Head, Neck, and Spine Injuries

- Identify the most common causes of head, neck and spinal injuries.
- List 10 situations that might indicate serious head, neck and spinal injuries.
- List the signals of head, neck and spinal injuries.
- Describe how to effectively minimize movement of the person's head, neck and spine.
- Know the situations in which you would hold the person's head in the position found.
- Describe how to care for specific injuries to the head, face, neck and lower back.
- Know how to prevent head, neck and spinal injuries.

Introduction

- Each year, nearly 2 million Americans suffer a head, neck or spinal injury serious enough to require medical care.
  - Most of these victims are males between ages 15 and 30.
- Motor vehicle collisions account for nearly half of all head, neck and back injuries.
- Other causes include falls, injuries from sports and recreational activities and violent acts.
- Today, there are hundreds of thousands of permanently disabled victims with a wide range of physical and mental impairments.
- Prompt care can prevent some head, neck and back injuries from resulting in death or disability.

Recognizing and Caring for Serious Head, Neck and Back Injuries

- Injuries to the head, neck or back often damage both bone and soft tissue, including brain tissue and the spinal cord.
- It is usually difficult to determine the extent of damage in head, neck or back injuries.

Anatomy Review
- Head – skull (cranial cavity) and face
- Neck – soft tissue and cervical spine
- Back – soft tissue and most of the vertebral column
Checking the Scene and the Person

- Evaluate the scene for clues.
- Think about the forces involved in the injury.
- Consider the possibility of a serious head, neck or back injury in the following situations:
  - Is unconscious.
  - Was involved in a motor vehicle crash or subjected to another significant force.
  - Was injured as a result of a fall from greater than the person’s standing height.
  - Is wearing a safety helmet that is broken.
  - Complains of neck or back pain.
  - Has tingling or weakness in the extremities.
  - Is not fully alert.
  - Appears to be intoxicated.
  - Appears to be frail or older than 65 years.
  - Is a child younger than 3 years with evidence of a head or neck injury.

Approach the person from the front so he or she can see you without turning his or her head, and tell the person to respond verbally to your questions.

Ask the responsive person the following questions, while maintaining manual stabilization, to further assess the situation:

- Does your neck or back hurt?
- What happened?
- Where does it hurt?
- Can you move your hands and feet?
- Can you feel where I am touching?

Signals of Head, Neck and Back Injury

- When you are checking a victim with a suspected head, neck or back injury, look for any swollen or bruised areas.
- You may find certain signals that indicate a serious injury. These signals include—
  - Changes in the level of consciousness.
  - Severe pain.
  - Tingling or loss of sensation.
  - Partial or complete loss of movement.
  - Unusual bumps or depressions.
  - Sudden loss of memory.
Signals of Head, Neck and Back Injury (continued)

- Blood or other fluids in the ears or nose.
- Profuse external bleeding.
- Seizures.
- Impaired breathing or impaired vision.
- Nausea or vomiting.
- Persistent headache.
- Loss of balance.
- Bruising of the head, especially around the eyes or behind the ears.

Care for Head, Neck and Back Injuries

- Head, neck and back injuries can become life threatening.
- While waiting for EMS personnel to arrive, always care for head, neck and back injuries as follows:
  - Minimize movement of the head, neck and back using manual stabilization.
  - Gently hold the head in position found.
  - Do not remove a helmet unless you are specifically trained to do so and it is necessary to assess or access the person's airway.
  - Check for life-threatening conditions.
  - Monitor consciousness and breathing.
  - Control external bleeding.
  - Do not apply direct pressure if there are any signs of an obvious skull fracture.
  - Maintain normal body temperature. (Shock prevention)
Care for Head, Neck and Back Injuries

- To perform manual stabilization and help prevent further damage to the spinal column:
  - Place your hands on both sides of the person’s head in the position in which you found it.
  - Gently support the person’s head in that position until EMS personnel arrive and take over.
  - Try to keep the person from moving his or her lower body, since this movement will change the position of the head and neck.
  - Do not attempt to align the head and lower body. If the head is sharply turned to one side, do not move it. Support it in the position found.
- Manual stabilization can be performed on persons who are lying down, sitting or standing.

Check for Life-Threatening Conditions

- You do not always have to put a person onto his or her back to check breathing.
- If the person is breathing, support him or her in the position in which you found him or her.
- If the person is not breathing or you cannot tell, roll the person gently onto his or her back, but avoid twisting the spine.
  - Carefully tilt the head and lift the chin just enough to open the airway, or give rescue breaths if needed.
- If the person begins to vomit, carefully roll him or her into the modified H.A.I.N.E.S. recovery position to keep the airway clear.

Specific Injuries to the Head

- The head is easily injured because it lacks the padding of muscle and fat found in other areas of the body.
- Care for concussion:
  - Anyone suspected of having a concussion should be examined by a health-care provider.
- Care for a scalp injury:
  - Control bleeding with direct pressure.
  - If you feel a depression, spongy areas or bone fragments, do not put direct pressure on the wound.
  - Secure the dressings.
  - Call 9-1-1 or the local emergency number.
Specific Injuries to the Head

Care for a cheek injury:
- To control bleeding, place several dressings, folded or rolled, inside the mouth, against the cheek.
- If external bleeding is also present, place dressings on the outside of the cheek and apply direct pressure.
- If an object passes completely through the cheek and becomes embedded and you cannot control bleeding, remove the object.
  - Since airway obstruction is possible, this circumstance is the only exception to the general rule not to remove embedded objects from the body.
Specific Injuries to the Head

- If you must remove an embedded object from the cheek, follow these steps:
  - Remove the object by pulling it out in the same direction it entered.
  - Fold or roll several dressings and place them inside the mouth. Do not obstruct the airway.
  - Apply dressings.
  - Place the victim in a seated position, leaning slightly forward.
  - As with any serious bleeding or embedded object, call 9-1-1 or the local emergency number.

Specific Injuries to the Head

- **Nose Injury**
  - Nose injuries are usually caused by a blow from a blunt object resulting in a nosebleed.
  - Nosebleeds may also be caused by high blood pressure or changes in altitude.

Specific Injuries to the Head

- To control a nosebleed—
  - Place the victim in a seated position, with the head slightly forward while pinching the nostrils together.
  - Have the victim apply this pressure for at least 10 minutes.
  - Other methods of controlling bleeding include applying an ice pack on the bridge of the nose or putting pressure on the upper lip just beneath the nose.
Specific Injuries to the Head

- If the nosebleed is persistent, seek additional medical care.
- If the victim loses consciousness, place the victim on his or her side and call 9-1-1 or the local emergency number immediately.
- If the object is in the nostril—
  - Look into the nostril.
  - If you can easily grasp the object, while wearing disposable gloves, then do so.
  - If the object cannot be removed easily, the victim should receive advanced medical care.

Specific Injuries to the Head

- Eye Injury
  - Injuries to the eye can involve the bone and the soft tissue surrounding the eye or eyeball.
  - Blunt objects or a smaller object may injure the eye area or penetrate the eyeball.
  - Injuries that penetrate the eyeball are serious and can cause blindness.

Specific Injuries to the Head

- Care for an eye injury:
  - Care for open and closed wounds around the eyeball as you would for any other soft tissue injury.
  - Care for an eye in which an object has become embedded by following these guidelines:
    - Place the victim on his or her back.
    - Do not attempt to remove any object.
    - Stabilize any embedded object in place.
    - Apply a bandage loosely.
    - Seek immediate medical attention.
Specific Injuries to the Head

- Foreign bodies that get in the eye are irritating and can cause significant damage.
- To remove the foreign body from the eye, follow these steps:
  - Tell the victim to blink several times.
  - If blinking does not work, gently flush the eye with water.
  - If the object remains, the victim should receive advanced medical care.
  - The eye should be continuously flushed until EMS personnel arrive.

Specific Injuries to the Head

- Ear Injury
  - External injuries, such as lacerations or abrasions, are common. Avulsions may also occur.
  - Internal injuries can occur due to—
    - A direct blow.
    - Sudden pressure changes.
    - A foreign object.

Specific Injuries to the Head

- Care for an ear injury
  - Control bleeding from the soft tissues of the ear by applying direct pressure.
  - To care for a victim with a lodged object, such as dirt or an insect—
    - If you can easily see and grasp the object, remove it.
    - Pull down on the earlobe, tilt the head to the side and gently shake or gently strike on the head on the affected side. Do not shake or strike the head of an infant or toddler.
    - If the object cannot be removed, the victim should seek more advanced medical care.
Specific Injuries to the Head

- If the victim has a serious head injury, suspect that blood or other fluid may be in the ear canal or draining from the ear:
  - Do not attempt to stop this drainage with direct pressure.
  - Cover the ear lightly with a sterile dressing.
  - Call 9-1-1 or the local emergency number.

Mouth, Jaw and Neck Injuries:
- The primary concern for any injury to the mouth, jaw or neck is to ensure that the airway is open.
- Such injuries in these areas may cause breathing trouble if blood or loose teeth obstruct the airway.
- A swollen or crushed trachea may also obstruct breathing.

Care for Mouth, Jaw and Neck injuries:
- If you do not suspect a serious head, neck or back injury, place the victim in a seated position.
- For injuries that penetrate the lip—
  - Place a rolled dressing between the lip and the gum.
  - Place another dressing on the outer surface of the lip.
  - You may apply ice or a cold pack to the lips.

If the injury knocked out a tooth, control bleeding and save the tooth for replantation. If the person is conscious and able rinse out the mouth with cold tap water, if available.
- Carefully pick up the tooth by the crown, not the root.
- Rinse off the root of the tooth in water if it is dirty, do not scrub.
- If possible, place the tooth in milk. If milk is not available, place the tooth in water.
- If the injury is not severe enough to call 9-1-1 or the local emergency number, the victim should immediately see a dentist.
Specific Injuries to the Head

- Injuries serious enough to fracture or dislocate the jaw can also cause head, neck or back injuries. In these cases:
  - Call 9-1-1 or the local emergency number.
  - Maintain an open airway.
  - Check inside the mouth for bleeding.
  - Control bleeding.
  - Minimize movement of the head, neck and back.

Specific Injuries to the Head

- If the trachea is crushed or has collapsed—
  - Call 9-1-1 or the local emergency number.
  - Keep the victim from moving.
  - Encourage the victim to breathe slowly.
  - Control external bleeding.
  - For a large laceration to the neck, apply an occlusive dressing.

Lower Back Injury

- Using improper techniques when lifting or moving heavy objects is one way to injure the back.
- Often, acute back pain that develops suddenly is a result of one of the following causes:
  - Ligament pulls and muscle strains
  - Extraneous effort that stretches or tears soft tissue that supports the spine
  - Vertebrae displacement
    - Twisting motion that forces vertebrae out of place
    - Slipped (prolapsed) disk
    - Pressure or force which causes the soft center of a disk to protrude through the outer layer
**Lower Back Injury**

- Signals of lower back injury include—
  - Sharp or shooting pain or tightness in the lower back.
  - Sharp pain in one leg.
  - Sharp pain and tightness across the lower back.
  - A sudden, sharp pain in the back and a feeling that something has snapped.
  - Inability to bend over without pain.

**Care for Lower Back Injury**

- Call 9-1-1 or the local emergency number immediately if the victim has any of the following signals:
  - Numbness or tingling in any extremity
  - Difficulty moving
  - Loss of bladder or bowel control
- These signals indicate possible damage to the spinal cord.
- Wait for EMS personnel to arrive.
- Keep the victim warm and quiet.

**Preventing Head, Neck and Back Injury**

- Correctly wear safety belts (lap and shoulder restraints) and place children in car safety seats.
- Correctly wear approved helmets, eyewear, faceguards and mouthguards during activities for which they are recommended.
- Take steps to prevent falls, such as ensuring hallways and stairways in your home are well lit, and stairways have handrails and non-slip treads. Rugs should be secured with double-sided tape or appropriate mats.
- Use non-slip mats in the bathtub or use handrails.
- Always use a stepstool or step ladder to reach objects that are up high. Do not attempt to pull heavy objects that are out of reach over your head.
- Use good lifting techniques when lifting and carrying heavy objects.
- Obey rules in sports and recreational activities.
- Avoid inappropriate use of alcohol and other drugs.
- Inspect work and recreational equipment periodically.
- Do not dive into a body of water if you are unsure of the depth.
- Think and talk about safety and use good common sense.