Import Settings:

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Information Field: Complexity

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Highest Answer Letter: D

Multiple Keywords in Same Paragraph: No

**Chapter: Medication Administration - Medication Administration - TBNK**

**Multiple Choice**

1. Which of the following statements regarding dehydration is correct?

A) It is often a chronic condition in elderly patients and may take days to manifest.

B) During early dehydration, a profound loss of interstitial fluid occurs in the body.

C) In younger patients, dehydration is typically caused by an acute loss of more than 50 mL of blood.

D) During dehydration, fluid shifts from the extracellular compartment to the intracellular compartment.

Ans: A

Complexity: Moderate

Ahead: Cellular Fluid Composition and Status

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Feedback: Cellular Fluid Composition and Status, page 691

2. Signs and symptoms of dehydration include all of the following, EXCEPT:

A) bradypnea.

B) flushed, dry skin.

C) orthostatic hypotension.

D) dry mucous membranes.

Ans: A

Complexity: Easy

Ahead: Cellular Fluid Composition and Status

Subject: Medication Administration

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Feedback: Cellular Fluid Composition and Status, page 691

3. Overhydration occurs when:

A) a patient experiences prolonged periods of severe hyperventilation.

B) the left side of the heart fails and blood backs up into the systemic circulation.

C) the intracellular compartment becomes engorged due to a decrease in vascular volume.

D) fluid is forced from the engorged interstitial compartment into the intracellular compartment.

Ans: D

Complexity: Easy

Ahead: Cellular Fluid Composition and Status

Subject: Medication Administration

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Feedback: Cellular Fluid Composition and Status, page 691

4. A common cause of overhydration is:

A) hypertension.

B) kidney failure.

C) gastrointestinal drainage.

D) prolonged hyperventilation.

Ans: B

Complexity: Easy

Ahead: Cellular Fluid Composition and Status

Subject: Medication Administration

Page: 691

Feedback: Cellular Fluid Composition and Status, page 691

5. Signs and symptoms of overhydration include:

A) edema.

B) oliguria.

C) weight loss.

D) wheezing.

Ans: A

Complexity: Easy

Ahead: Cellular Fluid Composition and Status

Subject: Medication Administration

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Feedback: Cellular Fluid Composition and Status, page 691

6. IV fluids introduced into the circulatory system:

A) are only effective if the patient is experiencing renal insufficiency.

B) will always cause a fluid shift out of the intracellular compartment.

C) can affect the tonicity of the extracellular fluid and can be harmful.

D) usually do not cause a fluid shift into or out of the intracellular space.

Ans: C

Complexity: Moderate

Ahead: IV Fluid Composition

Subject: Medication Administration

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Feedback: IV Fluid Composition, page 693

7. Which of the following statements regarding isotonic solutions is correct?

A) Isotonic solutions have almost the same osmolarity as bodily fluids.

B) D5W becomes an isotonic solution once it is introduced into the body.

C) Normal saline is the only isotonic solution used in the prehospital setting.

D) Isotonic solutions expand the vascular space by shifting fluid from other compartments.

Ans: A

Complexity: Moderate

Ahead: IV Fluid Composition

Subject: Medication Administration

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Feedback: IV Fluid Composition, page 693

8. A solution of water with 0.9% sodium chloride is:

A) hypotonic until it is introduced into the body.

B) capable of carrying oxygen when it is infused.

C) of minimal value in expanding the vascular space.

D) also called normal saline and is an isotonic solution.

Ans: D

Complexity: Easy

Ahead: IV Fluid Composition

Subject: Medication Administration

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Feedback: IV Fluid Composition, page 693

9. It is MOST important to exercise caution when administering isotonic solutions to patients with:

A) hypotension and severe hypovolemia.

B) hypertension and congestive heart failure.

C) dehydration secondary to excessive diarrhea.

D) a history of insulin-dependent diabetes mellitus.

Ans: B

Complexity: Moderate

Ahead: IV Fluid Composition

Subject: Medication Administration

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Feedback: IV Fluid Composition, page 693

10. Lactated Ringer (LR) solution should not be given to patients with liver problems because:

A) LR is a hypertonic solution and cannot be metabolized by the liver.

B) the lactate contained within LR can cause necrosis of the liver tissue.

C) patients with liver disease commonly experience renal insufficiency.

D) the liver cannot metabolize the lactate in the solution.

Ans: D

Complexity: Moderate

Ahead: IV Fluid Composition

Subject: Medication Administration

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Feedback: IV Fluid Composition, page 693

11. Lactated Ringer (LR) solution may be beneficial to patients who have lost large amounts of blood because:

A) it takes less LR to effectively expand the intravascular compartment than any other isotonic solution.

B) LR has the ability to carry oxygen and can maintain cellular perfusion until the patient receives definitive care.

C) the lactate contained within LR is converted to bicarbonate in the liver and can help combat intracellular acidosis.

D) the likelihood of causing acute circulatory overload is minimal relative to other hypertonic solutions.

Ans: C

Complexity: Moderate

Ahead: IV Fluid Composition

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Feedback: IV Fluid Composition, page 693

12. Once D5W is infused into the body:

A) the body metabolizes the dextrose quickly and the solution becomes hypotonic.

B) it causes fluid to shift from the intracellular space into the vascular space.

C) cellular uptake of dextrose occurs and the solution quickly becomes isotonic.

D) it rapidly expands the vascular space and effectively increases blood pressure.

Ans: A

Complexity: Easy

Ahead: IV Fluid Composition

Subject: Medication Administration

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Feedback: IV Fluid Composition, page 694

13. Hypotonic solutions:

A) include normal saline and lactated Ringer solution.

B) draw fluid from the cells and into the vascular space.

C) hydrate the cells while depleting the vascular compartment.

D) are the preferred solutions to use in patients with head trauma.

Ans: C

Complexity: Easy

Ahead: IV Fluid Composition

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Feedback: IV Fluid Composition, page 694

14. A hypertonic solution has an osmolarity higher than that of serum, meaning that the solution:

A) may cause the cells to expand and rupture due to the increased intracellular osmotic pressure exerted by the solution.

B) has more ionic concentration than serum and pulls fluid and electrolytes from the intracellular and interstitial compartments into the intravascular compartment.

C) contains high concentrations of proteins and can result in fluid overloading in patients with impaired cardiac function or renal insufficiency.

D) has a lower ionic concentration than serum and pulls fluid and electrolytes from the intravascular compartment into the intracellular and interstitial compartments.

Ans: B

Complexity: Moderate

Ahead: IV Fluid Composition

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Feedback: IV Fluid Composition, page 694

15. Which of the following statements regarding isotonic crystalloid solutions is correct?

A) You should infuse 1 mL of isotonic crystalloid solution for every 3 mL of estimated blood loss.

B) Approximately two-thirds of infused isotonic crystalloid solution will leave the vascular space within 1 hour.

C) Isotonic crystalloids, such as normal saline, have the ability to carry and deliver oxygen to the body's cells.

D) The ability of isotonic crystalloids to cross membranes and alter fluid levels makes them dangerous to use for fluid replacement.

Ans: B

Complexity: Moderate

Ahead: IV Fluid Composition

Subject: Medication Administration

Page: 692

Feedback: IV Fluid Composition, page 692

16. Administering large amounts of an isotonic crystalloid solution to a patient with internal bleeding would MOST likely:

A) expand the vascular space and improve systemic perfusion.

B) cause acute hypotension as fluid is drawn from the vascular space.

C) change the ratio of hemoglobin and red blood cells.

D) increase the severity of internal bleeding by interfering with hemostasis.

Ans: D

Complexity: Moderate

Ahead: IV Fluid Composition

Subject: Medication Administration

Pages: 692–693

Feedback: IV Fluid Composition, pages 692–693

17. How much isotonic crystalloid solution should you administer to a patient who weighs 65 kg and who has signs and symptoms of internal bleeding?

A) Boluses of up to 1,625 mL each

B) 10 to 20 mL/kg every 5 to 10 minutes

C) An amount to maintain radial pulses and mentation

D) Enough to increase blood pressure to a normal level

Ans: C

Complexity: Moderate

Ahead: IV Fluid Composition

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Feedback: IV Fluid Composition, page 692

18. Colloid solutions:

A) contain proteins that are too large to pass out of the capillary membranes, so the solutions remain in the vascular compartment.

B) include solutions such as lactated Ringer solution and normal saline and rapidly expand the intravascular compartment.

C) are safe to use in the prehospital setting because they rapidly and effectively expand the intravascular compartment.

D) do not contain large molecules and are therefore ineffective in expanding the intravascular compartment.

Ans: A

Complexity: Moderate

Ahead: IV Fluid Composition

Subject: Medication Administration

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Feedback: IV Fluid Composition, page 693

19. All of the following are examples of colloid solutions, EXCEPT:

A) dextran.

B) Hespan.

C) Plasmanate.

D) lactated Ringer.

Ans: D

Complexity: Easy

Ahead: IV Fluid Composition

Subject: Medication Administration

Page: 693

Feedback: IV Fluid Composition, page 693

20. Which of the following statements regarding synthetic blood substitutes is correct?

A) Type O-negative blood is a synthetic blood substitute.

B) They have the ability to carry oxygen to the body's cells.

C) They do not possess the ability to carry and deliver oxygen.

D) Hespan is the most commonly used synthetic blood substitute.

Ans: B

Complexity: Moderate

Ahead: IV Fluid Composition

Subject: Medication Administration

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Feedback: IV Fluid Composition, page 694

21. The use of O-negative blood in the prehospital setting is impractical because:

A) it expires in 24 hours.

B) it requires refrigeration.

C) not everyone can receive O-negative blood.

D) the blood cannot be typed and cross-matched.

Ans: B

Complexity: Moderate

Ahead: IV Fluid Composition

Subject: Medication Administration

Page: 694

Feedback: IV Fluid Composition, page 694

22. All of the following are peripheral veins, EXCEPT the:

A) subclavian vein.

B) external jugular vein.

C) veins of the hand.

D) lower extremity veins.

Ans: A

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 695

Feedback: IV Techniques and Administration, page 695

23. The MOST important point to remember about IV therapy is to:

A) locate the largest vein.

B) wear two pairs of gloves.

C) keep the IV equipment sterile.

D) prepare all supplies ahead of time.

Ans: C

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 695

Feedback: IV Techniques and Administration, page 695

24. Which of the following questions does the paramedic generally NOT ask himself or herself when determining the most appropriate IV solution to use on a patient?

A) Is the patient's condition critical?

B) Will the patient need medications?

C) Has the patient had IV therapy before?

D) Will the patient need fluid replacement?

Ans: C

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 695

Feedback: IV Techniques and Administration, page 695

25. In the prehospital setting, the MOST commonly used IV solutions are:

A) colloid solutions.

B) hypotonic crystalloids.

C) hetastarch and saline.

D) isotonic crystalloids.

Ans: D

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 695

Feedback: IV Techniques and Administration, page 695

26. Once an IV solution is removed from its protective sterile plastic bag, it must be used:

A) immediately.

B) within 24 hours.

C) within 36 hours.

D) within 48 hours.

Ans: B

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 695

Feedback: IV Techniques and Administration, page 695

27. Once the pigtail is removed from the sterile access port of an IV solution, the solution must be used:

A) immediately.

B) within 24 hours.

C) within 36 hours.

D) within 48 hours.

Ans: A

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 695

Feedback: IV Techniques and Administration, page 695

28. A microdrip administration set:

A) allows 10 or 15 drops per milliliter.

B) delivers 1 mL for every 60 drops.

C) should be used when patients need fluid replacement.

D) does not contain a needlelike orifice in its drip chamber.

Ans: B

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 696

Feedback: IV Techniques and Administration, page 696

29. When a patient needs rapid fluid replacement, you should:

A) use a microdrip administration set because you can deliver more precise volumes of IV fluid.

B) choose an administration set that delivers the least amount of volume per the most number of drops.

C) select an administration set that contains a large opening between the piercing spike and drip chamber.

D) use a microdrip administration set in order to avoid inadvertently overloading the patient with fluid.

Ans: C

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 696

Feedback: IV Techniques and Administration, page 696

30. When preparing an IV administration set, you should NOT:

A) invert the bag if the drip chamber contains too much fluid.

B) run IV fluid through the administration set to flush air out.

C) fill the drip chamber of the administration set with IV fluid.

D) cleanse the piercing spike before inserting it into the IV bag.

Ans: D

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Pages: 696–697

Feedback: IV Techniques and Administration, pages 696–697

31. Blood tubing is a:

A) special type of microdrip administration set that contains an inline filter designed to cleanse transfused blood of impurities.

B) macrodrip administration set that is designed to be used exclusively with 1,000-mL bags of type O-negative blood.

C) macrodrip administration set that is designed to facilitate rapid fluid replacement by manual infusion of multiple IV bags or a combination of IV fluids and blood.

D) special administration set with dual piercing spikes that allows the paramedic to administer IV fluids to two critically ill or injured patients at the same time.

Ans: C

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 697

Feedback: IV Techniques and Administration, page 697

32. The purpose of a Volutrol (Buretrol) administration set is to:

A) avoid inadvertent fluid overload.

B) deliver large volumes of IV fluid.

C) facilitate piggyback medication infusions.

D) deliver a maximum of 50 mL of IV solution.

Ans: A

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 697

Feedback: IV Techniques and Administration, page 697

33. When selecting a vein for cannulation, you should avoid areas of the vein that:

A) are straight.

B) pass over joints.

C) are firm and springy.

D) appear to be straight.

Ans: B

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 698

Feedback: IV Techniques and Administration, page 698

34. When initiating an IV line in the upper extremity of a stable patient, you should:

A) always use the antecubital vein.

B) look at the anterior forearm first.

C) start proximally and work distally.

D) start distally and work proximally.

Ans: D

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Pages: 698–699

Feedback: IV Techniques and Administration, pages 698–699

35. Large protruding arm veins in an otherwise healthy adult can be difficult to cannulate because they often:

A) are covered by thick skin that bends the IV catheter.

B) constrict in response to insertion of the IV catheter.

C) roll from side to side during the cannulation attempt.

D) rupture spontaneously when punctured with the needle.

Ans: C

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 699

Feedback: IV Techniques and Administration, page 699

36. “Track marks” along the course of a patient's vein are usually a sign of:

A) sclerosis caused by frequent cannulation.

B) numerous one-way valves inside the vein.

C) small vein rupture caused by hypertension.

D) multiple thromboses deep within the vein.

Ans: A

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 699

Feedback: IV Techniques and Administration, page 699

37. When selecting the most appropriate IV catheter, you should routinely consider all of the following, EXCEPT:

A) the age of the patient.

B) the purpose of the IV.

C) the location of the IV.

D) the patient's gender.

Ans: D

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Pages: 699–700

Feedback: IV Techniques and Administration, pages 699–700

38. Through which of the following over-the-needle catheters can you infuse the greatest amount of fluid over the shortest period of time?

A) 16 gauge, 1 ¼

B) 14 gauge, 1 ¼

C) 18 gauge, 2 ¼

D) 14 gauge, 2 ¼

Ans: B

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Pages: 699–700

Feedback: IV Techniques and Administration, pages 699–700

39. If an adult patient requires fluid replacement for hypovolemic shock, the paramedic should use at least a/an \_\_\_ gauge over-the-needle catheter.

A) 14

B) 16

C) 18

D) 20

Ans: C

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 700

Feedback: IV Techniques and Administration, page 700

40. If an adult patient is in hypovolemic shock, you should attempt to insert a(n) \_\_\_\_\_\_ over-the-needle catheter into the \_\_\_\_\_\_\_.

A) 14-gauge, metacarpal vein

B) 16-gauge, metacarpal vein

C) 20-gauge, external jugular vein

D) 18-gauge, antecubital vein

Ans: A

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 700

Feedback: IV Techniques and Administration, page 700

41. Regardless of the technique you use to start an IV, you should always:

A) apply a tight constricting band proximal to the selected vein for approximately 5 minutes.

B) use an over-the-needle catheter that features an automatic needle retraction system for added safety.

C) obtain blood samples for emergency department staff by attaching a syringe to the hub of the IV catheter.

D) keep the beveled side of the catheter up during insertion and maintain adequate traction on the vein during cannulation.

Ans: D

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Pages: 700, 704

Feedback: IV Techniques and Administration, pages 700, 704

42. After observing a flash of blood in the IV catheter's flash chamber, you should:

A) remove the proximal constricting band and then slide the catheter off the needle and into the vein.

B) carefully raise the angle of the catheter to approximately 45° and thread the catheter off of the needle.

C) apply pressure to the vein just proximal to the end of the indwelling catheter and remove the needle.

D) immediately drop the angle of the catheter to about 15° and advance the catheter a few more centimeters.

Ans: D

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 701

Feedback: IV Techniques and Administration, page 701

43. After attaching the prepared IV line to the hub of the IV catheter and removing the constricting band, you should:

A) set the IV flow rate to keep the vein open (KVO).

B) open the IV line and observe for swelling or infiltration.

C) apply a sterile gauze pad directly over the venipuncture site.

D) secure the catheter and tubing in place with a commercial device.

Ans: B

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Pages: 704–705

Feedback: IV Techniques and Administration, pages 704–705

44. In the prehospital setting, saline locks are used primarily for patients who:

A) have cancer and require continuous infusions of chemotherapy.

B) are in compensated shock and only require small IV fluid boluses.

C) do not need additional fluids but may need rapid medication delivery.

D) have fragile veins that are easily infiltrated by rapid IV fluid boluses.

Ans: C

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 706

Feedback: IV Techniques and Administration, page 706

45. When changing an IV bag, it is important to:

A) ensure that fluid remains in the drip chamber.

B) attach a new fluid administration set to the bag.

C) ensure that the tubing is completely depleted of fluid.

D) allow the bag to become completely depleted of fluid.

Ans: A

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 702

Feedback: IV Techniques and Administration, page 702

46. The first step in discontinuing an IV line is to:

A) stabilize the catheter as you remove the tape.

B) shut off the flow of fluid with the roller clamp.

C) remove the tubing from the hub of the catheter.

D) ensure that all of the fluid has been administered.

Ans: B

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 705

Feedback: IV Techniques and Administration, page 705

47. Common risks associated with cannulation of the external jugular vein include all of the following, EXCEPT:

A) an air embolism.

B) carotid artery puncture.

C) a rapidly expanding hematoma.

D) cannulation of the subclavian vein.

Ans: D

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 706

Feedback: IV Techniques and Administration, page 706

48. Prior to cannulating an external jugular vein, it is MOST important to:

A) cleanse the puncture site.

B) palpate for the carotid pulse.

C) turn the patient's head to the side.

D) occlude the vein distal to the puncture site.

Ans: B

Complexity: Easy

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 706

Feedback: IV Techniques and Administration, page 706

49. If you discover that an IV is not flowing sufficiently, you should:

A) check the height of the IV bag.

B) reapply the constricting band.

C) discontinue the IV infusion.

D) pull back on the IV catheter.

Ans: A

Complexity: Moderate

Ahead: Factors Affecting IV Flow Rates

Subject: Medication Administration

Page: 708

Feedback: Factors Affecting IV Flow Rates, page 708

50. Edema at the IV catheter site and continued IV flow after occlusion of the vein above the insertion site are signs of:

A) phlebitis.

B) infection.

C) infiltration.

D) thrombophlebitis.

Ans: C

Complexity: Easy

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 709

Feedback: Potential Complications of IV Therapy, page 709

51. Thrombophlebitis is MOST commonly caused by:

A) abuse of IV drugs.

B) long-term IV therapy.

C) lapses in aseptic technique.

D) any type of hypotonic solution.

Ans: C

Complexity: Easy

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 710

Feedback: Potential Complications of IV Therapy, page 710

52. The first sign(s) of IV occlusion is/are:

A) a varying flow rate when the IV catheter is manipulated.

B) local tissue swelling and a progressively slowing drip rate.

C) point tenderness and an abrupt cessation of the IV flow rate.

D) a decreasing drip rate or the presence of blood in the IV tubing.

Ans: D

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 709

Feedback: Potential Complications of IV Therapy, page 709

53. When determining whether an occluded IV line should be reestablished, you should:

A) attempt to improve the IV flow rate by applying a pressure infuser device around the IV bag.

B) infuse 10 mL of normal saline through the injection port to attempt to disrupt the occlusion.

C) lower the IV bag below the level of the patient's heart and observe for blood return in the IV tubing.

D) apply manual pressure to the IV bag while observing for a sudden increase in the IV flow rate.

Ans: B

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 709

Feedback: Potential Complications of IV Therapy, page 709

54. Vein irritation during IV therapy is usually caused by:

A) the formation of a thrombus.

B) an infusion rate that is too rapid.

C) contaminants in the IV solution.

D) IV solutions that are not warmed.

Ans: B

Complexity: Easy

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 709

Feedback: Potential Complications of IV Therapy, page 709

55. Pain, tenderness, and blood rapidly pooling around the IV site are MOST indicative of:

A) hematoma.

B) phlebitis.

C) vein occlusion.

D) thrombophlebitis.

Ans: A

Complexity: Easy

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 710

Feedback: Potential Complications of IV Therapy, page 710

56. Which of the following conditions or situations is associated with the HIGHEST risk of vein rupture during IV cannulation?

A) Diabetes

B) Hypertension

C) Ibuprofen use

D) Atherosclerosis

Ans: A

Complexity: Easy

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 710

Feedback: Potential Complications of IV Therapy, page 710

57. Damage to nerves, tendons, or ligaments would MOST likely occur during venipuncture if:

A) the patient has diabetes.

B) the patient moves suddenly.

C) the selected IV site is near a joint.

D) a small vein in the hand is cannulated.

Ans: C

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 710

Feedback: Potential Complications of IV Therapy, page 710

58. To avoid inadvertently cannulating an artery, you should:

A) routinely cannulate veins on the anterior aspect of the arm.

B) refrain from attempting to cannulate an external jugular vein.

C) recall that most patients' veins and arteries are transpositioned.

D) always check for a pulse in any vessel you intend to cannulate.

Ans: D

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 710

Feedback: Potential Complications of IV Therapy, page 710

59. The MOST prominent clinical indicator of a pyrogenic reaction is:

A) fever.

B) nausea.

C) a headache.

D) vascular collapse.

Ans: A

Complexity: Easy

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

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Feedback: Potential Complications of IV Therapy, page 711

60. Pyrogenic reactions can be largely avoided by:

A) determining if the patient has any allergies.

B) inspecting the IV solution carefully before use.

C) premedicating the patient with 1 gram of acetaminophen.

D) keeping the piercing spike sterile after it is exposed.

Ans: B

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 711

Feedback: Potential Complications of IV Therapy, page 711

61. The MOST common cause of circulatory overload in the prehospital setting is:

A) overestimating the patient's baseline hydration level and giving too much IV fluid.

B) failure to readjust the drip rate after flushing the IV line immediately after insertion.

C) not using a Volutrol administration set when administering IV fluids to the elderly.

D) administering excessive crystalloid solutions to patients with hypovolemic shock.

Ans: B

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 711

Feedback: Potential Complications of IV Therapy, page 711

62. Signs and symptoms of circulatory overload include:

A) diarrhea.

B) headache.

C) hypertension.

D) collapsed jugular veins.

Ans: C

Complexity: Easy

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 711

Feedback: Potential Complications of IV Therapy, page 711

63. During IV therapy, the presence of shortness of breath, unequal breath sounds, and cyanosis despite administration of high-flow oxygen should make you MOST suspicious for:

A) an air embolus.

B) circulatory overload.

C) acute pulmonary edema.

D) spontaneous pneumothorax.

Ans: A

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 711

Feedback: Potential Complications of IV Therapy, page 711

64. A vasovagal reaction is the result of:

A) acute bradycardia.

B) sudden hypertension.

C) massive vasoconstriction.

D) dilation of the vasculature.

Ans: D

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 711

Feedback: Potential Complications of IV Therapy, page 711

65. The signs and symptoms that occur when an IV catheter is sheared and becomes a free-floating segment in the circulatory system MOST closely resemble:

A) pneumothorax.

B) an air embolus.

C) left-sided heart failure.

D) right-sided heart failure.

Ans: B

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Pages: 711–712

Feedback: Potential Complications of IV Therapy, pages 711–712

66. A lavender-topped blood tube:

A) contains a preservative to help determine blood-clotting factors.

B) is used to determine a patient's hematocrit and hemoglobin levels.

C) contains no additives and is intended to clot if blood typing is needed.

D) is filled with heparin and is used to evaluate electrolyte and glucose levels.

Ans: B

Complexity: Easy

Ahead: Obtaining Blood Samples

Subject: Medication Administration

Page: 712

Feedback: Obtaining Blood Samples, page 712

67. Which of the following blood tubes contains citrate and is used to determine a patient's prothrombin time (PT), partial thromboplastin time (PTT), and international normalized ratio?

A) Red top

B) Green top

C) Blue top

D) Lavender top

Ans: C

Complexity: Easy

Ahead: Obtaining Blood Samples

Subject: Medication Administration

Page: 712

Feedback: Obtaining Blood Samples, page 712

68. Intraosseous (IO) infusion is a technique of administering IV fluids and medications into:

A) the IO space of a long bone.

B) the diaphysis of the femur or humerus.

C) the epiphysis of the proximal tibia.

D) a large vein that lies deep within the neck.

Ans: A

Complexity: Easy

Ahead: Intraosseous Infusion

Subject: Medication Administration

Page: 713

Feedback: Intraosseous Infusion, page 713

69. The IO space collectively comprises the \_\_\_\_\_\_\_\_ bone of the \_\_\_\_\_\_\_\_ and the medullary cavity of the \_\_\_\_\_\_\_\_.

A) tibial, upper leg, diaphysis

B) cancellous, epiphysis, diaphysis

C) diaphyseal, epiphysis, proximal tibia

D) epiphyseal, diaphysis, cancellous bone

Ans: B

Complexity: Moderate

Ahead: Intraosseous Infusion

Subject: Medication Administration

Page: 714

Feedback: Intraosseous Infusion, page 714

70. Which of the following statements regarding IO cannulation and infusion is correct?

A) The IO space remains patent, even when peripheral veins have collapsed.

B) The IO route is reserved for select medications and certain blood products.

C) IO infusion should only be attempted in children younger than 6 years of age.

D) Medication absorption occurs more slowly through the IO space than through the IV route.

Ans: A

Complexity: Moderate

Ahead: Intraosseous Infusion

Subject: Medication Administration

Page: 714

Feedback: Intraosseous Infusion, page 714

71. If a manually inserted IO needle is placed properly in an adult, it should:

A) not require a pressure infuser.

B) be easily movable in the bone.

C) rest at a 45° angle to the bone.

D) rest at a 90° angle to the bone.

Ans: D

Complexity: Moderate

Ahead: Intraosseous Infusion

Subject: Medication Administration

Page: 715

Feedback: Intraosseous Infusion, page 715

72. Which of the following IO devices is NOT used in children?

A) EZ-IO

B) Jamshedi needle

C) FAST1

D) Bone Injection Gun (BIG)

Ans: C

Complexity: Moderate

Ahead: Intraosseous Infusion

Subject: Medication Administration

Pages: 715–716

Feedback: Intraosseous Infusion, pages 715–716

73. When infusing crystalloid solutions through an IO catheter in adult, you should:

A) give 200 mL at a time.

B) use a pressure infuser device.

C) deliver the solution via syringe.

D) inject lidocaine prior to the infusion.

Ans: B

Complexity: Moderate

Ahead: Intraosseous Infusion

Subject: Medication Administration

Page: 719

Feedback: Intraosseous Infusion, page 719

74. If the posterior aspect of the leg rapidly becomes edematous during IO infusion, you should:

A) elevate the lower extremity.

B) suspect extravasation of fluid.

C) assume that the leg is fractured.

D) carefully reposition the IO needle.

Ans: B

Complexity: Moderate

Ahead: Intraosseous Infusion

Subject: Medication Administration

Page: 720

Feedback: Intraosseous Infusion, page 720

75. Which of the following statements regarding osteomyelitis is NOT correct?

A) Osteomyelitis is the result of an infection.

B) Osteomyelitis is an inflammation of the bone and muscle.

C) Osteomyelitis occurs in up to 15% of IO insertions.

D) The risk of osteomyelitis during IO infusion is relatively low.

Ans: C

Complexity: Moderate

Ahead: Intraosseous Infusion

Subject: Medication Administration

Page: 720

Feedback: Intraosseous Infusion, page 720

76. IO cannulation is contraindicated in all of the following situations, EXCEPT:

A) penetrating thoracic trauma.

B) bilateral knee replacements.

C) known osteogenesis imperfecta.

D) the presence of a peripheral IV line.

Ans: A

Complexity: Moderate

Ahead: Intraosseous Infusion

Subject: Medication Administration

Page: 720

Feedback: Intraosseous Infusion, page 720

77. Medical control orders you to administer 500 mL of normal saline over 1 hour to your patient. You have a macrodrip administration set that allows 15 gtts/mL and an 18-gauge catheter in the patient's antecubital vein. At how many gtts/min should you set the IV flow rate?

A) 100

B) 110

C) 125

D) 150

Ans: C

Complexity: Moderate

Ahead: Calculating IV Infusion Rates

Subject: Medication Administration

Page: 727

Feedback: Calculating IV Infusion Rates, page 727

78. A severely burned patient requires 4,500 mL of isotonic crystalloid solution over 8 hours, so medical control orders you to begin the infusion in the field. If your administration set allows 10 gtts/mL, at how many gtts/min will you set the IV flow rate in order to deliver the ordered amount of fluid?

A) 76

B) 84

C) 88

D) 94

Ans: D

Complexity: Moderate

Ahead: Calculating IV Infusion Rates

Subject: Medication Administration

Page: 727

Feedback: Calculating IV Infusion Rates, page 727

79. 1 mg is equal to \_\_\_\_\_\_ mcg.

A) 10

B) 100

C) 1,000

D) 10,000

Ans: C

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Page: 722

Feedback: Medication Administration, page 722

80. 1 cc is equal to \_\_\_\_\_ mL.

A) 1

B) 10

C) 100

D) 1,000

Ans: A

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Page: 722

Feedback: Medication Administration, page 722

81. 0.2 mg equals:

A) 0.02 g.

B) 200 mcg.

C) 0.02 mcg.

D) 2,000 mcg.

Ans: B

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Pages: 722, 724

Feedback: Medication Administration, pages 722, 724

82. Which of the following represents the appropriate metric units of weight from largest to smallest?

A) g, kg, mcg, mg

B) kg, g, mg, mcg

C) mg, g, mcg, kg

D) kg, mg, g, mcg

Ans: B

Complexity: Moderate

Ahead: Medication Administration

Subject: Medication Administration

Page: 722

Feedback: Medication Administration, page 722

83. 100 mL is equal to:

A) 0.1 L

B) 0.01 L

C) 0.001 L

D) 0.0001 L

Ans: A

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Pages: 722–723

Feedback: Medication Administration, pages 722–723

84. To convert 2.5 liters to milliliters, you should:

A) divide 2.5 by 500.

B) multiply 2.5 by 500.

C) divide 2.5 by 1,000.

D) multiply 2.5 by 1,000.

Ans: D

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Page: 723

Feedback: Medication Administration, page 723

85. A 130-lb patient weighs \_\_\_\_ kg.

A) 49

B) 55

C) 59

D) 62

Ans: C

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Page: 724

Feedback: Medication Administration, page 724

86. An 80-kg patient weighs \_\_\_\_ lb.

A) 176

B) 179

C) 182

D) 185

Ans: A

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Page: 724

Feedback: Medication Administration, page 724

87. A patient with a core body temperature of 35° on the Celsius scale has a core body temperature of \_\_\_\_ on the Fahrenheit scale.

A) 94°

B) 95°

C) 96°

D) 97°

Ans: B

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Page: 725

Feedback: Medication Administration, page 725

88. On the Fahrenheit scale, water freezes at:

A) 0°.

B) 32°.

C) 40°.

D) 45°.

Ans: B

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Page: 725

Feedback: Medication Administration, page 725

89. A prefilled syringe of lidocaine contains 100 mg/5 mL of volume. How many milligrams per milliliter (mg/mL) are present in the syringe?

A) 5

B) 10

C) 20

D) 25

Ans: C

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Pages: 725–726

Feedback: Medication Administration, pages 725–726

90. To administer a drug, you must know the weight of the drug that is present in:

A) 1 L.

B) 1 mL.

C) 100 mL.

D) 0.1 mL.

Ans: B

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Page: 725

Feedback: Medication Administration, page 725

91. If a 10-mL vial contains 1 mg of a drug, how many mg/mL are present?

A) 0.1

B) 0.01

C) 0.001

D) 0.0001

Ans: A

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Pages: 725–726

Feedback: Medication Administration, pages 725–726

92. How many mg/mL are contained in a prefilled syringe of 50% dextrose with a concentration of 25 g/50 mL?

A) 100

B) 250

C) 500

D) 1,000

Ans: C

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Pages: 725–726

Feedback: Medication Administration, pages 725–726

93. A 1% lidocaine (Xylocaine) concentration contains:

A) 1 mg/10 mL.

B) 100 mg/100 mL.

C) 500 mg/50 mL.

D) 1,000 mg/100 mL.

Ans: D

Complexity: Easy

Ahead: Medication Administration

Subject: Medication Administration

Page: 725

Feedback: Medication Administration, page 725

94. Your protocols call for you to administer 5 mg of diazepam (Valium) to a patient who is seizing. You have a 10-mL vial of Valium that contains 10 mg. How many milliliters will you give?

A) 0.5 mL

B) 5 mL

C) 0.25 mL

D) 10 mL

Ans: B

Complexity: Moderate

Ahead: Medication Administration

Subject: Medication Administration

Pages: 725–726

Feedback: Medication Administration, pages 725–726

95. A hypoglycemic patient requires IV dextrose. Medical control orders you to administer 25 mL. You have a prefilled syringe of 50% dextrose that contains 25 g/50 mL. How much dextrose will you give?

A) 500 mg

B) 12.5 g

C) 5,000 mg

D) 50 g

Ans: B

Complexity: Moderate

Ahead: Medication Administration

Subject: Medication Administration

Pages: 725–726

Feedback: Medication Administration, pages 725–726

96. A 2-year-old girl in cardiac arrest requires epinephrine at a dose of 0.01 mg/kg. The mother tells you that her daughter weighs about 25 lb. How much epinephrine will you administer?

A) 0.1 mg

B) 0.15 mg

C) 0.01 mg

D) 0.2 mg

Ans: A

Complexity: Moderate

Ahead: Medication Administration

Subject: Medication Administration

Pages: 726–727

Feedback: Medication Administration, pages 726–727

97. Following return of spontaneous circulation, you are ordered to begin a lidocaine infusion at 3 mg/min on your 50-year-old patient. You add 2 g of lidocaine to a 500-mL bag of normal saline and are using a microdrip administration set. At how many drops per minute (gtts/min) will you set the IV flow rate?

A) 15

B) 30

C) 45

D) 60

Ans: C

Complexity: Moderate

Ahead: Medication Administration

Subject: Medication Administration

Pages: 727–728

Feedback: Medication Administration, pages 727–728

98. A nonhypovolemic patient is severely hypotensive and requires a dopamine infusion at 5 mcg/kg/min. The patient's estimated weight is 190 lb. You add 800 mg of dopamine to a 500-mL bag of normal saline and are using a microdrip administration set. At how many drops per minute (gtts/min) will you set the IV flow rate?

A) 10

B) 12

C) 14

D) 16

Ans: D

Complexity: Moderate

Ahead: Medication Administration

Subject: Medication Administration

Pages: 728–729

Feedback: Medication Administration, pages 728–729

99. If you receive a medication order from online medical control that seems inappropriate to you, you should:

A) refuse to administer the medication.

B) ask the physician to repeat the order.

C) look up the correct dose in your field guide.

D) administer the drug as ordered and document it.

Ans: B

Complexity: Moderate

Ahead: Ensuring Correct and Safe Medication Administration

Subject: Medication Administration

Pages: 687–688

Feedback: Ensuring Correct and Safe Medication Administration, pages 687–688

100. When administering a medication, the paramedic:

A) cannot be held legally accountable if a physician gives an inappropriate drug order and the paramedic follows the order.

B) is just as responsible for the administration of the drug and its possible consequences as the physician giving the order.

C) does not need the patient's consent to administer the medication, but must obtain consent for the dose that is ordered.

D) should obtain a full set of vital signs within 15 minutes of administering the medication, regardless of the type of medication.

Ans: B

Complexity: Moderate

Ahead: Ensuring Correct and Safe Medication Administration

Subject: Medication Administration

Pages: 687–688

Feedback: Ensuring Correct and Safe Medication Administration, pages 687–688

101. A drug that is contraindicated for a particular patient:

A) will likely result in immediate death.

B) is usually given at half its usual dose.

C) should be given with extreme caution.

D) should not be administered to the patient.

Ans: D

Complexity: Moderate

Ahead: Ensuring Correct and Safe Medication Administration

Subject: Medication Administration

Page: 688

Feedback: Ensuring Correct and Safe Medication Administration, page 688

102. Medical asepsis is MOST accurately defined as:

A) ensuring that all patient care supplies remain sterile.

B) the practice of preventing contamination of the patient.

C) the destruction of all living organisms using heat or gas.

D) preventing infection of the patient by using clean supplies.

Ans: B

Complexity: Easy

Ahead: Medical Asepsis

Subject: Medication Administration

Page: 689

Feedback: Medical Asepsis, page 689

103. The site on a patient's forearm that has been cleaned with iodine and alcohol before starting an IV is said to be:

A) sterile.

B) autoclaved.

C) medically clean.

D) disinfected.

Ans: C

Complexity: Easy

Ahead: Medical Asepsis

Subject: Medication Administration

Page: 689

Feedback: Medical Asepsis, page 689

104. In contrast to an antiseptic, a disinfectant is:

A) toxic to living tissues and should never be used on a patient.

B) capable of destroying pathogens but is not toxic to living tissues.

C) not intended to be used on nondisposable patient care equipment.

D) used to cleanse an area before performing an invasive procedure.

Ans: A

Complexity: Easy

Ahead: Medical Asepsis

Subject: Medication Administration

Page: 689

Feedback: Medical Asepsis, page 689

105. Which of the following statements regarding sharps containers is correct?

A) There should be at least one sharps container in the back of the ambulance.

B) A small sharps container is ideal for carrying in your cargo pants or pocket.

C) Needles should be placed in a sharps container after patient care is complete.

D) Sharps containers should be puncture proof and should bear a biohazard logo.

Ans: D

Complexity: Moderate

Ahead: Standard Precautions and Contaminated Equipment Disposal

Subject: Medication Administration

Page: 690

Feedback: Standard Precautions and Contaminated Equipment Disposal, page 690

106. The \_\_\_\_\_\_\_\_ route of medication administration refers to any route in which medication is absorbed through some portion of the gastrointestinal tract.

A) oral

B) enteral

C) rectal

D) gastric tube

Ans: B

Complexity: Easy

Ahead: Enteral Medication Administration

Subject: Medication Administration

Page: 729

Feedback: Enteral Medication Administration, page 729

107. If you give a medication via the oral route in the prehospital setting, you should give it early because:

A) toxic levels are reached easily.

B) absorption via this route is slow.

C) its onset of action is unpredictable.

D) the patient may aspirate the medication.

Ans: B

Complexity: Moderate

Ahead: Enteral Medication Administration

Subject: Medication Administration

Page: 729

Feedback: Enteral Medication Administration, page 729

108. In which of the following cases would the paramedic MOST likely instill medication down a gastric tube?

A) Toxic ingestion in patients with a depressed swallowing mechanism

B) In the absence of vascular access in a patient who is clinically unstable

C) Acute overdose to lavage the stomach and prevent digestion of the drug

D) To instill nutritional substances in patients who cannot swallow effectively

Ans: A

Complexity: Moderate

Ahead: Enteral Medication Administration

Subject: Medication Administration

Page: 730

Feedback: Enteral Medication Administration, page 730

109. Which of the following medications is appropriate to administer via the rectal route?

A) Aspirin

B) Glucagon

C) Furosemide (Lasix)

D) Diazepam (Valium)

Ans: D

Complexity: Moderate

Ahead: Enteral Medication Administration

Subject: Medication Administration

Page: 730

Feedback: Enteral Medication Administration, page 730

110. When injecting a medication via the rectal route, you should:

A) instruct the patient not to bear down.

B) use a large uncuffed endotracheal tube.

C) ensure that the patient is fully conscious.

D) recall that the rectal mucosae are relatively avascular.

Ans: A

Complexity: Easy

Ahead: Enteral Medication Administration

Subject: Medication Administration

Page: 732

Feedback: Enteral Medication Administration, page 732

111. Compared with enterally administered medications, parenterally administered medications:

A) require the presence of a peripheral IV line.

B) must pass through the gastrointestinal tract to be effective.

C) are absorbed into the central circulation at a more predictable rate.

D) achieve their therapeutic effects much more slowly and are less predictable.

Ans: C

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 732

Feedback: Parenteral Medication Administration, page 732

112. The \_\_\_\_\_\_\_\_\_\_\_ route is the MOST commonly used medication route in the prehospital setting.

A) IO

B) IV

C) percutaneous

D) intramuscular

Ans: B

Complexity: Easy

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 732

Feedback: Parenteral Medication Administration, page 732

113. When drawing medication from an ampule, you should:

A) cleanse the rubber stopper with an alcohol prep.

B) always use a 14- or 16-gauge hypodermic needle.

C) gently tap the ampule if medication is stuck in the neck.

D) inject air into the ampule before withdrawing the medication.

Ans: C

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 733

Feedback: Parenteral Medication Administration, page 733

114. When using a vial of medication, you must FIRST determine:

A) the needle gauge that you will need and the appropriate size syringe.

B) how much of the drug is needed and how many doses are in the vial.

C) if the medication has completely settled to the base of the container.

D) the appropriate amount of air that you will need to inject into the vial.

Ans: B

Complexity: Easy

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 734

Feedback: Parenteral Medication Administration, page 734

115. Drug reconstitution involves:

A) shaking a medication vial vigorously so that the drug is appropriately separated from its liquid base.

B) adding 3 mL to 5 mL of sterile saline to an already existing liquid medication to achieve the appropriate concentration.

C) injecting a certain volume of a medication into a 500-mL bag of normal saline to achieve the correct concentration.

D) injecting diluent or sterile water from one vial into the vial that contains the powdered form of the medication.

Ans: D

Complexity: Easy

Ahead: Parenteral Drug Administration

Subject: Medication Administration

Page: 734

Feedback: Parenteral Medication Administration, page 734

116. The main benefit of using a prefilled medication syringe is that:

A) it does not require you to draw up each individual medication dose.

B) it is made of plastic and is less likely to break or get damaged.

C) there is no need to expel air from the syringe prior to giving the drug.

D) all of the contents of a prefilled syringe are administered at one time.

Ans: A

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 735

Feedback: Parenteral Medication Administration, page 735

117. What medication route is typically used during allergy testing or when performing a skin test for tuberculosis?

A) Intradermal

B) Subcutaneous

C) Intramuscular

D) Percutaneous

Ans: A

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 737

Feedback: Parenteral Medication Administration, page 737

118. Which of the following statements regarding subcutaneous medication administration is correct?

A) A subcutaneous injection involves using a 20- or 21-gauge needle.

B) The needle is inserted at a 90° angle during a subcutaneous injection.

C) Volumes of a drug given subcutaneously are typically 1 mL or less.

D) The rectus femoris muscle is a common site for subcutaneous injections.

Ans: C

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 737

Feedback: Parenteral Medication Administration, page 737

119. When administering a medication via the intramuscular route, you should:

A) pinch the skin over the injection site and insert the needle at a 45° angle.

B) stretch the skin over the injection site and insert the needle at a 90° angle.

C) use a 24- to 26-gauge ½ to 1 needle to inject medication into the muscle.

D) use a 21-gauge needle to inject medication into the fatty tissue of the arm.

Ans: B

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 741

Feedback: Parenteral Medication Administration, page 741

120. After inserting the needle during an intramuscular injection, but before delivering the medication, you should:

A) ensure that you stretch the skin taut.

B) inquire about any medication allergies.

C) look in the barrel of the syringe for blood.

D) pull back on the plunger to aspirate for blood.

Ans: D

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 741

Feedback: Parenteral Medication Administration, page 741

121. The IV route is the fastest route of medication administration because:

A) veins do not collapse during hypoperfusion.

B) it bypasses most barriers to drug absorption.

C) medications immediately enter the right atrium.

D) blood pressure expedites absorption of the drug.

Ans: B

Complexity: Easy

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 740

Feedback: Parenteral Medication Administration, page 740

122. Neither subcutaneous nor intramuscular injections should be given to patients:

A) with inadequate peripheral perfusion.

B) who are morbidly obese or very thin.

C) who require less than 5 mL of a drug.

D) with a systolic BP greater than 140 mm Hg.

Ans: A

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 740

Feedback: Parenteral Medication Administration, page 740

123. When administering a drug via IV bolus, you are giving the drug:

A) slowly.

B) rapidly.

C) over time.

D) in one mass.

Ans: D

Complexity: Easy

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 740

Feedback: Parenteral Medication Administration, page 740

124. Failure to pinch the tubing proximal to the injection port when administering a drug via the IV bolus route will:

A) cause the medication to enter the patient's central circulation rapidly.

B) result in too much of the medication entering the patient's circulation.

C) cause the medication to flow up the tubing and away from the patient.

D) negate the need to follow the IV bolus with a 20-mL normal saline flush.

Ans: C

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 742

Feedback: Parenteral Medication Administration, page 742

125. Which of the following is NOT always considered a mandatory action after administering a medication via the enteral or parenteral route?

A) Contacting online medical control

B) Monitoring the patient's condition

C) Immediately disposing of any sharps

D) Documenting the time of administration

Ans: A

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 742

Feedback: Parenteral Medication Administration, page 742

126. Although medications that are used for maintenance infusions are commonly premixed and prepackaged, you must still:

A) add 100 mL of sterile saline to dilute the premixed medication.

B) draw 20 mL of fluid from the premixed solution to use as a flush.

C) be aware of the concentration of the drug in the premixed solution.

D) use the drug within 36 hours after removing it from its foil covering.

Ans: C

Complexity: Moderate

Ahead: Parenteral Medications

Subject: Medication Administration

Page: 743

Feedback: Parenteral Medication Administration, page 743

127. Electromechanical infusion pumps are MOST beneficial when administering a medication maintenance infusion because:

A) an alarm sounds if there is any air in the tubing.

B) these devices allow for precise medication dosing.

C) these devices totally eliminate the risk of infiltration of a vein.

D) these devices will accommodate a needleless syringe.

Ans: B

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 746

Feedback: Parenteral Medication Administration, page 746

128. Which of the following steps is usually necessary when administering a drug via the IO route, but not necessary when administering a drug via the IV bolus route?

A) Rapid administration of any drug that you give

B) Placing a pressure infuser device around the IV bag

C) Flushing with 20 mL of saline after the drug is given

D) Clamping off the tubing proximal to the injection port

Ans: B

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 749

Feedback: Parenteral Medication Administration, page 749

129. All of the following medications or preparations are commonly given via the transdermal route, EXCEPT:

A) nicotine.

B) analgesia.

C) nitroglycerin.

D) acetaminophen.

Ans: D

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 749

Feedback: Parenteral Medication Administration, page 749

130. Medication absorption through a nitroglycerin patch would be increased if the patient has:

A) scar tissue under the patch.

B) peripheral vascular disease.

C) a low systolic blood pressure.

D) skin that is thin or nonintact.

Ans: D

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 749

Feedback: Parenteral Medication Administration, page 749

131. When administering sublingual nitroglycerin to a patient, you should do all of the following, EXCEPT:

A) instruct the patient to chew and swallow the tablet.

B) perform a focused history and physical examination.

C) ensure that the patient's mucous membranes are moist.

D) thoroughly assess the patient for any transdermal patches.

Ans: A

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 752

Feedback: Parenteral Medication Administration, page 752

132. Typically, intranasal medications require:

A) dilution in at least 10 mL of volume.

B) a quarter of what is normally given IV.

C) 2 to 2.5 times the standard IV dose.

D) dilution in no more than 2 mL of volume.

Ans: C

Complexity: Moderate

Ahead: Parenteral Medications

Subject: Medication Administration

Page: 753

Feedback: Parenteral Medication Administration, page 753

133. The MOST common inhaled medication is:

A) Alupent.

B) oxygen.

C) Ventolin.

D) Bronkosol.

Ans: B

Complexity: Easy

Ahead: Medications Administered by the Inhalation Route

Subject: Medication Administration

Page: 753

Feedback: Parenteral Medication Administration, page 753

134. Which of the following inhaled medications is NOT a beta2 agonist bronchodilator?

A) Proventil

B) Albuterol

C) Isoetharine

D) Ipratropium

Ans: D

Complexity: Moderate

Ahead: Medications Administered by the Inhalation Route

Subject: Medication Administration

Page: 753

Feedback: Medications Administered by the Inhalation Route, page 753

135. When administering a medication via small-volume nebulizer, you should add \_\_\_ mL of sterile saline to the medication and set the oxygen flow rate at \_\_\_ L/min.

A) 1, 3

B) 2, 4

C) 3, 6

D) 6, 10

Ans: C

Complexity: Moderate

Ahead: Medications Administered by the Inhalation Route

Subject: Medication Administration

Page: 758

Feedback: Medications Administered by the Inhalation Route, page 758

136. Medication routes, from slowest to fastest rates of absorption, are:

A) subcutaneous, intramuscular, sublingual, inhalation, intravenous.

B) intramuscular, sublingual, subcutaneous, intravenous, inhalation.

C) intravenous, inhalation, sublingual, subcutaneous, intramuscular.

D) subcutaneous, sublingual, inhalation, intramuscular, intravenous.

Ans: A

Complexity: Moderate

Ahead: Rates of Medication Absorption

Subject: Medication Administration

Page: 762

Feedback: Rates of Medication Absorption, page 762

137. A 71-year-old woman presents with tachypnea, flushed skin, and postural hypotension. Which of the following chief complaints is MOST consistent with these clinical findings?

A) Diarrhea

B) Renal failure

C) Acute weight gain

D) Shortness of breath

Ans: A

Complexity: Difficult

Ahead: Cellular Fluid Composition and Status

Subject: Medication Administration

Page: 691

Feedback: Cellular Fluid Composition and Status, page 691

138. You are treating a 29-year-old man who was struck in the abdomen with a steel pipe. He is confused, has absent radial pulses, and has a blood pressure of 78/50 mm Hg. You should administer:

A) 1 mL of isotonic crystalloid for every 3 mL of estimated internal blood loss.

B) 1,000 mL of normal saline or lactated Ringer solution and then reassess him.

C) enough isotonic crystalloid to increase his systolic BP to at least 120 mm Hg.

D) normal saline fluid boluses until his mental status and radial pulses improve.

Ans: D

Complexity: Difficult

Ahead: IV Fluid Composition

Subject: Medication Administration

Page: 692

Feedback: IV Fluid Composition, page 692

139. You are transporting a 1-year-old child with moderate dehydration. Your estimated time of arrival at the hospital is 45 minutes. When administering an isotonic crystalloid solution to this child, you should:

A) deliver the crystalloid fluid boluses with blood tubing and frequently auscultate the child's breath sounds.

B) use a Volutrol administration set and fill the calibrated drip chamber with a precalculated volume of fluid.

C) give 30 mL/kg crystalloid fluid boluses through a microdrip administration set until the child's condition improves.

D) set the IV flow rate to KVO but be prepared to infuse 10 mL/kg boluses if the child's condition deteriorates.

Ans: B

Complexity: Difficult

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 697

Feedback: IV Techniques and Administration, page 697

140. While attempting to start an IV on a patient with large protruding veins, you note that the vein rolls from side to side during your cannulation attempt. The BEST way to remedy this situation is to:

A) apply downward manual traction below the venipuncture site to stabilize the vein in position.

B) remove the proximal constricting band to improve venous return and decrease the size of the vein.

C) use a through-the-needle IV catheter in order to gain better control over the rolling vein.

D) place a chemical heat pack over the vein for 10 minutes in order to decrease movement of the vein.

Ans: A

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Page: 699

Feedback: IV Techniques and Administration, page 699

141. An elderly man with congestive heart failure and shortness of breath requires an IV line in case medication administration is necessary. Which of the following IV catheters is MOST appropriate to use when starting the IV?

A) 20 gauge, 1 ¼ inch

B) 18 gauge, 2 ¼ inch

C) 16 gauge, 1 ¼ inch

D) 14 gauge, 2 ¼ inch

Ans: A

Complexity: Moderate

Ahead: IV Techniques and Administration

Subject: Medication Administration

Pages: 699–700

Feedback: IV Techniques and Administration, pages 699–700

142. After starting an IV in an arm vein of a patient with chest pain and properly securing the catheter in place, you note that the IV is not flowing. You should:

A) gently manipulate the catheter and reassess the flow.

B) discontinue the IV and reestablish it in the other arm.

C) ensure that the constricting band has been removed.

D) use a pressure infuser device to improve the IV flow.

Ans: C

Complexity: Moderate

Ahead: Factors Affecting IV Flow Rates

Subject: Medication Administration

Page: 708

Feedback: Factors Affecting IV Flow Rates, page 708

143. After inserting an 18-gauge over-the-needle catheter into the hand vein of a 30-year-old woman and securing the IV line in place, you note edema at the catheter site despite continued flow of the IV. The woman complains of pain and tightness around the IV site. You should:

A) apply direct pressure to the venipuncture site and elevate her extremity.

B) reapply the proximal constricting band to reduce edema at the catheter site.

C) recognize that infiltration has occurred and immediately discontinue the IV.

D) discontinue the IV and circumferentially wrap a dressing around the extremity.

Ans: C

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 709

Feedback: Potential Complications of IV Therapy, page 709

144. Shortly after establishing an IV line of normal saline, your patient complains of a burning sensation along the course of the vein. You should:

A) increase the IV flow rate until the patient expresses relief.

B) observe the patient for signs and symptoms of an allergic reaction.

C) inject 10 mL of lidocaine into the IV line to provide pain relief.

D) immediately discontinue the IV and reestablish it in another location.

Ans: B

Complexity: Difficult

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 709

Feedback: Potential Complications of IV Therapy, page 709

145. Approximately 20 minutes after starting an IV on a 40-year-old man, he begins complaining of a backache and chills. You should be MOST suspicious of:

A) an air embolus.

B) an allergic reaction.

C) circulatory overload.

D) a pyrogenic reaction.

Ans: D

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 711

Feedback: Potential Complications of IV Therapy, page 711

146. As you are preparing to start an IV on a young man, he sees the needle, becomes acutely diaphoretic, and passes out. After placing him in the appropriate position, you should:

A) administer high-flow oxygen.

B) assess his blood glucose level.

C) start the IV in case he needs fluids.

D) obtain a complete set of vital signs.

Ans: A

Complexity: Moderate

Ahead: Potential Complications of IV Therapy

Subject: Medication Administration

Page: 711

Feedback: Potential Complications of IV Therapy, page 711

147. While establishing IO access in a critically ill patient, you locate the appropriate anatomic landmark, cleanse the site, and insert the IO catheter at a 45° angle. After attaching the IV line and turning the flow on, you note edema developing on the opposite side of the extremity. What has MOST likely happened?

A) Extravasation due to an inappropriate angle of IO catheter insertion

B) Inadvertent entry of a large vein, which has caused infiltration

C) Fracture of the bone with leakage of bone marrow into the soft tissue

D) Acute osteomyelitis secondary to inappropriate cleansing of the site

Ans: A

Complexity: Moderate

Ahead: Intraosseous Infusion

Subject: Medication Administration

Page: 720

Feedback: Intraosseous Infusion, page 720

148. Medical control orders an infusion of 1 L of normal saline over 4 hours during a long-distance transport. You have a 1,000-mL bag of normal saline and a macrodrip administration set that allows 10 gtts/mL. At how many gtts/min will you set the IV flow rate?

A) 29

B) 36

C) 42

D) 50

Ans: C

Complexity: Difficult

Ahead: Calculating Fluid Infusion Rates

Subject: Medication Administration

Page: 727

Feedback: Calculating Fluid Infusion Rates, page 727

149. During the attempted resuscitation of a man in V-Fib cardiac arrest, your protocols call for the administration of 1.5 mg/kg of lidocaine. You have prefilled syringes of lidocaine in a concentration of 100 mg/5 mL. The patient weighs 180 lb. How many milliliters will you administer?

A) 5.5

B) 6.2

C) 6.5

D) 6.8

Ans: B

Complexity: Difficult

Ahead: Medication Administration

Subject: Medication Administration

Pages: 725–726

Feedback: Medication Administration, pages 725–726

150. An unconscious 4-year-old child with a blood glucose reading of 30 mg/dL requires 2 mL/kg of D50. The child's estimated weight is 35 lb. You have a prefilled syringe of D50 at a concentration of 25 g/50 mL. How many grams of dextrose will you administer to the child?

A) 12,400

B) 13,800

C) 14,000

D) 16,000

Ans: D

Complexity: Difficult

Ahead: Medication Administration

Subject: Medication Administration

Pages: 726–727

Feedback: Medication Administration, pages 726–727

151. Immediately after administering intramuscular epinephrine to a patient with an allergic reaction, you should:

A) dispose of the needle and syringe in a sharps container.

B) monitor the patient and obtain another set of vital signs.

C) reassess the patient for signs of clinical improvement.

D) document the medication name and time of administration.

Ans: A

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 741

Feedback: Parenteral Medication Administration, page 741

152. You reassess your patient after administering a medication via the IV bolus route and note that his clinical condition is unchanged. What is the LEAST likely cause of the patient's unchanged condition?

A) The patient may require another dose of the same drug.

B) The dose was too low for the patient's clinical condition.

C) The IV tubing was occluded proximal to the injection port.

D) You diluted the bolus by following it with a 20-mL saline flush.

Ans: C

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 742

Feedback: Parenteral Medication Administration, page 742

153. You are preparing to administer a dopamine infusion to a severely hypotensive patient. What is the concentration on hand if you add 800 mg of dopamine to a 500-mL bag of normal saline?

A) 1.6 mcg/mL

B) 1,600 mg/mL

C) 1,600 mcg/mL

D) 0.16 mg/mL

Ans: C

Complexity: Moderate

Ahead: Medication Administration

Subject: Medication Administration

Page: 725

Feedback: Medication Administration, page 725

154. A 60-year-old woman with acute chest discomfort requires 0.4 mg of sublingual nitroglycerin. Prior to administering the medication, you should:

A) assess her mucous membranes to ensure they are dry.

B) ask her if she wears a transdermal nitroglycerin patch.

C) ensure that her systolic BP is greater than 120 mm Hg.

D) determine to which hospital she wishes to be transported.

Ans: B

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 749

Feedback: Parenteral Medication Administration, page 749

155. You are treating an unconscious 39-year-old man who overdosed on heroin. You are unable to establish an IV line because his veins are severely sclerosed, and your protocols do not allow for IO cannulation. You should:

A) assist ventilations and transport immediately.

B) use the subcutaneous route to administer Narcan.

C) intubate the patient and give Narcan via the ET tube.

D) administer naloxone via the mucosal atomizer device.

Ans: D

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Page: 753

Feedback: Parenteral Medication Administration, page 753

156. To make push-dose epinephrine, you should:

A) dilute 10 mL of epinephrine into 100 mL normal saline.

B) place 1 mL of epinephrine into 9 mL of normal saline.

C) inject 1 mL of epinephrine into a 500 mL bag of normal saline

D) achieve a concentration of 0.1 mcg of epinephrine in 10 mL.

Ans: B

Complexity: Moderate

Ahead: Parenteral Medication Administration

Subject: Medication Administration

Pages: 736–737

Feedback: Parenteral Medication Administration, pages 736–737

157. When accessing a tunneling device, you should:

A) ensure that all lumens are open in order to prevent an air embolism.

B) withdraw a minimum of 10 mL of blood before injecting any medication.

C) infuse at least 50 mL of normal saline before administering a medication.

D) flush the device with 10 mL of normal saline before withdrawing blood.

Ans: B

Complexity: Moderate

Ahead: Long-Term Vascular Access Devices

Subject: Medication Administration

Pages: 759–760

Feedback: Long-Term Vascular Access Devices, pages 759–760