

Injuries

Skull, Spine, and Chest

The Axial Skeleton

- Includes the skull, spine, and chest
 - Injuries can be VERY serious
 - your major concern is not with the bones, but with the brain, spinal cord, airway, lungs, and heart
 - Carefully assess patient before caring for fractures

The Skull

- Divided into two major structures
 1. The cranium
 2. The face
- 1. The Cranium is made up of flat, irregularly shaped bones
- They are fused together to produce immovable joints, which form a rigid, protective housing for the brain.

The Skull

2. Face

- The face is made up of strong, irregularly shaped bones that are also fused together to make immovable joints, except the mandible.
- They include; part of the eye sockets, the cheeks, the upper part of the nose, the upper jaw and the lower jaw

The Spine

- The spine protects the spinal cord as it runs from the brain down through the back.
- Many of the body's major nerves run into and out of the spinal cord, connecting most areas of the body to the brain.
- The spine also acts as support for the entire body

The Chest

- The ribs protect the structures found in the chest.
- Everyone has 12 ribs and the bottom two ribs are known as “floating ribs”
- Lower ribs help to protect the liver, gallbladder, stomach and spleen.
- The center of the chest is occupied by the heart and major blood vessels leading into and out of the heart.

The Central Nervous System

- Brain, spinal cord, and certain nerves
- Brain controls thinking, heart activity, breathing. The brain tells the muscles to contract so we can move.

- The brain receives messages from all over the body and decides how the body will respond to these messages

Any injury to the skull could injure the brain, causing vital body functions to fail

The Central Nervous System

- Injuries to the spine could cause damage to the spinal cord and isolate a part of the body so that it no longer has contact with the brain.
- If the damage is serious enough, a part of the body may never again be able to move or function again.
- Damage to the spinal cord can take away reflexes in certain areas of the body

Injuries to the Skull

Types of Injuries to the skull

- Fractures to the cranium and face
- Direct injuries to the brain
- Indirect injuries to the brain

- Cuts in the scalp, and other soft tissue injuries

Injuries to the Skull

Open head injury

- bones of the cranium are broken or cracked

Closed head injury

- the cranium is intact and free of fractures

Injuries to the Skull

Concussion

- a blow to the head does not cause an open head injury and damage is so minor that it is not easily detected
- may not be unconscious
- patients will be a little “groggy”
- headache is common
- loss of memory is not common

Signs of Skull Injuries

- Many skull fractures are obvious
 - edges or fragments of bones can be seen
 - in some cases, the brain or pieces of the brain may be visible
- Some skull fractures may be difficult to detect

Signs of Skull Injuries

Consider Cranial Fracture when you note;

- Unconsciousness or a decrease in level of awareness
- An injury that has produced a deep cut, tear, or bruise to the scalp or forehead
- Any pain or swelling at the site of a head injury
- Deformity of the skull

Signs of Skull Injuries

Consider Cranial Fracture when you note;

- Bruise behind the ear
- Black eyes or discoloration under eyes
- One or both eyes appearing sunken
- Unequal pupils
- Bleeding from the ears and/or nose

Signs of Skull Injuries

Consider Cranial Fracture when you note;

- Clear of bloody fluid flowing from the ears and/or nose
 - Cerebrospinal fluid
 - The clear, watery fluid that surrounds the brain and spinal cord
- Deterioration of vital signs

Signs of Skull Injuries

Consider possible facial fractures when you note;

- Blood in the airway
- facial deformities
- Black eyes or discoloration below the eyes
- Swollen lower jaw or poor jaw function
- teeth that are loose or have been knocked out

Signs of Brain Injuries

Consider the possibility of a brain injury if;

- Headache following accident
- Any signs of a skull fracture
- Loss of consciousness
- Confusion or personality changes
- Unequal or unresponsive pupils
- Paralysis (one side of the body)

Signs of Brain Injuries

Consider the possibility of a brain injury if;

- Loss of sensations
- Disturbed or impaired vision, hearing, or sense of balance
- Pulse rate that is slow and full, then becoming fast and weak
- Changing patterns of respiration, usually becoming labored, then rapid, then stopping for a few seconds