, indicated normal Hgb levels.
4.	This is incorrect. Although a decreased reticulocyte count may indicate that iron-deficiency is improving, assessing Hgb levels is the best test to determine the response to treatment.

43. A patient admitted with epigastric pain describes the pain as “steady” with onset about 3 days prior. The patient’s serum lipase level is 230 units/L. Which intervention should the nurse include in the patient’s initial plan of care?
1. Encourage increased oral fluid intake and ambulation at least twice daily.
2. Keep patient nothing by mouth (NPO) and monitor vital signs every 4 hours.
3. Promote adequate nutrition with small, frequent meals.
4. Provide low-fat, high-fiber diet and monitor serum glucose before meals.

ANS: 2
Page: 782

	Feedback
1.	This is incorrect. Elevated lipase levels and the associated pain indicate pancreatitis, and the patient should limit movement until pain is resolved.
2.	This is correct. Increased lipase and the associated pain indicate pancreatitis, so the nurse should initially plan to keep the patient NPO and on bedrest until pain is resolved and then begin refeeding cautiously to avoid exacerbating a renewed attack. The nurse should also monitor vital signs every 4 hours because the patient with pancreatitis can develop serious complications.
3.	This is incorrect. Although it is important for the patient to consume small, frequent meals, the first priority should be to manage pain and keep them NPO.

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4.	This is incorrect. Patients with acute symptoms are usually prescribed a clear liquid diet initially, before transitioning to a low-fat, high-carbohydrate diet.

44. A nurse is reviewing laboratory data for an older adult patient admitted to a hospital with diagnoses of dementia and dehydration. Which laboratory data should the nurse assess in relation to this diagnosis?
1. Decreased Hgb and potassium
2. Decreased serum creatinine and BUN
3. Increased albumin and normal sodium
4. Increased Hct and BUN

ANS: 4
Page: 673

	Feedback
1.	This is incorrect. Potassium and Hgb would increase with dehydration.
2.	This is incorrect. Although BUN is used to reflect fluid status and would help with the diagnosis, serum creatinine
3.	This is incorrect. Sodium levels increase with dehydration.
4.	This is correct. The nurse assesses for increased Hct and BUN related to hemoconcentration secondary to dehydration. Older adult patients often do not recognize thirst and/or are unable to ambulate to obtain fluids, especially when dementia is present.

45. A patient has a serum albumin level of 4.1 g/dL (SI = 41 g/L). Based on this laboratory value, the nurse should instruct this patient to:
1. add more green leafy vegetables daily.
2. continue with current dietary patterns.
3. increase fiber and fluid in the diet.
4. increase protein in the diet.

ANS: 2
Page: 20

	Feedback
1.	This is incorrect. The serum albumin level is within the normal range and therefore changes to their current diet is not necessary.
2.	This is correct. The nurse should instruct the patient to maintain the current diet because this is a normal albumin level.
3.	This is incorrect. The serum albumin level is within the normal range and therefore changes to their current diet is not necessary.
4.	This is incorrect. The serum albumin level is within the normal range and therefore changes to their current diet is not necessary.

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46. A nurse is reviewing a newborn patient's arterial blood gas results. Which pH result should the nurse identify as a "critical" value that should be reported immediately to the requesting HCP?
1. 7.12
2. 7.29
3. 7.36
4. 7.6

ANS: 4
Page: 199

	Feedback
1.	This is incorrect. The normal range of arterial pH for a newborn is 7.11 to 7.36, and these value falls within this range.
2.	This is incorrect. The normal range of arterial pH for a newborn is 7.11 to 7.36, and these value falls within this range.
3.	This is incorrect. The normal range of arterial pH for a newborn is 7.11 to 7.36, and these value falls within this range.
4.	This is correct. The normal range of arterial pH for a newborn is 7.11 to 7.36. The nurse identifies a pH of 7.6 as a "critical" value requiring the requesting HCP's review of the treatment plan.

47. A patient is concerned about a "high sed rate" and asks a nurse what this means. Which response by the nurse is most accurate?
1. "A high sedimentation (sed) rate usually means that you have an inflammatory disease, so you should get a second opinion if your HCP is not treating you."
2. "The erythrocyte sedimentation rate is a nonspecific test that needs to be interpreted by your HCP based on your overall health."
3. "This test is used to determine whether you are responding to treatment with chemotherapy."
4. "You should not worry about this because your HCP is monitoring it."

ANS: 2
Page: 546

	Feedback
1.	This is incorrect. More testing is needed to diagnose an inflammatory disease, and therefore this response is not accurate.
2.	This is correct. This response clarifies the significance of the test and redirects the patient to the requesting HCP to interpret the test.
3.	This is incorrect. More testing is needed to determine the response to chemotherapy, and therefore this response is not accurate.
4.	This is incorrect. You cannot make this conclusion from the results. More interpretation of the results is needed.

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48. A patient who denies any history of drug use has a pre-employment urine drug screen that is positive for opiates. Which information provided by the patient should the nurse relate to this laboratory finding?
1. Attended a party recently where others were smoking marijuana
2. Has smoked one pack of cigarettes per day for 5 years
3. Takes an NSAID for tendonitis
4. Usual breakfast is a muffin or bagel with sesame or poppy seeds

ANS: 4
Page: 507

	Feedback
1.	This is incorrect. Marijuana is not an opiate and therefore would not influence this finding.
2.	This is incorrect. Cigarettes do not contain opiates and therefore would not be related to this finding.
3.	This is incorrect. NSAIDs are not opiates and would not contribute to this finding.
4.	This is correct. The nurse should identify the report of a breakfast with a muffin or bagel with poppy seeds as a related factor because the ingestion of large amounts of poppy seeds can produce a false-positive result.

49. A patient receiving IV vancomycin [CA = vancomycin hydrochloride] has orders for "vancomycin trough levels" [CA = vancomycin hydrochloride trough levels]. The patient's next dose of vancomycin [CA = vancomycin hydrochloride] is due at 1000. Based on this information, the nurse should plan for the specimen to be drawn at:
1. 0800, or at least 2 hours prior to the scheduled dose.
2. 0930, or immediately prior to beginning the scheduled 1000 dose.
3. 1000, as infusion of the next dose has started.
4. 1100, when the infusion is completed.

ANS: 2
Page: 494

	Feedback
1.	This is incorrect. The nurse should draw the specimen immediately prior to the 1000 dose. 0800 would be too early.
2.	This is correct. The nurse should plan for the specimen to be drawn at 0930 or immediately prior to beginning the scheduled 1000 dose. Trough levels are monitored to ensure that continual antibacterial activity is provided and timing is critical to effective decisions about treatment.
3.	This is incorrect. The nurse should draw the specimen immediately prior to the 1000 dose. The most important intervention is accurate therapeutic drug monitoring so the medication can be discontinued before irreversible damage is done.

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4.	This is incorrect. The nurse should draw the specimen immediately prior to the 1000 dose so 1100 would be too late. The most important intervention is accurate therapeutic drug monitoring so the medication can be discontinued before irreversible damage is done.

50. A patient with a history of type 2 diabetes has a serum creatinine level of 1.4 mg/dL (SI = 123.8 micromol/L) and a random urine sample that shows +4 for protein. What medication does the nurse anticipate will be prescribed for this patient?
1. Diltiazem [CA = diltiazem hydrochloride]
2. Glipizide [CA = N/A]
3. Hydrochlorothiazide
4. Losartan [CA = losartan potassium]

ANS: 4
Page: 425

	Feedback
1.	This is incorrect. While controlling blood pressure is important in preserving kidney function, this is not the first-line treatment for patients with early-stage kidney disease.
2.	This is incorrect. While controlling blood glucose levels is important for someone with type 2 diabetes, this is not the first-line treatment for patients with early-stage kidney disease.
3.	This is incorrect. While controlling blood pressure is important in preserving kidney function, this is not the first-line treatment for patients with early-stage kidney disease.
4.	This is correct. The National Kidney Foundation guidelines identify angiotensin converting enzyme inhibitors such as losartan [CA = losartan potassium] for first-line treatment of patients with early-stage kidney disease.

51. A patient has an allergen-specific immunoglobulin E (IgE) level of 65 kU/L. This is indicative of which of the following radioimmunoassay (RAST) scores?
1. Low allergy
2. Moderate allergy
3. High allergy
4. Extremely high allergy

ANS: 4
Page: 33

	Feedback
1.	This is incorrect. Low allergy is indicated by a score of 0.35 to 0.7.
2.	This is incorrect. Moderate allergy is indicated by a score of 0.71 to 3.5.
3.	This is incorrect. High allergy is indicated by a score of 3.51 to 17.5.
4.	This is correct. A RAST score of greater than 17.5 is considered very high.

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