Lesson Objectives

1. Explain the effects of blood loss and the body’s mechanisms to control bleeding.
2. Describe the different types of external bleeding.
3. Demonstrate the steps for controlling external bleeding.
4. Demonstrate the steps for applying a pressure bandage.
Lesson Objectives continued

5. List the steps for caring for a bruise.

6. List the signs and symptoms of internal bleeding and describe the first aid to give.
Bleeding

• Many injuries cause external or internal bleeding.
• Injuries may be minor or life threatening.
• Most external bleeding is not severe and can be controlled.
Effects of Blood Loss

- Body can compensate for small blood loss (with a loss of 15-30% the victim remains alert and blood pressure and pulse are close to normal).

- Severe blood loss (> 30%) results in lack of oxygen and shock.

- In infants and children, severe bleeding becomes critical more quickly.
The Body’s Control of Bleeding

- Vascular spasm constricts blood vessel.
- Platelets form platelet plug.
- Clotting seals leak in the blood vessel.
- These mechanisms may not be enough to stop severe bleeding.
External Bleeding

- Occurs when skin and other tissues damaged and blood escapes
- Rate of bleeding depends on size and type of damaged vessels:
  - Injury to major vessel close to skin surface as in the case of the scalp and face may cause heavy bleeding.
Types of External Bleeding

- Arterial
- Venous
- Capillary
Controlling External Bleeding

- Give first aid immediately to stop bleeding.
- Apply direct pressure on wound covered with sterile dressing.
- Press directly with gloved hand or improvised barrier.
Hemostatic Dressings

- A new, special kind of dressing to help control bleeding
- Promote rapid blood clotting
- Used if other methods cannot control bleeding
CHAPTER 8

Skill: Controlling Bleeding
Skill: Controlling Bleeding

1. Put on gloves.

*Improvise a barrier if no barrier is available.*
Skill: Controlling Bleeding  

2. Place a sterile dressing or clean cloth on the wound.

3. Apply firm, direct pressure with your hand for about 5 minutes.
   - Do not put pressure on an object in a wound.
   - Do not put pressure on the scalp if the skull may be injured.
4. Reevaluate the bleeding:
   
a. If direct pressure does not control the bleeding and you have a hemostatic dressing, remove dressings already used and apply the hemostatic dressing directly on the wound using direct pressure.
   
b. If a hemostatic dressing is not available, continue to apply direct pressure. If blood soaks through the first dressing, place additional dressings on top of the blood-soaked dressing and keep applying pressure.
5. If needed, apply a pressure bandage to keep pressure on the wound, wrapping from the end of the extremity toward the center of the body.

*The pressure is sufficient if the bandage is snug but you can slip a finger under it. Use a tourniquet when direct pressure and a pressure bandage do not control severe bleeding from a limb.* Tourniquets should only be used as an extreme last resort by rescuers trained in their use.
6. If appropriate, treat the victim for shock and call 9-1-1.
Pressure Bandages

- Apply, if needed, over wound on extremity to maintain direct pressure.
- Use roller bandage to completely cover wound and maintain pressure.
- Make sure it doesn’t cut off circulation.
- Check victim’s fingers and toes for circulation.
Tourniquets

- May be needed to help control bleeding from an extremity not otherwise controlled.

- Consider in these situations:
  - There are multiple victims to care for.
  - The victim has multiple injuries requiring care.
  - The environment is unsafe and you need to evacuate the victim.
  - You are unable to access the wound.
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Steps for Improvising a Tourniquet

1. To make a tourniquet, use a non-stretchy material, such as terry cloth or a triangular bandage, folded lengthwise to be 1-2 inches wide.

2. Tie the tourniquet around the injured arm or leg, several inches above the injury. If the injury is below the elbow or knee, you may need to tie the tourniquet above the joint. Use a common square knot (like tying your shoes without the bow).
Steps for Improvising a Tourniquet continued

3. Above the first knot in the tourniquet, position a stick or other long object as a windlass that can be twisted to tighten the tourniquet, and tie a second square knot. Use any long object that is strong enough to hold the tourniquet and can be secured in place (a pencil, stick, spoon, pipe, etc.).

4. Twist the windlass to increase the pressure until the bleeding stops.

5. Secure the windlass in place by tying one or both ends to the victim’s arm or leg.

6. If possible, mark the time the tourniquet was placed by putting a “T” on the victim’s forehead with the time/day.
Skill: Applying a Pressure Bandage
Skill: Applying a Pressure Bandage

1. Place a sterile dressing or clean cloth on the wound.

   Start wrapping an elastic or self-adhering roller bandage below the wound dressing, wrapping from the end of the extremity toward the center of the body.
Skill: Applying a Pressure Bandage continued

2. Make several circular turns, then overlap turns by about ½ of previous turn.
Skill: Applying a Pressure Bandage continued

3. Work up the limb to cover the dressing completely.

   The pressure is sufficient if the bandage is snug but a finger can be slipped under it.
Skill: Applying a Pressure Bandage continued

4. Fix or tie the end of the bandage in place.
Chapter 8 • Controlling Bleeding

Preventing Bloodborne Infection

• Follow standard precautions.
• Use a barrier (e.g., gloves, plastic wrap, victim’s own hand).
• Wash hands immediately before touching anything else.
• Dispose of soiled supplies appropriately.
• Disinfect all contaminated items.
Internal Bleeding

- Any bleeding within body when blood does not escape
- Can be life threatening
- Consider the mechanism of injury
Internal Bleeding continued

• Closed wound may cause a bruise:
  • Minor local bleeding in the skin
  • More serious injury can cause deeper organs to bleed severely – do not give the victim anything to eat or drink.
First Aid: Simple Bruises

1. Check for signs and symptoms of a fracture or sprain and give appropriate first aid.
2. Put ice or cold pack on area.
3. With arm or leg, wrap area with elastic roller bandage. Keep the part raised to help reduce swelling.
First Aid: Internal Bleeding

1. Have victim lie on his or her back.
2. Call 9-1-1.
3. Be alert for vomiting. Put a victim who vomits or becomes unresponsive in the recovery position.
4. Keep the victim from becoming chilled or overheated.
5. If the victim becomes unresponsive, monitor breathing and be ready to give CPR.
Chapter – Opening Scenario

You receive a call that a worker in the shipping department is injured. You grab the first aid kit and arrive at the scene within a minute. The injured woman is holding a bloody rag wrapped around her hand. She says she was using a box cutter, which slipped and made a gash in her hand. She unwraps the rag to show you, and you see a deep laceration that is still bleeding.

What are the important steps you should take?
Scenario 1

A coworker who was repairing a piece of equipment suddenly yells and grabs at his arm. You see blood flowing from between his fingers. You check him and see the blood is spurting from a severed artery.

What do you do to try to stop the bleeding?
Scenario 1 continued

Even with your pressure on the wound, the bleeding continues through the dressing.

What do you do next?
Scenario 2

You are riding the bus home from work in the evening. As the bus stops where you will get off, an inebriated passenger in front of you staggers and trips on the last step and lands on the sidewalk. Not seeing what happened, the bus driver pulls away. The man rolls over, and you see that his shirt over his shoulder is rapidly becoming soaked with blood – he apparently landed on a piece of broken glass. You have neither a cell phone or a first aid kit with you.

What do you do?
Scenario 3

You respond to a scene where a construction worker is lying unresponsive on his back. Another worker tells you that a few minutes ago the victim was struck in the abdomen by a concrete block that tumbled from on top of a wall. This other person unbuttoned the man’s shirt to see if he was bleeding, and although his skin is abraded and bruised, there is no active external bleeding.

What are the first actions you should take?
You carefully check his abdomen. It is hard and swollen, and his skin is cool and moist.

Now what should you do?
CHAPTER 8
Discussion and Questions