

Chapter 22

Review

1. Kinetic energy is a calculation of:
 - A. weight and size.
 - B. weight and speed.
- Caring for victims of traumatic injuries requires the EMT to have a solid understanding of the trauma system in the United States.
 - A. mass and weight.
 - B. speed and force.

Answer: B

Rationale: Kinetic energy is a calculation of mass (weight) and velocity (speed). Energy cannot be destroyed, only converted.

1. Kinetic energy is a calculation of:

A. weight and size.

Rationale: Weight is part of the formula, but size would also mean weight.

B. weight and speed.

Rationale: Correct answer

1. Kinetic energy is a calculation of:

C. mass and weight.

Rationale: Mass and weight are the same.

D. speed and force.

Rationale: Force is the product of mass times acceleration, all part of Newton's second law.

2. A 20-year-old man has major open facial injuries after his vehicle struck a tree head-on. Which of the following findings within the car would MOST likely explain his injury pattern?
- A. Deployed airbag
 - B. Bent steering wheel
 - C. Nonintact windshield
 - D. Crushed instrument panel

Answer: C

Rationale: The mechanism of injury and condition of the vehicle's interior suggest likely areas of injury. Head and neck injuries are likely to result when the head and face impact the windshield.

2. A 20-year-old man has major open facial injuries after his vehicle struck a tree head-on. Which of the following findings within the car would MOST likely explain his injury pattern?

A. Deployed airbag

Rationale: This typically results in abrasions of the face, head, and arms.

B. Bent steering wheel

Rationale: This typically indicates the presence of chest injuries.

2. A 20-year-old man has major open facial injuries after his vehicle struck a tree head-on. Which of the following findings within the car would MOST likely explain his injury pattern?

C. Nonintact windshield

Rationale: Correct answer

D. Crushed instrument panel

Rationale: This typically indicates the presence of leg and hip injuries.

3. Which of the following would MOST likely result from the third collision in the “three-collision” effect that occurs during a high-speed, frontal impact motor vehicle crash?
- A. Extensive damage to the automobile
 - B. Flail chest and lower extremity fractures
 - C. Massive external trauma with severe bleeding
 - D. Aortic rupture or compression injury to the brain

Answer: D

Rationale: During the third collision, the body's internal organs collide with the inside of the body. These injuries are usually not as obvious, but are often the most life-threatening. Injuries that may result from this include internal injuries of the brain (compression injuries) and aortic tears, resulting in massive internal bleeding.

3. Which of the following would MOST likely result from the third collision in the “three-collision” effect that occurs during a high-speed, frontal impact motor vehicle crash?

A. Extensive damage to the automobile

Rationale: This would occur in the first collision.

B. Flail chest and lower extremity fractures

Rationale: This would occur in the second collision.

3. Which of the following would MOST likely result from the third collision in the “three-collision” effect that occurs during a high-speed, frontal impact motor vehicle crash?

C. Massive external trauma with severe bleeding

Rationale: This would occur in the second collision.

D. Aortic rupture or compression injury to the brain

Rationale: Correct answer

4. A young male experienced severe blunt chest trauma when his passenger car struck another vehicle head-on. During your inspection of the interior of his vehicle, you would MOST likely find:
- A. deployed airbags.
 - B. steering wheel deformity.
 - C. starring of the windshield.
 - D. a crushed instrument panel.

Answer: B

Rationale: Blunt chest injuries during a motor vehicle crash typically occur when the chest impacts the steering wheel. Therefore, your inspection of the vehicle's interior will most likely reveal a deformed steering wheel.

4. A young male experienced severe blunt chest trauma when his passenger car struck another vehicle head-on. During your inspection of the interior of his vehicle, you would MOST likely find:

A. deployed airbags.

Rationale: Typically, this will cause abrasions to the face, head, and arms.

B. steering wheel deformity.

Rationale: Correct answer

4. A young male experienced severe blunt chest trauma when his passenger car struck another vehicle head-on. During your inspection of the interior of his vehicle, you would MOST likely find:

C. starring of the windshield.

Rationale: Typically, this indicates the presence of head, face, and neck injuries.

D. a crushed instrument panel.

Rationale: Typically, this indicates the presence of leg and hip injuries.

5. An unrestrained driver collided with a bridge pillar. Upon inspection of the interior of his vehicle, you note that the lower dashboard is crushed. During your assessment of the patient, you will MOST likely encounter:
- A. trauma to the pelvis.
 - B. blunt abdominal trauma.
 - C. a severe closed head injury.
 - D. penetrating thoracic trauma.

Answer: A

Rationale: Impact points are often obvious from a quick inspection of the vehicle's interior. During a frontal collision, the unrestrained occupant's knees often impact the lower dashboard. With this type of impact, energy is transferred from the knees, to the femurs, and then to the pelvis or hip.

5. An unrestrained driver collided with a bridge pillar. Upon inspection of the interior of his vehicle, you note that the lower dashboard is crushed. During your assessment of the patient, you will MOST likely encounter:

A. trauma to the pelvis.

Rationale: Correct answer

B. blunt abdominal trauma.

Rationale: This is usually a result of striking the steering wheel.

5. An unrestrained driver collided with a bridge pillar. Upon inspection of the interior of his vehicle, you note that the lower dashboard is crushed. During your assessment of the patient, you will MOST likely encounter:

C. a severe closed head injury.

Rationale: This is usually the result of striking the windshield.

D. penetrating thoracic trauma.

Rationale: This is usually caused by flying debris, collision with parts of the vehicle, or other movable objects.

6. Whiplash injuries are MOST common following _____ impacts.

A. rear-end

B. rollover

C. frontal

D. lateral

Answer: A

Rationale: Whiplash injuries of the neck are a common occurrence following rear-end collisions. As the vehicle is suddenly thrust forward, the occupant's head is thrust backward. Properly positioned headrests can minimize the severity of whiplash injuries.

6. Whiplash injuries are MOST common following _____ impacts.

A. rear-end

Rationale: Correct answer

B. rollover

Rationale: This typically causes life-threatening injuries.

6. Whiplash injuries are MOST common following _____ impacts.

C. frontal

Rationale: This typically causes chest, head, abdominal, and extremity injuries.

D. lateral

Rationale: You should suspect lateral chest and abdominal injuries on the side of impact, as well as pelvic injuries.

7. Death from a rollover motor vehicle crash is MOST often secondary to:
- A. crushing injuries.
 - B. airbag-related trauma.
 - C. multiple collisions to the interior of the car.
 - D. ejection of the patient from the motor vehicle.

Answer: D

Rationale: Rollover crashes are the most unpredictable with regard to injuries sustained by the patient. An unrestrained passenger may have struck multiple points within the vehicle. However, the most life-threatening event in a rollover is ejection or partial ejection of the patient from the vehicle.

7. Death from a rollover motor vehicle crash is MOST often secondary to:

A. crushing injuries.

Rationale: These injuries occur during ejection or partial ejection.

B. airbag-related trauma.

Rationale: Airbags significantly reduce the risk of death in motor vehicle crashes.

7. Death from a rollover motor vehicle crash is MOST often secondary to:

C. multiple collisions to the interior of the car.

Rationale: This makes the prediction of injury patterns difficult, but is not the most common life-threatening event in a rollover.

D. ejection of the patient from the motor vehicle.

Rationale: Correct answer

8. Severe abrasion injuries can occur when motorcycle riders are slowed after a collision by road drag. Road drag is most often associated with which type of motorcycle impact?

- A. Head-on collision
- B. Angular collision
- C. Ejection
- D. Controlled crash

Answer: C

Rationale: During an ejection, the rider will travel at high speed until stopped by a stationary object, another vehicle, or road drag. Severe abrasion injuries (road rash) down to bone can occur with drag.

8. Severe abrasion injuries can occur when motorcycle riders are slowed after a collision by road drag. Road drag is most often associated with which type of motorcycle impact?

A. Head-on collision

Rationale: Road drag can occur in a head-on collision, but is more often associated with an ejection.

B. Angular collision

Rationale: Road drag can occur in an angular collision, but is more often associated with an ejection.

8. Severe abrasion injuries can occur when motorcycle riders are slowed after a collision by road drag. Road drag is most often associated with which type of motorcycle impact?

C. Ejection

Rationale: Correct answer

D. Controlled crash

Rationale: Road drag can occur in a controlled crash, but is more often associated with an ejection.

9. When assessing a stab wound, it is important for the EMT to remember that:
- A. stabbings to an extremity are rarely associated with an exit wound.
 - B. the majority of the internal trauma will be near the path of the knife.
 - C. most stabbings are unintentional and cause less severe internal injury.
 - D. more internal damage may be present than the external wound suggests.

Answer: D

Rationale: With low-velocity penetrations, injuries are caused by sharp edges of the object moving through the body and are therefore close to the object's path. Weapons such as knives, however, may have been deliberately moved around internally, causing more internal damage than the external wound suggests.

9. When assessing a stab wound, it is important for the EMT to remember that:

A. stabbings to an extremity are rarely associated with an exit wound.

Rationale: The question did not state that the wound was to an extremity.

B. the majority of the internal trauma will be near the path of the knife.

Rationale: This is true, but EMS providers must have a high index of suspicion for extended injuries due to movement.

9. When assessing a stab wound, it is important for the EMT to remember that:

C. most stabbings are unintentional and cause less severe internal injury.

Rationale: Any stabbing that penetrates an individual's skin must be considered severe until ruled out by a hospital physician.

D. more internal damage may be present than the external wound suggests.

Rationale: Correct answer

10. A 40-year-old man was standing near a building when it exploded. He has multiple injuries, including a depressed skull fracture, severe burns, and an impaled object in his abdomen. His head injury MOST likely occurred during the _____ phase of the explosion.

A. blast

B. primary

C. secondary

D. tertiary

Answer: D

Rationale: Blast injuries are associated with three phases: the primary (blast) phase, the secondary phase, and the tertiary phase. During the primary (blast) phase, ruptured eardrums and hollow organ rupture are common. During the secondary phase, impaled objects and shrapnel injuries are common. The tertiary phase occurs when the victim is thrown into a solid object, resulting in blunt trauma to virtually any part of the body.

10. A 40-year-old man was standing near a building when it exploded. He has multiple injuries, including a depressed skull fracture, severe burns, and an impaled object in his abdomen. His head injury MOST likely occurred during the _____ phase of the explosion.

A. blast

Rationale: This is not nomenclature used in describing one of the three phases of an explosion.

B. primary

Rationale: This causes injury to the eardrums, lungs, and hollow organs.

10. A 40-year-old man was standing near a building when it exploded. He has multiple injuries, including a depressed skull fracture, severe burns, and an impaled object in his abdomen. His head injury MOST likely occurred during the _____ phase of the explosion.

C. secondary

Rationale: The common injuries in this phase are caused by flying debris.

D. tertiary

Rationale: Correct answer