



COMMITTEE ON TRAUMA

ATLS®

Written Pretest # 1

7th Edition

These test items are undergoing psychometric analysis.

Note: It is understood that medical practices vary with institutional policies and individual preferences. This test is designed in conjunction with the material presented in the 7th edition of the ATLS® Course. Please answer the questions accordingly.

Important directions before you begin this test:

- This test consists of 40 multiple-choice questions.
- Please use the response sheet provided with this test and enter your name, course site, and date at the top of the response form.
- Use a pencil to blacken the space provided for your response to each item.
- If you change your response, please erase your first mark completely.
- Read each question **thoroughly** and select the **one best** answer.

PLEASE DO NOT WRITE ON OR IN THIS TEST BOOKLET.

Thank you

1-1. A 22-year-old man is hypotensive and tachycardic after a shotgun wound to the left shoulder. His blood pressure is initially 80/40 mm Hg. After 2 liters of crystalloid solution his blood pressure increases to 122/84 mm Hg. His heart rate is now 100 beats per minute and his respiratory rate is 28 breaths per minute. His breath sounds are decreased in the left hemithorax, and after initial IV fluid resuscitation, a closed tube thoracostomy is performed for decreased left breath sounds with the return of a small amount of blood and no air leak. After chest tube insertion, the most appropriate next step is

- a) reexamine the chest.
- b) perform an aortogram.
- c) obtain a CT scan of the chest.
- d) obtain arterial blood gas analyses.
- e) perform transesophageal echocardiography.

1-2. A construction worker falls 2 stories from a building and sustains bilateral calcaneal fractures. In the emergency department, he is alert, vital signs are normal, and he is complaining of severe pain in both heels and his lower back. Lower extremity pulses are strong and there is no other deformity. The suspected diagnosis is most likely to be confirmed by

- a) angiography.
- b) compartment pressures.
- c) retrograde urethrogram.
- d) Doppler-ultrasound studies.
- e) complete spine x-ray series.

1-3. During the third trimester of pregnancy, all of the following changes occur normally **EXCEPT** a

- a) decrease in PaCO₂.
- b) decrease in leukocyte count.
- c) reduced gastric emptying rate.
- d) diminished residual lung volume.
- e) diminished pelvic ligament tension.

1-4. In managing the head-injured patient, the most important initial step is to

- a) secure the airway.
- b) obtain c-spine film.
- c) support the circulation.
- c) control scalp hemorrhage.
- e) determine the GCS Score.

1-5. A previously healthy, 70-kg (154-pound) man suffers an estimated acute blood loss of 2 liters. Which one of the following statements applies to this patient?

- a) His pulse pressure will be widened.
- b) His urinary output will be at the lower limits of normal.
- c) He will have tachycardia, but no change in his systolic blood pressure.
- d) His systolic blood pressure will be decreased with a narrowed pulse pressure.
- e) His systolic blood pressure will be maintained with an elevated diastolic pressure.

1-6. The physiologic hypervolemia of pregnancy has clinical significance in the management of the severely injured, gravid woman by

- a) reducing the need for blood transfusion.
- b) increasing the risk of pulmonary edema.
- c) complicating the management of closed head injury.
- d) reducing the volume of crystalloid required for resuscitation.
- e) increasing the volume of blood loss to produce maternal hypotension.

1-7. The best guide for adequate fluid resuscitation of the burn patient is

- a) adequate urinary output.
- b) reversal of systemic acidosis.
- c) normalization of the heart rate.
- d) a normal central venous pressure.
- e) 4 mL/kg/percent body burn/24 hours.

1-8. Establishing a diagnosis of shock must include

- a) confirming hypoxemia.
- b) the finding of acidosis.
- c) documenting hypotension.
- d) confirming increased vascular resistance.
- e) evidence of inadequate perfusion of the body's organs.

1-9. A 7-year-old boy is brought to the emergency department by his parents several minutes after he fell through a window. He is bleeding profusely from a 6-cm wound of his medial right thigh. Immediate management of the wound should consist of

- a) application of a tourniquet.
- b) direct pressure on the wound.
- c) packing the wound with gauze.
- d) direct pressure on the femoral artery at the groin.
- e) irrigation and debridement of devitalized tissue and tetanus prophylaxis.

1-10. For the trauma patient with cerebral edema, hypercarbia should be avoided to prevent

- a) respiratory failure.
- b) metabolic alkalosis.
- c) cerebral vasodilatation.
- d) neurogenic pulmonary edema.
- e) reciprocal high levels of PaCO_2 (to prevent coma).

1-11. A 25-year-old man is brought to the hospital after being involved in a motor vehicular crash when his car struck a bridge abutment. He is intoxicated, has a GCS Score of 13, and complains of abdominal pain. His blood pressure was 80 mm Hg systolic by palpation on admission to the hospital, but it rapidly increased to 110/70 mm Hg with the administration of intravenous fluids. His heart rate is now 120 beats per minute. The chest x-ray shows loss of the aortic knob, widening of the mediastinum, no rib fractures, and no hemopneumothorax. Contrast angiography

- a) is not indicated.
- b) is the next procedure to perform.
- c) should be performed after a CT scan of the chest.
- d) is positive for aortic rupture in 80% of similar cases.
- e) should be delayed until abdominal hemorrhage has been excluded.

1-12. Which one of the following statements regarding abdominal trauma in the pregnant patient is **TRUE**?

- a) The fetus is in jeopardy only with major abdominal trauma.
- b) Leakage of amniotic fluid is an indication for hospital admission.
- c) Indications for peritoneal lavage are different from those in the nonpregnant patient.
- d) Penetration of an abdominal hollow viscus is more common in late than in early pregnancy.
- e) The secondary survey follows a different pattern from that of the nonpregnant patient.

1-13. The first maneuver to improve oxygenation after chest injury is

- a) intubate the patient.
- b) assess arterial blood gases.
- c) administer supplemental oxygen.
- d) ascertain the need for a chest tube.
- e) obtain a lateral cervical spine x-ray.

1-14. A 25-year-old man, injured in a motor vehicular crash, is admitted to the emergency department. His pupils react sluggishly and his eyes open to painful stimuli. He does not follow commands, but he does moan periodically. His right arm is deformed and does not respond to painful stimulus; however, his left hand reaches toward the painful stimulus. Both legs are stiffly extended. His GCS Score is

- a) 2.
- b) 4.
- c) 6.
- d) 9.
- e) 12.

1-15. A 20-year-old woman, at 32 weeks gestation, is stabbed in the upper right chest. In the emergency department, her blood pressure is 80/60 mm Hg. She is gasping for breath, extremely anxious, and yelling for help. Breath sounds are diminished in the right chest. The most appropriate **first** step is to

- a) perform tracheal intubation.
- b) insert an oropharyngeal airway.
- c) perform needle decompression of the right chest.
- d) manually displace the gravid uterus to the left side of the abdomen.
- e) initiate 2, large-caliber peripheral IV lines and crystalloid infusion.

1-16. Which one of the following findings in an adult should prompt immediate management during the primary survey?

- a) Distended abdomen
- b) Glasgow Coma Scale Score of 11
- c) Temperature of 36.5°C (97.8°F)
- d) Heart rate of 120 beats per minute
- e) Respiratory rate of 40 breaths per minute

1-17. The most important, immediate step in the management of an open pneumothorax is

- a) endotracheal intubation.
- b) operation to close the wound.
- c) placing a chest tube through the chest wound.
- d) placement of an occlusive dressing over the wound.
- e) initiation of 2, large-caliber IVs with crystalloid solution.

1-18. Important screening x-rays to obtain in the multiple-system trauma patient are

- a) skull, chest, and abdomen.
- b) chest, abdomen, and pelvis.
- c) skull, cervical spine, and chest.
- d) cervical spine, chest, and pelvis.
- e) cervical spine, chest, and abdomen.

1-19. A 56-year-old man is thrown violently against the steering wheel of his truck during a motor vehicle crash. On arrival in the emergency department he is diaphoretic and complaining of chest pain. His blood pressure is 60/40 mm Hg and his respiratory rate is 40 breaths per minute. Which of the following best differentiates cardiac tamponade from tension pneumothorax as the cause of his hypotension?

- a) Tachycardia
- b) Pulse volume
- c) Breath sounds
- d) Pulse pressure
- e) Jugular venous pressure

1-20. Bronchial intubation of the right or left mainstem bronchus can easily occur during infant endotracheal intubation because

- a) the trachea is relatively short.
- b) the distance from the lips to the larynx is relatively short.
- c) the use of tubes without cuffs allows the tube to slip distally.
- d) the mainstem bronchi are less angulated in their relation to the trachea.
- e) so little friction exists between the endotracheal tube and the wall of the trachea.

1-21. A 23-year-old man sustains 4 stab wounds to the upper right chest during an altercation and is brought by ambulance to a hospital that has full surgical capabilities. His wounds are all above the nipple. He is endotracheally intubated, closed tube thoracostomy is performed, and 2 liters of crystalloid solution are infused through 2 large-caliber IVs. His blood pressure now is 60/0 mm Hg, heart rate is 160 beats per minute, and respiratory rate is 14 breaths per minute (ventilated with 100% O₂). The most appropriate next step in managing this patient is to

- a) perform FAST.
- b) obtain a CT of the chest.
- c) perform an angiography.
- d) urgently transfer the patient to the operating room.
- e) immediately transfer the patient to a trauma center.

1-22. A 39-year-old man is admitted to the emergency department after an automobile collision. He is cyanotic, has insufficient respiratory effort, and has a GCS Score of 6. There is no significant facial trauma; his trachea is midline; and he has a chronic, severe nasal septum deviation precluding nasotracheal intubation. His full beard makes it difficult to fit the oxygen facemask to his face. The most appropriate next step is to

- a) perform a surgical cricothyroidotomy.
- b) force a nasotracheal tube past the deviated nasal septum.
- c) ventilate him with a bag-valve mask device until c-spine injury can be excluded.
- d) attempt orotracheal intubation using 2 people and inline stabilization of the cervical spine.
- e) ventilate the patient with a bag-valve mask device until his beard can be shaved for better mask fit.

1-23. A patient is brought to the emergency department 20 minutes after a motor vehicle crash. He is conscious and there is no obvious external trauma. He arrives at the hospital completely immobilized on a long spine board. His blood pressure is 60/40 mm Hg and his heart rate is 70 beats per minute. His skin is warm and he has no rectal tone. Which one of the following statements is **TRUE**?

- a) Vasoactive medications have no role in this patient's management.
- b) The hypotension should be managed with volume resuscitation alone.
- c) Flexion and extension views of the c-spine should be performed early.
- d) Occult abdominal visceral injuries can be excluded as a cause of hypotension.
- e) Flaccidity of the lower extremities and loss of deep tendon reflexes are expected.

1-24. Which one of the following is the recommended method for initially treating frostbite?

- a) Moist heat
- b) Early amputation
- c) Padding and elevation
- d) Vasodilators and heparin
- e) Topical application of silvasulphadiazine

1-25. A 32-year-old man's right leg is trapped beneath his overturned car for nearly 2 hours before he is extricated. On arrival in the emergency department, both lower extremities are cool, mottled, insensate, and motionless. Despite normal vital signs, pulses cannot be palpated below the femoral vessels and the muscles of the lower extremities are firm and hard. During the initial management of this patient, which of the following is most likely to improve the chances for limb salvage?

- a) Applying skeletal traction
- b) Administering anticoagulant drugs
- c) Administering thrombolytic therapy
- d) Performing lower extremity fasciotomies
- e) Immediately transferring the patient to a trauma center

1-26. A patient arrives in the emergency department after being beaten about the head and face with a wooden club. He is comatose and has a palpable depressed skull fracture. His face is swollen and ecchymotic. He has gurgling respirations and vomitus on his face and clothing. The most appropriate step after providing supplemental oxygen and elevating his jaw is to

- a) request a CT scan.
- b) insert a gastric tube.
- c) suction the oropharynx.
- d) obtain a lateral cervical spine x-ray.
- e) ventilate the patient with a bag-valve mask.

1-27. A 22-year-old man sustains a gunshot wound to the left chest and is transported to a small community hospital at which surgical capabilities are not available. In the emergency department, a chest tube is inserted and 700 mL of blood is evacuated. The trauma center accepts the patient in transfer. Just before the patient is placed in the ambulance for transfer, his blood pressure decreases to 80/68 mm Hg and his heart rate increases to 136 beats per minute. The next step should be to

- a) clamp the chest tube.
- b) cancel the patient's transfer,
- c) perform an emergency department thoracostomy.
- d) repeat the primary survey and proceed with transfer.
- e) delay the transfer until the referring doctor can contact a thoracic surgeon.

1-28. A 64-year-old man, involved in a high-speed car crash, is resuscitated initially in a small rural hospital with limited resources. He has a closed head injury with a GCS Score of 13. He has a widened mediastinum on chest x-ray with fractures of left ribs 2 through 4, but no pneumothorax. After infusing 4 liters of crystalloid solution, his blood pressure is 100/74 mm Hg, heart rate is 110 beats per minute, and respiratory rate is 18 breaths per minute. He has gross hematuria and a pelvic fracture. You decide to transfer this patient to a facility capable of providing a higher level of care. The facility is 128 km (80 miles) away. Before transfer, you should first

- a) intubate the patient.
- b) perform diagnostic peritoneal lavage.
- c) apply the pneumatic antishock garment.
- d) call the receiving hospital and speak to the surgeon on call.
- e) discuss the advisability of transfer with the patient's family.

1-29. Hemorrhage of 20% of the patient's blood volume is associated usually with

- a) oliguria.
- b) confusion.
- c) hypotension.
- d) tachycardia.
- e) blood transfusion requirement.

1-30. Which one of the following statements concerning intraosseous infusion in children is **TRUE**?

- a) Only crystalloid solutions may be safely infused through the needle.
- b) Aspiration of bone marrow confirms appropriate positioning of the needle.
- c) Intraosseous infusion is the preferred route for volume resuscitation in small children.
- d) Intraosseous infusion may be utilized indefinitely in the management of injured children.
- e) Swelling in the soft tissues around the intraosseous site is not a reason to discontinue infusion.

1-31. A 26-year-old seat-belted driver is brought to the hospital after a car crash. Primary survey reveals no evidence of serious injury except for diffuse, mild abdominal tenderness. Bowel sounds are hypoactive and liver dullness is questionable. An upright chest x-ray reveal free air. The patient should

- a) undergo peritoneal lavage.
- b) undergo prompt celiotomy (laparotomy).
- c) have a contrast x-ray of her gastrointestinal tract.
- d) be carefully observed for further evidence of intraabdominal injury.
- e) be suspected of having a ruptured diaphragm and accompanying pneumothorax.

1-32. A 33-year old woman is involved in a head-on motor vehicle crash. It took 30 minutes to extricate her from the car. Upon arrival in the emergency department, her heart rate is 120 beats per minute, BP is 90/70 mm Hg, respiratory rate is 16 breaths per minute, and her GCS Score is 15. Examination reveals bilaterally equal breath sounds, anterior chest wall ecchymosis, and distended neck veins. Her abdomen is flat, soft, and not tender. Her pelvis is stable. Palpable distal pulses are found in all 4 extremities. Of the following, the most likely diagnosis is

- a) hemorrhagic shock.
- b) cardiac tamponade.
- c) massive hemothorax.
- d) tension pneumothorax.
- e) diaphragmatic rupture.

1-33. A hemodynamically normal 10-year-old girl is admitted to the Pediatric Intensive Care Unit (PICU) for observation after a Grade III (moderately severe) splenic injury has been confirmed by computed tomography (CT). Which of the following mandates prompt celiotomy (laparotomy)?

- a) A serum amylase of 200
- b) A leukocyte count of 14,000
- c) Extraperitoneal bladder rupture
- d) Free intraperitoneal air demonstrated on follow-up CT
- e) A fall in the hemoglobin level from 12 g/dL to 8 g/dL over 24 hours

1-34. A 40-year-old woman restrained driver is transported to the emergency department in full spinal immobilization. She is hemodynamically normal and found to be paraplegic at the level of T10. Neurologic examination also determines that there is loss of pain and temperature sensation with preservation of proprioception and vibration. These findings are consistent with the diagnosis of

- a) central cord syndrome.
- b) spinal shock syndrome.
- c) anterior cord syndrome.
- d) complete cord syndrome.
- e) Brown-Séquard's syndrome.

1-35. A trauma patient presents to your emergency department with inspiratory stridor and a suspected c-spine injury. Oxygen saturation is 88% on high-flow oxygen via a nonrebreathing mask. The most appropriate next step is to:

- a) apply cervical traction.
- b) perform immediate tracheostomy.
- c) insert bilateral thoracostomy tubes.
- d) maintain 100% oxygen and obtain immediate c-spine x-rays.
- e) maintain inline immobilization and establish a definitive airway.

1-36. When applying the Rule of Nines to infants,

- a) it is not reliable.
- b) the body is proportionally larger in infants than in adults.
- c) the head is proportionally larger in infants than in adults.
- d) the legs are proportionally larger in infants than in adults.
- e) the arms are proportionally larger in infants than in adults.

1-37. A 60-year-old man sustains a stab wound to the right posterior flank. Witnesses state the weapon was a small knife. His heart rate is 90 beats per minute, blood pressure is 128/72 mm Hg, and respiratory rate is 24 breaths per minute. The most appropriate action to take at this time is to

- a) perform a colonoscopy.
- b) perform a barium enema.
- c) perform an intravenous pyelogram.
- d) perform serial physical examination.
- e) suture repair the wound and outpatient follow up.

1-38. Which one of the following situations requires Rh immunoglobulin administration to an injured woman?

- a) Negative pregnancy test, Rh negative, and torso trauma
- b) Positive pregnancy test, Rh positive, and has torso trauma
- c) Positive pregnancy test, Rh negative, and has torso trauma
- d) Positive pregnancy test, Rh positive, and has an isolated wrist fracture
- e) Positive pregnancy test, Rh negative, and has an isolated wrist fracture

1-39. A 22-year-old woman athlete is stabbed in her left chest at the third interspace in the anterior axillary line. On admission to the emergency department and 15 minutes after the incident, she is awake and alert. Her heart rate is 100 beats per minute, blood pressure 80/60 mm Hg, and respiratory rate 20 breaths per minute. A chest x-ray reveals a large left hemothorax. A left chest tube is placed with an immediate return of 1600 mL of blood. The next management step for this patient is

- a) perform a thoracoscopy.
- b) perform an arch aortogram.
- c) insert a second left chest tube.
- d) prepare for an exploratory thoracotomy.
- e) perform an angiography to embolize the intercostal vessels.

1-40. A 6-year-old boy walking across the street is struck by the front bumper of a sports utility vehicle traveling at 32 kph (20 mph). Which one of the following statements is **TRUE**?

- a) A flail chest is probable.
- b) A symptomatic cardiac contusion is expected.
- c) A pulmonary contusion may be present in the absence of rib fractures.
- d) Transection of the thoracic aorta is more likely than in an adult patient.
- e) Rib fractures are commonly found in children with this mechanism of injury.

American College of Surgeons
Multiple-Choice Response Sheet
2004 ATLS TEST 1 7TH EDITION

Name _____

Date ____ / ____ / ____

Course Site _____

Important Instructions: Use a pencil only. If you change an answer, please erase your 1st **mark** completely. Select the one best answer accordingly to the ATLS[®] Course materials.

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|---------------------------|---------------------------|
| 1-1. (A) (B) (C) (D) (E) | 1-21. (A) (B) (C) (D) (E) |
| 1-2. (A) (B) (C) (D) (E) | 1-22. (A) (B) (C) (D) (E) |
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