Lesson Overview

In previous lessons, you learned about triage and rapid treatment for life-threatening conditions. Many victims will have less critical injuries requiring basic care.

Common injuries that may require initial treatment by CERT members during a disaster include:

- Burns.
- Wounds.
- Fractures, sprains, and strains.
- Hypothermia.

Although CERTs cannot treat spinal injuries, they can take precautions if spinal injuries are suspected.

What Is a Head-to-Toe Assessment?

After all victims in an area have been through triage, head-to-toe victim assessments begin.

The objectives of a head-to-toe assessment are to:

- Determine, as clearly as possible, the extent of injuries.
- Determine what type of treatment is needed.
- Document injuries.

All victims should be assessed—even those who seem unhurt.

What Are You Looking For?

During an assessment, look for indicators that will help you determine the nature of the person's injury. Indicators may include:

- Bruising.
- Swelling.
- Severe pain.

You should also try to find out how a person has been hurt (called the "mechanism of injury") because it may point to probable injuries.

Talk to the Victim

With a conscious victim, assessment should be both hands-on and verbal. There are several important reasons to talk to the victim during assessment. Talk to the victim:

- To ask permission. You should always ask permission to conduct the assessment. The victim has the right to refuse your help.
- To calm the person. Telling the person who you are and what you are doing helps reduce anxiety.
- To obtain information. Ask the person to describe his or her symptoms and to tell you how the injury occurred.

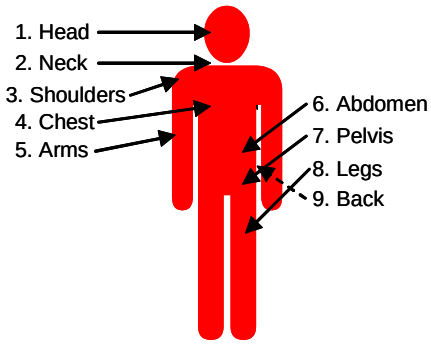
Assessment Guidelines

When conducting a head-to-toe assessment:

- Be alert. Pay careful attention, using all of your senses. Look, listen, and feel for anything unusual.
- Be thorough. Perform an entire assessment before beginning any treatment.
- Be cautious. Treat all unconscious victims as if they have a spinal injury. (You'll learn more about the signs of spinal injuries later in this lesson.)
- Be consistent. Conduct assessments systematically, the same way every time.

Assessment Sequence

Conduct the assessment from top to bottom, in the order shown. Check each body part for injuries to bones and soft tissue. Be sure to look at your hands after checking every part for evidence of patient bleeding.



Identifying Neck, Spine, and Head Injuries

A neck, spine, or closed head injury is an extremely serious injury. This type of injury must be identified immediately so that important precautions can be taken.

Closed Head Injury

A concussion-type injury to the head (as opposed to a head laceration).

Signs of a Neck, Spine, or Closed Head Injury

A victim who exhibits any of the following signs should be treated as having a neck, spine, or closed-head injury:

- Change in consciousness
- Inability to move one or more body parts
- Severe pain or pressure in the head, neck, or back
- Tingling or numbness in extremities
- Difficulty breathing or seeing
- Heavy bleeding, bruising, or deformity of the head or spine
- Blood or fluid in the nose or ears
- Bruising behind the ear
- “Raccoon” eyes (bruising around eyes)
- “Uneven” pupils
- Seizures
- Nausea or vomiting
- Mechanism of injury that could cause this type of injury (e.g., when a victim is found under collapsed building material)

Handling Neck, Spine, and Head Injuries

Your main objective with suspected injuries to the head, neck, or spine is to **do no harm**. To avoid further injury:

- Keep the head, neck, and spine in a straight line during the assessment and while treating other life-threatening injuries.
- Don't move the victim until you have done a head-to-toe assessment unless you and the victim are in immediate danger.

Materials for In-Line Stabilization

In-line stabilization is done to keep the head, neck, and spine in a straight line. Ideally, a backboard and cervical collar are used for this purpose.

In an emergency, standard equipment may not be available, and you may need to be creative. For example:

- A door, desktop, or building materials could be used as a backboard if moving the victim is necessary.
- Towels, draperies, or sandbags could be used to stabilize the head on the board.

Burns

Burns may be caused by heat, chemicals, electrical current, or radiation. The severity of a burn depends on:

- The temperature of the burning agent.
- How long the victim was exposed.
- Area of the body affected.
- Size of the burned area.
- Depth of the burn.

Important! Use extreme caution around burn victims when there is no obvious cause for the burns. If the burns were caused by chemicals or radiation, you may be at risk.

Recognizing Burn Severity

The skin has three layers: Epidermis, dermis, and subcutaneous layer. Burns may affect one, two, or all three layers of skin.

Burn Classifications

Burns are classified into three degrees of severity, depending on the skin layers affected by the burn.

- First-degree burn

Skin Layer Affected	Symptoms
▪ Epidermis (superficial)	▪ Reddened, dry skin ▪ Pain ▪ Possible swelling

- Second-degree burn

Skin Layers Affected	Symptoms
▪ Epidermis ▪ Partial destruction of dermis	▪ Reddened, blistered skin ▪ Wet appearance ▪ Pain ▪ Possible swelling

- Third-degree burn

Skin Layers Affected	Symptoms
▪ Complete destruction of epidermis and dermis ▪ Possible subcutaneous damage	▪ Whitened, leathery, or charred (brown or black) ▪ Painful or relatively painless

Treating Burns

The objectives of treatment for burns are to:

- Cool the burned area
- Protect the area and prevent infection

Burn Treatment: Cooling

The following methods can be used to cool a burn:

- Remove the victim from the burn source and put out flames.
- Remove smoldering clothing unless stuck to the skin.

If skin or clothing is still hot, cool them by immersing them in cool water for not more than 1 minute. Alternately, apply cool compresses wrung out in cool water. You can use soaked towels, sheets, or other cloths for this purpose.

Also, remove heated metal objects like watches and rings.

Burn Treatment: Avoiding Hypothermia

Use caution when applying compresses. Cooling a burn too rapidly can cause hypothermia in some victims—especially:

- Infants.
- Young children.
- Older persons.
- Victims with severe burns.

To avoid hypothermia in these victims, do not cool more than 15 percent of the body surface area (the size of one arm) at one time.

Burn Treatment: Covering

Cover the burn loosely with sterile dressings to:

- Keep air out.
- Prevent infection.

Local protocols will dictate whether dry or moist dressings should be used.

Burn Treatment: More Do's and Don'ts

When treating burns:

Do's:	Don'ts:
▪ **Do** elevate burned extremities higher than the heart. ▪ **Do** treat all victims of third-degree burns for shock.	▪ **Do not** use ice. Ice causes vessel constriction. ▪ **Do not** apply antiseptics, ointments, or other remedies. Such preparations will hold heat in the burn area and will have to be scrubbed off later. ▪ **Do not** remove shreds of tissue or break blisters. ▪ **Do not** remove adhered particles of clothing. Instead, cut the clothing around the burn and leave the burned-in portion in place.

Wounds

Wounds—including lacerations, amputations, and impaled objects—are common after disasters.

The objectives of wound treatment are to:

- Control bleeding.
- Prevent secondary infection.

You have already learned techniques to control bleeding. This section of the lesson focuses on preventing infection by cleaning and bandaging.

Wound Care: Cleaning

To clean dirt from a wound:

- Irrigate the wound with water.
- Flush the wound with a mild soap-and-water solution.
- Irrigate the wound again with water.

In an emergency situation, a bulb syringe, like a turkey baster, can be used for irrigation.

Never scrub a wound!

Wound Care: Bandaging

Sterile dressings and bandages are used to keep a wound clean after irrigating and controlling bleeding.

To treat a wound:

- Place a sterile dressing directly over the wound and secure it in place with a bandage.
- If the wound is still bleeding, use a pressure bandage to help control bleeding without interfering with circulation.

Wound Care Followup

Wound care followup depends on whether there is continued active bleeding.

- If there is no active bleeding, remove the dressing, flush the wound, and check for signs of infection at least every 4 to 6 hours.
- If the dressing is soaked with blood, redress over the existing dressing. Maintain pressure and elevation to control bleeding.

Signs of Possible Infection

- Swelling around the wound site
- Discoloration
- Discharge from the wound
- Red striations from the wound site

Treating Amputations

When treating amputations, the main objectives are to control bleeding, treat for shock, and save tissue parts.

If the severed body part can be located, you should:

- Wrap the severed part in a clean cloth and place it in a plastic bag, if available.
- Keep the severed part cool.
- Keep the severed part with the victim.

Treating Victims With Impaled Objects

In a disaster, you may encounter victims who have foreign objects lodged in their bodies—usually as the result of flying debris.

The most important thing to remember about treating a victim with an impaled object is don't try to remove the object.

Treatment for an Impaled Object

- Immobilize the affected body part.
- Don't try to move or remove the foreign object unless it is obstructing the airway.
- Try to control bleeding at the entrance wound without placing undue pressure on the foreign object.
- Clean and dress the wound. Wrap bulky dressings around the object to keep it from moving.

Fractures, Dislocations, Sprains, and Strains

In a disaster, victims often sustain injuries to bones, joints, and the muscles and ligaments that surround them.

- Fracture
- Dislocation
- Sprain
- Strain

Fracture

A fracture is a broken bone. A fracture may be closed or open, displaced or nondisplaced.

- **Closed fracture:** A fracture in which the broken bone does not puncture the skin.
- **Open fracture:** A fracture in which the bone protrudes through the skin. With this type of injury, the wound allows contaminants to enter the fracture site.
- **Displaced fracture:** A fracture in which the bone is no longer aligned. If the limb is angled, there is a displaced fracture.
- **Nondisplaced fracture:** A fracture in which the bone remains aligned. A nondisplaced fracture can be hard to identify. The main signs are pain and swelling.
- **A dislocation** is an injury to the ligaments around a joint that is so severe that it permits the bone to separate from its normal position in the joint.

Sprains and Strains

A sprain involves stretching or tearing of ligaments at a joint. A sprain is usually caused by stretching or extending the joint beyond its normal limits.

A sprain is considered a partial dislocation. The bone either remains in place or falls back into place after the injury.

A **strain** involves stretching and/or tearing of muscles or tendons. Strains most often involve the muscles in the neck, back, thigh, or calf.

General Treatment

Use the following techniques when treating fractures, dislocations, sprains, and strains:

- Remove restrictive clothing, shoes, and jewelry that could act as tourniquets during swelling.
- Immobilize the injury and the joints immediately above and below the injury.

If you're not sure of the type of injury, treat it as a fracture.

Treating Open Fractures

Open fractures are high-priority injuries because of the risk of severe bleeding and infection. Treat them quickly and check them frequently.

Below are important do's and don'ts for treating open fractures.

Do's	Don'ts
▪ **Do** cover the wound with a sterile dressing. ▪ **Do** splint the fracture without disturbing the wound. ▪ **Do** place a moist dressing over the bone end to keep it from drying out.	▪ **Don't** draw the exposed bone ends back into the tissue. ▪ **Don't** irrigate the wound.

Treating Dislocations, Sprains, and Strains

Dislocations, sprains, and strains can be difficult to identify. The signs are often similar to those of a fracture. Symptoms may include:

- Tenderness at the site of the injury.
- Swelling and/or bruising.
- Restricted use or loss of use.

Treat these injuries as fractures by immobilizing the injury. Don't try to relocate a suspected dislocation!

Splinting

Splinting is used to immobilize an injured limb. Follow these basic guidelines for splinting:

1. Support the injured area above and below the site of the injury.
2. If possible, splint the injury in the position that you find it.
3. Don't try to realign bones.
4. Immobilize above and below the injury.
5. After splinting, check for proper circulation (color, warmth, and sensation).

Splint Materials

A variety of materials can be used for splinting, including:

- Rigid materials: Cardboard, board, metal strip, folded magazine or newspaper, or other item.
- Soft materials: Towels, blankets, pillows, or other soft items.
- Anatomical splint: An adjacent unfractured bone such as the adjacent finger or leg.

Attaching a Splint

When applying a splint:

- Use soft materials to fill the gap between the splinting material and the body part.
- Tie the splinting material in place with bandaging materials or soft cloths.

Splinting Examples

- Cardboard splint: The edges of the cardboard are turned up to form a "mold" in which the injured limb can rest.
- Towel splint: A towel is rolled up and wrapped around the limb, then tied in place.
- Pillow splint: A pillow is wrapped around the limb and tied.
- Anatomical splint: A fractured limb is immobilized by tying it at intervals to the unfractured limb.

Hypothermia

Hypothermia occurs when the body's temperature drops below normal. Hypothermia may be caused by:

- Exposure to cold air or water.
- Inadequate food combined with inadequate clothing and heat—especially in older people.

Hypothermia can occur in a matter of minutes. It is a concern for people exposed to cold air or cold water.

Symptoms of Hypothermia

Primary signs and symptoms:

- Body temperature of 95°F (37°C) or less
- Redness or blueness of the skin
- Numbness accompanied by shivering

Secondary signs and symptoms:

- Slurred speech
- Unpredictable behavior
- Listlessness

Treating Hypothermia

Treat victims who are at risk for hypothermia by warming and protecting them:

- Remove wet clothing and wrap the victim in a blanket or sleeping bag that covers the head and neck.
- Protect victims from the weather. Don't let them walk around, even if they seem fully recovered.
- Provide warm, sweet drinks and food if the victim is conscious and coherent. Do not offer alcohol or massage.

Place an unconscious victim in the recovery position (lying on his or her side with knees drawn up).

Lesson Summary

- After all victims have been triaged, assess each victim from head to toe. Complete the assessment before beginning treatment.
- For suspected head, neck, and spinal injuries, use inline stabilization to keep the spine in a straight line.
- Treat burns by cooling and covering.
- Treat wounds by controlling bleeding, cleaning, and bandaging.
- Treat fractures, dislocations, sprains, and strains by immobilizing—usually splinting.
- Treat hypothermia by warming and protecting.
