1. For a person to make a fist, which of the following must occur?

1. The central nervous system must send a message through the spinal cord and then through the peripheral nerves.
2. The central nervous system must send a message through the spinal cord and then through the autonomic nervous system.
3. The peripheral nervous system must send a message to the brain and then back through the peripheral nervous system.
4. The muscles must signal the brain to send a message through the autonomic nervous system.

Answer: a

Objective: 21-1

Reference: 700

2. Based on the structure of the nervous system, which of the following statements is true?

1. A stroke represents an injury to the peripheral nervous system.
2. A gunshot wound to the spinal cord will directly damage the peripheral nerves.
3. A deep laceration to an arm can sever peripheral nerves.
4. Numbness of a leg secondary to a fracture is caused by a central nervous system injury.

Answer: c

Objective: 21-1

Reference: 700

3. Which of the following signs or symptoms might be evident for an injury to the autonomic nervous system?

1. Vomiting
2. Elevated heart rate
3. Inability to move facial muscles
4. Trouble remembering one’s own name

Answer: b

Objective: 21-5

Reference: 700

4. You are notified that a patient is coming to the first-aid room with bruising to the lumbar area of the back. Based on this statement, you would expect to find bruising in which area?

1. The upper back
2. The neck
3. The lower back
4. The buttocks

Answer: c

Objective: 21-3

Reference: 711

5. You respond to an accident at which a male patient is complaining of severe back pain. He informs you that his back pain is coming from a recent fracture of his coccyx. Based on this information, what area of the back would the pain be emanating from?

1. The neck
2. The upper back
3. The tailbone
4. The lower back

Answer: c

Objective: 21-3

Reference: 711

6. A patient involved in a motor-vehicle collision has suffered the separation of a rib from a spinal vertebra. Based on the anatomy of the spine, where has this injury occurred?

1. The lumbar spine
2. The cervical spine
3. The middle spine
4. The thoracic spine

Answer: d

Objective: 21-3

Reference: 712

7. Based on the anatomy of the spine, which one of the following injuries is possible?

1. A fracture of the ninth cervical vertebra
2. A dislocation of lumbar vertebra 7
3. A disk injury between thoracic vertebrae 11 and 12
4. A compression fracture of lumbar vertebra 12

Answer: c

Objective: 21-5

Reference: 699

8. A young intoxicated male patient cannot move his lower extremities after diving into the shallow end of a pool and hitting the bottom with his head. Which of the following mechanisms is most likely to be responsible for this injury?

1. Compression
2. Rotation
3. Distraction
4. Penetration

Answer: a

Objective: 21-4

Reference: 702

9. A young female was involved in a motor-vehicle collision in which her car struck the rear end of another vehicle. As a result of the impact, her neck muscles were overstretched and torn. She is complaining of neck pain. Based on this mechanism, the most likely type of injury she has is:

1. neural ischemia.
2. whiplash.
3. translational strain.
4. a Jefferson fracture.

Answer: b

Objective: 21-6

Reference: 711

10. While performing a primary assessment on a patient who has an isolated spinal cord injury, you note that he is in severe respiratory distress and struggling to breathe. Where should you suspect that the spinal cord injury has occurred?

1. The diaphragm
2. The cervical spine
3. The thoracic spine
4. The lumbar spine

Answer: b

Objective: 21-5

Reference: 712

11. Which of the following signs or symptoms best indicates that a patient has suffered an injury to the thoracic spine?

1. Altered mental status
2. Paralysis of the arms
3. Tingling in the legs
4. Cool and diaphoretic skin

Answer: c

Objective: 21-5

Reference: 718

12. An elderly patient has fallen down a flight of stairs and is complaining of neck and back pain and weakness to both legs. Your primary assessment reveals no life threats to the airway, breathing, or circulation. Manual in-line spinal stabilization is being maintained. Which of the following actions should you take next?

1. apply high-flow oxygen and move the patient to a stretcher for transport.
2. complete a secondary assessment looking for injuries.
3. place an oral airway and begin assisting ventilation.
4. place a cervical collar on the patient and immobilize him to a long spine board.

Answer: b

Objective: 21-8

Reference: 715

13. Which of the following questions or statements indicates that an OEC Technician is correctly assessing motor function in the arms of a patient with potential spine injuries?

1. “Can you tell me what finger I am touching?”
2. “Can you hold up two fingers on each hand?"
3. “I am going to move your arm; tell me if it hurts.”
4. “I am going to feel for a pulse in your wrist.”

Answer: b

Objective: 21-8

Reference: 716

14. Which of the following statements about the care and treatment of a patient with a spinal injury in a prehospital setting is true?

1. Prehospital care for a patient with a spinal injury involves correcting life-threatening injuries and limiting secondary injury.
2. It is important to identify the site of spinal injury so that proper prehospital care can be rendered.
3. Before transporting a critically injured patient with a spinal injury, OEC Technicians must perform a detailed head-to-toe neurological assessment.
4. If a patient with a possible spinal injury is in shock, it is permissible to forego immobilization because uses up time during the golden hour.

Answer: a

Objective: 21-8

Reference: 719

15. Which of the following signs is a characteristic sign that may be seen during a secondary assessment of patients with spinal cord injury?

1. Normal skin color and complaint of headache and nausea
2. Flushed skin color below the level of the injury and impairment or absence of sensation and movement
3. Bruising on the back and on the abdomen at the level of the injury, with normal or impaired sensation
4. Flushed skin color at the level of pinpoint back pain

Answer: b

Objective: 21-6

Reference: 718

16. A patient involved in an accident has his head positioned so that his left cheek is touching his left shoulder. He states that he has severe pain in his neck and he cannot move his head. He also states he has no feeling in his arms or legs. You have no equipment. Which of the following is the best course of action?

1. Carefully straighten the head and neck so that a cervical collar can be placed.
2. Stabilize and maintain the head in the position in which the patient is holding it.
3. Avoid using a cervical collar or backboard and transport the patient in his current position.
4. Avoid palpation of the cervical spine and apply a vest-type spinal immobilization device.

Answer: b

Objective: 21-8

Reference: 715

17. A patient is complaining of back pain and numbness in both legs after being thrown from a bicycle. When should you check the motor function, sensory function, and pulses in this patient?

1. Immediately after achieving manual in-line spinal immobilization
2. Immediately after applying a cervical collar
3. During the primary assessment
4. During the secondary assessment

Answer: c

Objective: 21-8

Reference: 714

18. Assessment of the cervical spine of a patient complaining of lower back pain after falling 20 feet reveals no displacement, tenderness, or instability. Accordingly, you should:

1. release manual in-line spinal stabilization.
2. apply a properly sized cervical collar.
3. immobilize the patient to a backboard without a cervical collar.
4. inform the team that immobilization is not needed.

Answer: b

Objective: 21-8

Reference: 714–715

19. A patient with head, neck, and back pain has just been fully immobilized to a long backboard. Which of the following instructions should you provide to your team next?

1. “Loosen the collar so you can palpate the back of the neck.”
2. “Maintain manual in-line spinal stabilization until he is on the stretcher.”
3. “Check for CMS before we move him to the stretcher.”
4. “Remove the chest straps so he can breathe more easily now that his head and legs are secured.”

Answer: c

Objective: 21-9

Reference: 722

20. Which of the following instructions from one OEC Technician to another describes the appropriate application of a cervical spine immobilization collar?

1. “Carefully flex his head forward a little so I can pass the collar underneath his neck.”
2. “Let’s log roll the patient to one side so I can apply a cervical collar.”
3. “Keep his head in neutral position while I apply a cervical collar.”
4. “I need you to extend the patient’s chin backward a little so I can fit the collar under his chin.”

Answer: c

Objective: 21-8

Reference: 715

21. For which of the following patients involved in a motor vehicle collision is the use of a vest-type short immobilization device indicated?

1. A 42-year-old male who was ejected from the vehicle and is lying supine in the roadway complaining of back pain
2. A 25-year-old restrained driver who is responsive and has a history of diabetes
3. A 15-year-old female complaining of neck and back pain who got out of the car and is standing next to it
4. A 33-year-old female in the backseat who complains of neck pain and a headache

Answer: d

Objective: 21-6

Reference: 723

22. A patient with a head and neck injury was sitting found leaning against a tree. You have placed a vest type short immobilization device on the patient. To transport the patient you would:

1. remove the vest-type short immobilization device and secure the patient to a long backboard.
2. immobilize the patient with the vest-type short immobilization device to a long backboard.
3. place the patient in a Semi-Fowler’s position on the stretcher for transport to the hospital.
4. secure the patient with the vest-type short immobilization device on a stretcher in a supine position with the feet elevated.

Answer: b

Objective: 21-9

Reference: 723

23. You are securing a patient to a long backboard. Which of the following lists indicates the appropriate order for securing the straps?

1. Torso, pelvis, legs, head
2. Head, torso, pelvis, legs
3. Head, legs, torso, pelvis
4. Legs, head, torso, pelvis

Answer: a

Objective: 21-9

Reference: 722

24. A patient has just been log rolled and positioned onto the long backboard. Which of the following actions should be performed next?

1. Apply a properly sized cervical collar.
2. Secure the patient’s head.
3. Secure the patient’s chest with straps.
4. Release manual in-line stabilization.

Answer: c

Objective: 21-9

Reference: 722

25. You are maintaining manual in-line stabilization of the cervical spine for a patient being log rolled, transferred, and secured to a long backboard. At what point should you release the manual in-line stabilization?

1. Once the patient has been log rolled onto the long backboard
2. After the patient’s head, chest, and knees have been secured with straps
3. After the patient has been secured to the backboard and transferred to the stretcher
4. After the patient’s head has been secured with a head immobilization device

Answer: d

Objective: 21-9

Reference: 715

26. You have been called to aid a 32-year-old male patient who fell down a flight of stairs. The patient is walking toward you and states that he would like to be looked at because his shoulder and lower back hurt. You immediately apply in-line manual cervical stabilization and your partner examines his back, which reveals no sign of injury. How should you immobilize this patient?

1. Place a cervical collar on the patient, place a long spine board behind him, and then lower him to the ground.
2. Have the patient lie down on the ground and immobilize him in the usual fashion.
3. Place a long board on a stretcher and carefully assist the patient onto the long board.
4. Place a cervical collar on the patient and then transfer him to a stretcher.

Answer: a

Objective: 21-9

Reference: 723

27. Which of the following statements indicates that OEC Technicians are correctly using a vest type short spine immobilization device?

a. The cervical collar is applied after the chest has been secured to the device.

b. The head is secured first, followed by the torso and legs.

c. The head is secured to the device immediately after the cervical collar is applied.

d. The head is secured to the device after the chest has been secured.

Answer: d

Objective: 21-8

Reference: 723

28. You and your partner are preparing to backboard a patient using a vest type short spine immobilization device. After ensuring that inline manual spinal stabilization is being maintained, your next instruction should be:

1. “Let’s get the cervical collar applied before we place the vest.”
2. “Let’s turn the patient away from the tree before applying the vest.”
3. “Let’s check motor, sensory, and pulses in the arms and legs.”
4. “Let’s place the vest on the backboard and carefully move him onto it.”

Answer: c

Objective: 21-8

Reference: 723

29. Which of the following statements about removing a helmet in a prehospital setting is correct?

1. Helmets should be removed only if they are too tight or if spinal immobilization is required.
2. It is acceptable to leave a helmet on a patient if the patient has no airway or breathing problems.
3. Any patient wearing a helmet should have it removed so that the airway and breathing can be properly assessed.
4. Helmets should never be removed, so OEC Technicians must be creative in working around the obstacle of a helmet while providing care.

Answer: b

Objective: 21-10

Reference: 724

30. A 2-year-old boy fell down a flight of stairs. Which of the following instructions would you provide to other patrollers who are immobilizing the patient?

1. “After he is on the board, place a towel behind his head to keep his airway open.”
2. “It is better if the collar is a little too big because it will be more comfortable for him.”
3. “Let’s place a folded towel under his shoulders to help maintain his head alignment.”
4. “Just apply a cervical collar and then place him directly on the stretcher.”

Answer: c

Objective: 21-8

Reference: 724

31. You are assessing 30-year-old man who has fallen about 20 feet. He is alert and oriented but states that he cannot move or feel his legs. Additionally, because his blood pressure is 82/48 mmHg, you suspect neurogenic shock. Which of the following additional assessment findings reinforces your suspicion of neurogenic shock?

1. Warm and dry skin
2. Heart rate of 144
3. Shallow rapid respirations
4. Heart rate of 44

Answer: d

Objective: 21-6

Reference: 712

32. A 22-year-old female rock climber has fallen 25 feet to the trail below. The primary assessment shows her to be confused and to have an open airway and shallow breathing. Her pulse is 72 beats per minute, and her blood pressure is 78/50 mmHg. She has no motor ability or sensation in her legs. Which of the following conditions is the most likely cause of this patient’s presentation?

1. Internal bleeding
2. Spinal cord injury
3. Hemorrhagic shock
4. Hypoglycemia

Answer: b

Objective: 21-5

Reference: 702

33. You should recognize a possible spinal column injury with no spinal cord involvement when you discover which of the following assessment findings?

1. Tenderness to the thoracic spine with intact motor and sensory function in each extremity
2. Intact motor ability to all four extremities with the loss of sensation to the legs
3. Pain in the cervical spine with the loss of sensation to the right arm and leg
4. Intact sensation to all four extremities with the loss of motor ability in the arms

Answer: a

Objective: 21-5

Reference: 702

34. A mechanical injury to the brain that results in a short-term and/or a long-term neurologic deficit is:

1. a repetitive head injury.
2. a subdural hematoma.
3. neural ischemia.
4. a traumatic brain injury.

Answer: d

Objective: 21-4

Reference: 705

35. A primary injury to the central nervous system would be caused by:

1. drowning.
2. a hematoma.
3. a brachial plexus injury.
4. a laceration of the spinal cord.

Answer: d

Objective: 21-3

Reference: 712

36. You suspect that an unhelmeted climber who struck his head during a fall may have a basilar skull fracture. As you conduct your assessment, which of the following findings reinforces this suspicion?

1. Blood coming from both ears
2. Dilation and sluggish response to light of the right pupil
3. Clear fluid coming from the right ear and left nostril
4. Paralysis of the left arm and left leg

Answer: c

Objective: 21-4

Reference: 705

37. A patient was killed immediately following a self-inflicted gunshot wound to the head. Which portion of the central nervous system was most likely damaged in order to cause the rapid death of the patient?

1. The cerebrum
2. The brain stem
3. The cerebellum
4. The meninges

Answer: b

Objective: 21-1

Reference: 700

38. You are assessing a patient who tells you she had a previous head injury in which a portion of the cerebellum was destroyed. Which of the following signs and symptoms would you expect to find in relation to this injury?

1. Inability to remember information such as a past medical history
2. Poor coordination when walking
3. Problems with the regulation of heart rate and blood pressure
4. Inability to move or feel sensations in one side of the body

Answer: b

Objective: 21-1

Reference: 700

39. A patient involved in a motor vehicle collision has a deformity to the left side of the head. The skin overlying the deformity is still intact. Based on these assessment findings, which of the following conditions would be your greatest concern?

1. A possible brain injury
2. A fracture of the skull
3. The potential for infection of the brain
4. Soft tissue trauma to the scalp

Answer: a

Objective: 21-4

Reference: 705, 706

40. A 41-year-old male snowboarder struck his head on a metal rail. As you approach him, you note that he appears confused and has blood on the left side of his face and head, and on his shirt. His breathing appears to be labored. Which of the following actions should you perform immediately?

1. Check his pupils for equality and reactivity.
2. Apply oxygen at 15 LPM via nonrebreather mask.
3. Apply manual in-line spinal immobilization.
4. Expose the chest to look for possible bleeding.

Answer: c

Objective: 21-8

Reference: 714

41. You are called to aid a 61-year-old man who has fallen off a second-floor lodge patio. He is unresponsive and has slow, shallow breathing. When you arrive, a fellow patroller has already opened the airway and has stabilized the head. Which of the following actions should you take immediately?

1. Apply a cervical collar.
2. Place the patient in the shock position.
3. Assist ventilation with a BVM.
4. Transfer the patient to a stretcher for emergency transport.

Answer: c

Objective: 21-8

Reference: 715

42. A 68-year-old female patient is complaining of a headache and generalized weakness. Her husband informs you that she was with a friend yesterday and struck her face on the dashboard during a motor vehicle collision. Her past medical history includes a stroke that caused right arm weakness and high blood pressure. When assessing this patient, which of the following findings should concern you the most?

1. A contusion to her left cheek
2. Weakness in the grip of the right hand
3. Bruising behind her left ear
4. A complaint of pain when she moves her jaw

Answer: c

Objective: 21-4

Reference: 705

43. Which of the following assessment findings is most indicative of increasing pressure within the skull from a closed head injury?

1. Blood pressure of 192/106 mmHg
2. Heart rate of 132 beats per minute
3. Blood pressure of 110/50
4. Pupils equal and reactive

Answer: a

Objective: 21-7

Reference: 718

44. Your patient is a young female who was thrown from her mountain bike and is now confused. Assessment findings include an open airway, adequate breathing, and a strong radial pulse. Which of the following questions would be the most important to ask her friends who were with her?

1. “Has she ever needed to be hospitalized before?”
2. “Are all of her immunizations up to date?”
3. “Is she allergic to anything?”
4. “Did she lose consciousness?”

Answer: d

Objective: 21-6

Reference: 705

45. A male soccer player was struck in the head with a soccer ball. Players state that he was dazed for several seconds following the impact and then asked the same questions over and over. He is currently conscious and oriented to person but is confused as to place and time. He also has a reddened area on the side of his head and face. As you proceed with your assessment, his memory continues to improve. Based on these findings, you would suspect which of the following injuries?

1. A concussion/TBI
2. An open head injury
3. An epidural hematoma
4. A cerebral contusion

Answer: a

Objective: 21-4

Reference: 705

46. You are participating in training OEC candidates and are asked about cerebral contusions. You would explain to the class that a cerebral contusion is:

1. an open skull fracture with increased pressure within the skull.
2. the formation of a pocket of blood within the brain tissue.
3. bruising and swelling of the brain tissue.
4. active bleeding between the brain and the skull.

Answer: c

Objective: 21-4

Reference: 708

47. You are called to the lodge by a family who is concerned that their mother is not acting right. The family tells you that they are concerned because their mother has been complaining of a headache and is very confused today. Assessment reveals a bruise on the right side of the head that the family states she got about a week ago when she fell. Which of the following conditions would you be concerned about based on the history and assessment findings?

1. A subdural hematoma
2. A scalp laceration
3. A concussion
4. A cerebral contusion

Answer: a

Objective: 21-4

Reference: 709

48. Which of the following findings is most consistent with a skull fracture?

1. Bruising behind the ear that develops several hours after the injury
2. Bilateral dilated pupils that do not respond to light
3. A hematoma in the occipital area of the head
4. Altered mental status

Answer: a

Objective: 21-4

Reference: 705

49. Which of the following findings indicates that a patient who received a blow to the head is suffering from something other than a concussion/TBI?

1. He cannot remember what happened.
2. He asks the same questions over and over.
3. His heart rate is 92 and his blood pressure is 144/86.
4. His pupils are noticeably unequal.

Answer: d

Objective: 21-7

Reference: 718

50. When explaining the priorities of helmet removal to a candidate patroller, you would stress:

1. sliding the helmet rearward off the head so that you don’t hit the patient’s nose.
2. sliding the fingers under the occiput so that the head doesn’t drop backward.
3. applying a cervical collar before removing the helmet to help stabilize the head.
4. removing the helmet to ensure the patient’s proper alignment on a backboard.

Answer: b

Objective: 21-10

Reference: 725