Bleeding, Shock, and Soft Tissue Injuries

For Your Review
Read Chapters 9, 10, and 12 of *Emergency Care*, then complete the following activities.

Key Terms
Referring to *Emergency Care*, define the following terms:

Arteries: _____

Bandage: _____

Blast injury: _____

Blood volume: _____

Burn: _____

Capillaries: _____

Closed wound: _____

Clotting: _____

Critical burn: _____

Crush injury: _____

Direct pressure: _____

Dressing: _____

External bleeding: _____

Full-thickness burn: _____

Hemorrhage: _____

Internal bleeding: _____

Open wound: _____

Partial-thickness burn: _____

Pressure bandage: _____

Shock: _____

Soft tissues: _____

Superficial burn: _____

Tourniquet: _____

Veins: _____

Wound: _____

Do You Know…

1. List the components of blood.
   i. _____
   ii. _____
   iii. _____
   iv. _____
2. List the three major functions of blood.
   i. _____
   ii. _____
   iii. _____
3. List the signs and symptoms of severe internal bleeding.

4. List five things you can do to care for shock.
   i. _____
   ii. _____
   iii. _____
   iv. _____
   v. _____

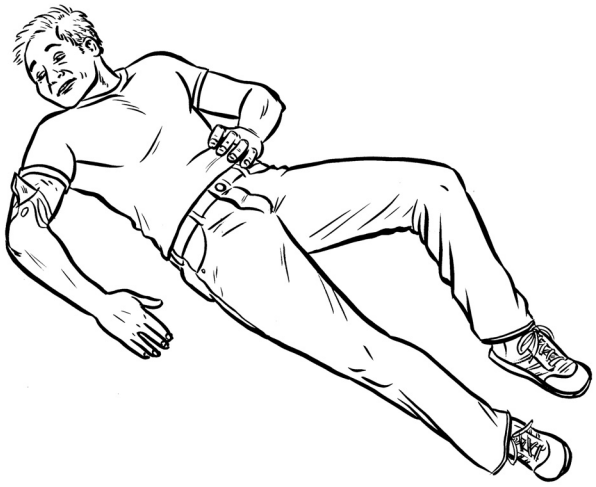
5. Matching

   Draw a line to match each type of shock, on the left, with its cause, on the right.

TYPE	CAUSE
Neurogenic	Failure of the heart to effectively pump blood to all parts of the body
Psychogenic	Severe lack of blood and fluid in the body
Septic	Factors such as emotional stress cause blood to pool in the body in areas away from the brain because of vessels dilating
Anaphylactic	Poisoning caused by severe infections that cause blood vessels to dilate
Cardiogenic	Life-threatening allergic reaction to a substance
Hypovolemic	Failure of the lungs to transfer sufficient oxygen into the bloodstream
Respiratory	Failure of the nervous system to control the size of blood vessels, causing them to dilate

6. List at least six signs and symptoms of shock. Underline the two that are the best early indicators of shock.

7. Using the diagram below, draw what you would do to care for this patient. To the side of the diagram, describe any other care you would give that cannot be drawn on the diagram.



8. What are the four main types of open wounds?

   i. _____

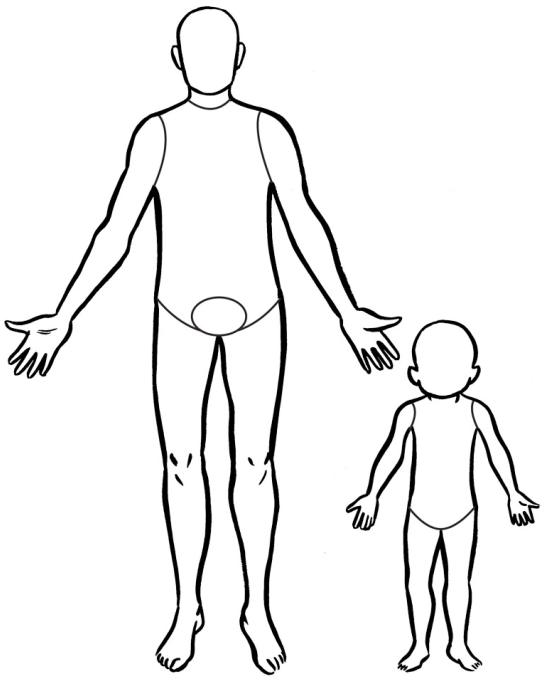
   ii. _____

   iii. _____

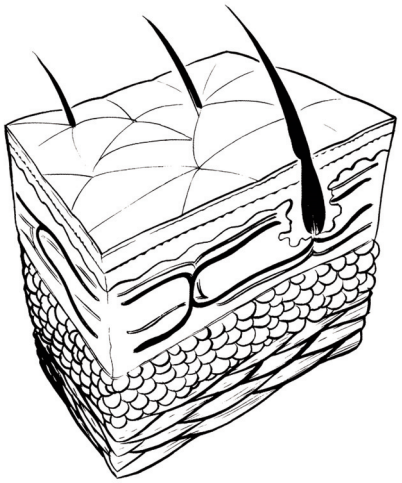
   iv. _____

Fill in the Blanks

1. Estimating the Extent of Burns
   On the diagrams below, write the percentages that correspond to the various body areas, to represent the percentage of body surface burned.



2. Thicknesses of Burns
   Using the diagram below, list the two layers of skin. Next, indicate which layers are affected by each of the three thicknesses of burns by drawing an arrow through the correct layers.



What Would *You* Do?

Read the following scenarios and answer the questions below.

Scenario 1

You respond to a call to an open field near a country home, where a man was making a fire to rid his garage of old papers, wood from his latest home improvement project, and some old wooden furniture. He threw some debris in the fire, and, shortly after, there was an explosion. An aerosol can must have gotten mixed in with the material he was burning. He was hit by flying debris and thrown, landing forcefully. As you approach, you notice he is lying on his back, looking anxious and in pain, with a large wound in his left leg, which seems to be bleeding uncontrollably. Your partner takes spinal precautions.

1. Before applying direct pressure to the wound, you should:
   a. Ensure you have gloves on
   b. Check his vital signs
   c. Ask SAMPLE questions
   d. Conduct a secondary survey

2. While you are conducting a secondary survey, you notice the man is getting drowsy and is complaining of thirst and nausea. You expose his abdomen and notice it is bruised and swollen. This would indicate:
   a. He has been doing a lot of sit-ups lately
   b. He has eaten something recently that has made him sick
   c. He is bleeding internally
   d. He was burned by the fire
3. What other care would you give for this man?

Scenario 2

You are called to the scene of a motor vehicle collision where a pedestrian was hit in the thigh while crossing the street. The driver of the vehicle is speaking with a law enforcement officer. You find a teenager lying on his back on the ground, propped up on one elbow, wincing in pain.

1. You take a set of vital signs and find his pulse to be 130, weak, and rapid, and he has a blood pressure of 86/58. This most likely indicates:
   a. He may be losing blood internally, and his heart is compensating for this by beating faster
   b. He has a severe infection that is affecting his cardiovascular system
   c. He is mad at the driver for hitting him, and his stress level is high
   d. Nothing is wrong, as these vital signs are normal for a male teenager
2. What steps would you take to care for the boy?
3. When you take the next set of vital signs, his pulse is 150, weak, and rapid, his breathing is ineffective and at a rate of 30 times per minute, and his blood pressure is 74/42. When you assess his level of consciousness, he does not respond to your voice. What is the next step to take?
   a. Shake him to wake him up
   b. Increase the flow of oxygen
   c. Apply a painful stimulus and look for a response
   d. Take note of this and move on to checking his pupils
4. The teenager begins to gasp for air and then stops breathing. You reassess his ABCs and find he is in cardiac arrest. What is your next step?
   a. Take his blood pressure
   b. Recheck his vital signs
   c. Suction the airway and then increase oxygen flow
   d. Begin CPR/AED

Scenario 3

You are called to the warehouse at your workplace, where one of your co-workers was trying to remove something jammed in the cardboard baler. He got the jam out but did not get his hand out in time, and his hand has been amputated. He is lying on the concrete floor, conscious and in severe pain.

1. After ensuring you have the appropriate personal protective equipment on, what should your next step be?
   a. Perform a secondary survey and look for any other injuries
   b. Pack the area where the hand was with dressings
   c. Take a set of vital signs
   d. Get the hand out of the baler
2. Which of the following conditions will the patient likely develop shortly?
   a. Shock
   b. Hemothorax
   c. Angina
   d. Infection

3. What four things should you do to the amputated hand to increase the chances of successful re-attachment?

   i. _____

   ii. _____

   iii. _____

   iv. _____

Scenario 4

An older female cook slips in a cafeteria. As she falls, she reaches out and her hand hits the handle of a pot on the stove. The pot, in which potatoes were being boiled, flips off the stove, and the water lands on the woman, scalding her.

1. You note that she has partial-thickness burns covering her face and left arm. She has superficial burns to her right arm. Estimate the percentage of her body that has been burned.
   a. 9%
   b. 18%
   c. 27%
   d. 36%

2. How will you care for these burns?
   a. Get her to lie in a tub of ice water
   b. Put cold cloths over the entire burned area
   c. Put ice on the areas that are the most severely burned
   d. Cool the burns immediately to prevent further burning and decrease pain

3. This is considered to be a critical burn, and you should obtain more advanced medical care. T or F

4. After cooling, what should be put on the burns to keep out air and reduce pain?
   a. Non-stick sterile dressings
   b. Sterile occlusive dressings
   c. Nothing
   d. More cool cloths

Test Your Knowledge

Circle the best answer to each of the following questions.

1. A sign of severe external bleeding is:
   a. Blood oozing from a wound
   b. Blood that fails to clot after you have tried to control it
   c. Blood spurting from a wound
   d. Both b and c

2. Which is NOT involved in the care for severe internal bleeding?
   a. Obtain more advanced medical care
   b. Administer supplemental oxygen
   c. Give the patient sips of water
   d. Treat the patient for shock

3. What are the three types of vessels that carry blood?
   a. Arteries, capillaries, and veins
   b. Arteries, alveoli, and veins
   c. Atria, capillaries, and ventricles
   d. Arteries, bronchioles, and veins

4. If a patient has severe blood loss, the blood pressure should:
   a. Go up
   b. Drop
   c. Remain normal
   d. Demonstrate an increasing gap between the systolic and the diastolic pressure

5. If blood is uncontrollably spurting from a wound, which of the following personal protection items should you wear?
   a. Gloves
   b. Gown
   c. Protective eyewear and mask
   d. All of the above

6. If a patient is severely bleeding internally from a fall, which of the following personal protection items should you wear?
   a. Gloves
   b. Gown
   c. Protective eyewear and mask
   d. All of the above

7. If direct pressure and pressure bandages do not stop the bleeding, which of the following can be used as a last resort, by trained personnel only?
   a. Arterial clamping
   b. Tourniquet
   c. Elastic bandaging
   d. Hyperbaric recompression

8. Shock is life-threatening because:
   a. The blood becomes poisonous
   b. The vital organs are not getting adequate oxgen-rich blood
   c. There is not enough blood in the circulatory system
   d. Carbon dioxide is not being released from the tissues in large enough quantities

9. Why does the skin of someone in shock appear pale and feel cool?
   a. The heart beats faster; therefore, the body's heat is used as energy
   b. The heart slows down; therefore, less heat is produced
   c. The blood vessels constrict in the arms, legs, and skin
   d. The body cools itself to conserve energy

10. Which of the following situations is likely to lead to shock?
    a. A teenager damages her spine in a diving incident
    b. A worker loses his arm in a piece of farming equipment
    c. A child who has the flu has been unable to keep fluids down for several days
    d. All of the above

11. In cases of serious illness or injury, shock is usually the final stage before death. T or F

12. Someone in shock should be positioned:
    a. On her back with the head elevated
    b. Flat on her back
    c. Sitting in a chair
    d. On a long backboard

13. Which of the following is NOT included in the general care for shock?
    a. Administer oxygen
    b. Maintain normal body temperature
    c. Give assisted ventilations
    d. Provide rest and reassurance

14. You have to identify the specific nature of the illness or injury before you can provide care for shock. T or F

15. If an injury causes severe blood loss, this will in turn cause:
    a. The blood pressure to increase
    b. The skin to become red and warm
    c. The heart rate to drop
    d. The blood volume to drop

16. Do not wait for shock to develop before providing care. T or F

17. Why is it important to help someone with shock to rest comfortably?
    a. It may minimize pain
    b. It reduces the workload on the heart
    c. It allows the blood vessels to constrict
    d. Both a and b

18. Which of the following is NOT a step in caring for an abrasion?
    a. Place a sterile dressing over the wound
    b. Apply ice to the wound
    c. Cleanse the wound with soap and water
    d. Rinse the wound under running water

19. What is the purpose of a bandage?
    a. It prevents air from reaching the wound and keeps dressings in place
    b. It provides a sterile covering for the wound
    c. It applies pressure to control bleeding and supports injured body parts
    d. It allows the wound to breathe and prevents infection

20. If someone has been struck by lightning, which of the following injuries might you suspect?
    a. Burns
    b. Spinal injuries
    c. Entry and exit wounds
    d. All of the above

21. If a patient has a burn that is black and charred with white tissue in the middle, this is a:
    a. Superficial burn
    b. Partial-thickness burn
    c. Full-thickness burn
    d. None of the above

22. If you bandage a forearm, you should leave the fingers of the hand exposed. T or F

23. A woman has dropped a chemical powder on her foot, causing a chemical burn. You should first:
    a. Brush the dry chemicals off the foot using a gloved hand
    b. Cool the area with cool running water
    c. Apply a cold compress to the area
    d. Cover the area with a non-stick sterile dressing

24. You should obtain more advanced medical care in which of the following situations:
    a. A 35-year-old man with a full-thickness burn on his hand
    b. A 7-year-old child with a sunburn on his back
    c. A 72-year-old woman with a blistered burn on her leg
    d. Both a and c

25. A myocardial contusion is:
    a. A bruise to the heart
    b. Any bruise located in the torso area
    c. Any soft tissue injury to the heart
    d. A rupture of any of the major vessels supplying blood to the heart

26. The area around a recent wound is now red and swollen. The area feels warm to the touch. This may indicate:
    a. A quick healing process
    b. Severe internal bleeding
    c. An infection
    d. A superficial burn

27. Which is NOT one of the mechanisms of injury from a blast?
    a. Shrapnel thrown by the blast
    b. Poisoning due to fumes released by the blast
    c. Trauma due to being thrown by the blast
    d. Injury due to the pressure wave or heat of the blast