OBJECTIVES

28.1 Define key terms introduced in this chapter. Slides 13, 16–17, 22, 43–45

28.2 Describe the structure and function of the skin. Slide 13

28.3 Describe types of closed soft tissue wounds and the assessment and management of closed soft tissue wounds. Slides 16–20

continued
OBJECTIVES

28.4  Predict internal injuries that may be indicated by various contusion (bruise) types and locations. Slide 18

28.5  Describe types of open soft tissue wounds and general assessment and care for open soft tissue wounds. Slides 22, 24–25

continued
OBJECTIVES

28.6 Describe specific treatment for abrasions and lacerations, puncture wounds, impaled objects, avulsions, amputations, and genital injuries. Slides 27–39

28.7 Discuss complications associated with burns. Slide 41

continued
OBJECTIVES

28.8 Classify burns by agent, source, depth, and severity. Slides 42–45
28.9 Describe specific treatment for thermal burns and chemical burns. Slides 47–49

continued
28.10 Describe assessment and management for electrical burns. Slides 51–53
28.11 Describe considerations in the dressing and bandaging of open wound. Slides 56–59
CORE CONCEPTS

- Understanding closed wounds and emergency care for closed wounds
- Understanding open wounds and emergency care for open wounds
- Understanding burns and emergency care for burns

continued
• Understanding electrical injuries and emergency care for electrical injuries
• How to dress and bandage wounds
Topics

- Soft Tissues
- Closed Wounds
- Open Wounds
- Treating Specific Types of Open Wounds
- Burns
- Electrical Injuries
- Dressing and Bandaging
Soft Tissues
Soft Tissues

- Skin
- Fatty tissues
- Muscles
- Blood vessels
- Fibrous tissues
- Membranes
- Glands
- Nerves
Skin

- Protection
- Water balance
- Temperature regulation
- Excretion
- Shock absorption
Click [here](#) to view a video on the subject of skin layers and wounds.
Closed Wounds
Closed Wounds

- Contusion
  - Bruise

- Hematoma
  - Similar to contusion
  - More tissue damage
  - Involves larger blood vessels

continued
Closed Wounds

- Closed crush injury
  - Excessive force crushing or rupturing internal (generally solid) organs
Assessment: Closed Wounds

- Bruising may be internal injury or bleeding
- Consider mechanism of injury
- Crush injuries are difficult to identify
Treatment: Closed Wounds

- Take appropriate Standard Precautions
- Manage airway, breathing, and circulation
- Always manage for internal bleeding and shock if there is a possibility of internal injuries
Treatment: Closed Wounds

- Splint extremities that are painful, swollen, or deformed
- Stay alert for vomiting
- Continuously monitor for changes and transport
Open Wounds
Open Wounds

- Abrasion
- Laceration
- Puncture
- Avulsion
- Amputation
- Crush injury
- Blast injury
Think About It

- Does an open wound necessitate using more than just gloves as standard precautions?
- Can an open injury affect the patient’s airway or breathing?
Treatment: Open Injuries

- Expose wound
- Clean surface of wound
- Control bleeding
- Provide care for shock
- Prevent further contamination
Treatment: Open Injuries

- Bandage dressings in place after bleeding is controlled
- Keep patient still
- Reassure patient
Treating Specific Types of Open Wounds
Treatment: Abrasions and Lacerations

- Reduce wound contamination
- Hold direct pressure to control bleeding
- Always check pulse, motor, and sensory function distal to injury to assure function
- Never open edges of laceration to see inside or further clean wound
Treatment: Puncture Wounds

• Use caution—objects may be embedded deeper than they appear
• Check for exit wounds
  – May require immediate care
• Bullets can fracture bones as they enter
• Stab wounds are considered serious if in a vital area of body

continued
Treatment: Puncture Wounds

- Reassure patient
- Search for exit wound
- Assess need for shock care
- Follow local protocols regarding spinal immobilization
- Transport patient
Treatment: Impaled Objects

- Do not remove object; may cause severe bleeding
- Expose wound area
- Control profuse bleeding by direct pressure
- Apply several layers of bulky dressing to “splint” object in place

continued
Treatment: Impaled Objects

• Secure dressings
• Treat for shock
• Provide rapid transport

continued
Treatment: Impaled Objects

- Splint object
- Secure dressings
Impaled Object in Cheek

• Take care that object does not enter oral cavity, causing airway obstruction
• If cheek wall is perforated, profuse bleeding into mouth and throat can cause nausea and vomiting
• External wound care will not stop the flow of blood into the mouth
Treatment: Impaled Object in Cheek

• Examine wound site, both inside and outside mouth
• If you find the perforation and can see both ends, remove object
• If object is impaled into another structure, stabilize in place

continued
Treatment: Impaled Object in Cheek

- Position patient to allow for drainage
- Monitor patient’s airway
- Dress outside of wound
- Provide oxygen
- Provide care for shock
Treatment: Avulsions

- Clean wound surface
- Fold skin back into normal position
- Control bleeding and dress with bulky dressings
- If avulsed parts are completely torn away, save in sterile dressing and keep moist with sterile saline
Treatment: Amputations

- Apply pressure dressing over stump
- Use pressure points to control bleeding; use tourniquet only if all other methods fail

continued
Treatment: Amputations

• Wrap amputated part in sterile dressing and place in plastic bag; put bag in pan with water and cold packs
• Do not immerse amputated part directly in icy cold water
Treatment: Genital Injuries

- Control bleeding
- Preserve avulsed parts
- Consider if injury suggests another, possibly more serious, injury
- Calm, professional manner
- Maintain patient’s dignity
- Dress and bandage wound
Burns
Burns

• May involve more than just skin-level structures
• If respiratory structures are affected, swelling may occur, causing life-threatening obstruction
• Don’t let burn distract from spinal damage or fractures
Assessment: Burns

- Classifying burns
  - Agent and source
  - Depth
  - Severity
Burns: Depth

• Superficial (1st Degree)
  – Involves only epidermis
  – Reddening with minor swelling

• Partial Thickness (2nd Degree)
  – Epidermis burned through, dermis damaged
  – Deep, intense pain
  – Blisters and mottling

continued
Burns: Depth

• Full Thickness (3rd Degree)
  – All layers of skin burned
  – Blackened areas surrounded by dry and white patches
Burns: Severity

- **Rule of Nines**
  - Helps estimate extent of burn area
  - Adult body is divided into 11 main areas
  - Each represents 9 percent of body surface
Burns:
Geriatrics and Pediatrics

• “Minor” burn area in a young adult can be fatal to a geriatric adult

• Infants and children have a much greater relationship of body surface area to total body size, resulting in greater fluid and heat loss from burned skin
Treatment: Thermal Burns

- Use sterile dressings
- Never apply ointments, sprays, or butters
- Do not break blisters
Treatment: Chemical Burns

• Wash away chemical with copious amounts of flowing water

• If dry chemical, brush away, then flush with water

continued
Treatment: Chemical Burns

- Remove contaminated clothing
- Apply sterile dressings
- Treat for shock
Electrical Injuries
Electrical Injuries

- Severe damage through body by disrupting nerve pathways
- Entry and exit burns are possible
- Respiratory/cardiac arrest are possible
- Bones may fracture from violent muscle contractions
Treatment: Electrical Injuries

• Provide airway care
• Be alert and prepared for cardiac rhythm changes; be ready to defibrillate
• Treat for shock and provide oxygen

continued
Treatment: Electrical Injuries

- Care for spinal and head injuries as well as extremity fractures
- Evaluate burn sites
- Cool burning areas and apply sterile dressings
Click [here](#) to view a video on the subject of injuries caused by electricity.
Dressing and Bandaging
Dressing and Bandaging

- Dressing: any material applied to wound to control bleeding and prevent contamination

Pressure Dressing

Occlusive Dressing
Dressing and Bandaging

- Bandage: any material used to hold dressing in place
Dressing Open Wounds

- Expose wound
- Completely cover wound area
- Dressings should not be removed unless bulky dressing is blood soaked and new one must be applied to maintain direct pressure
- Control bleeding by direct pressure or pressure dressings
Bandaging Open Wounds

- Do not bandage too tightly or too loosely
- Do not leave loose ends
- Do not cover tips of fingers or toes—must observe distal skin color changes
- Cover all edges of dressings
Chapter Review
Chapter Review

• Soft-tissue injuries may be closed or open.
• Closed injuries include contusions, hematomas, and crush injuries. Open wounds include abrasions, lacerations, avulsions, amputations, and crush injuries.

continued
Chapter Review

• For open wounds, expose the wound, control bleeding, and prevent further contamination.

• For both open and closed injuries, take appropriate Standard Precautions.
Chapter Review

• Burn severity is determined by considering the source, the region affected, depth of burn, extent of burn, age of the patient, and other patient illnesses or injuries.
Chapter Review

• Care for burns includes stopping the burning, covering a thermal burn with a dry sterile dressing, flushing a chemical burn with sterile water, protection of the airway, administration of oxygen, treatment for shock, and transport.
Chapter Review

• For treatment of electrical injuries, be sure that you and the patient are in a safe zone away from possible contact with electrical sources. Protect airway, breathing, and circulation. Be prepared to care for respiratory or cardiac arrest. Treat for shock, care for burns, and transport.
Remember

• The soft tissue of the body is made up of skin, fatty tissues, muscles, blood vessels, fibrous tissues, membranes, glands, and nerves.

• The skin provides protection, water balance, temperature regulation, excretion, and shock absorption.

continued
Remember

- *Open* or *closed* in reference to a soft-tissue injury is dictated by whether or not the skin is still intact.
- Closed injuries must be evaluated with consideration to underlying anatomy and mechanism of injury.
Remember

- Open injuries typically are easier to visualize, but they often can mask underlying injuries.
- Burns involve immediate destruction of tissue but also can have a long-term effect, both physically and emotionally.

continued
Remember

- Safety must be a key concern when treating a patient with a burn or an electrical injury.
- The goal of dressing and bandaging wounds is to control bleeding and to prevent infection.
Questions to Consider

• Does the patient have a patent airway and is breathing adequate?
• If the wound is penetrating, is there an exit wound?
• What is the best way to immobilize an impaled object?
Questions to Consider

• Is there respiratory involvement with the burn?
• Have we irrigated the chemical burn sufficiently?
• Does the electrical burn have an exit wound?
• Is the bandage securely fastened to hold the dressing?
Critical Thinking

• A 21-year-old male lacerated his anterior elbow when he fell through a window. There is a lot of blood around the patient. Bystanders have applied numerous towels and washcloths over the wound (at least 3 inches thick). 

continued
There are so many dressings on the wound that you can’t tell if it is still bleeding. The patient is alert, but pale and anxious. The radial pulse on his uninjured arm is weak and rapid. How much assessment of the wound should you do and how do you do it without making things worse?
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