

Worksite: _____ Instructor: _____ Date/Time: _____

Topic C106: First Aid for Bone Breaks

Introduction: A fracture is a break in a bone usually accompanied by injury to the surrounding tissue. Most fractures result from an injury, such as an automobile accident, sports, or a fall. A fracture occurs when the force against the bone is greater than the strength of the bone. The direction, speed, and power of the force affect the type and severity of the fracture, as do the age, resilience, and type of bone.

If a bone is fractured, immobilizing it will reduce the potential for further injury and pain to the injured person. Movement of the sharp ends of the bone near the muscle, blood vessels, and nerves can produce significant additional injuries. With broken bone injuries, pain is usually the most obvious symptom. It may be severe and usually worsens with time and movement. Fractures usually cause swelling and bruising at the site. Depending on the type of fracture, a broken limb may appear deformed. A fractured bone may cause blood to leak into the surrounding tissue or from the wound itself.

Visually evaluate the injured person for swelling, lacerations, abrasions, bruising, color, or limb deformity. Stop any bleeding and treat the injured person for shock.

Types of Bone Fractures:

- **Closed fractures** are fractures in which the bone has been broken, but has not penetrated the skin. Closed fractures can range in seriousness from a hairline fracture (a crack along the shaft of the bone) to a comminuted fracture (splintering or crushing of a bone). Closed fractures have the potential to cause significant internal bleeding due to internal lacerations caused by sharp bone ends.
- **Open fractures** are breaks in which the sharp bone end has penetrated the skin's surface. Depending on the location, the laceration caused by the sharp bone may cause serious bleeding. Complications of open fractures include damage to the muscles and nerves, and bone infection. Open fractures are more likely to become infected than closed fractures.
- **Comminuted (pulverized) fractures** result when a severe, direct force causes several breaks, producing several bone fragments. These fractures may heal very slowly if the blood supply to part of the bone is interrupted.
- **Avulsion (separation) fractures** are caused by strong muscle contractions pulling off sections of bone to which the muscle tendon is attached.
- **Dislocations** are very painful and are identified by noticeable deformity because the bones on either side of the joint are out of position.
- **Strains and sprains** may resemble and feel like a closed fracture, should be treated as such until determined by an x-ray.

An injured limb should be moved as little as possible. General first aid for suspected fractures includes the following steps:

- Visually evaluate the injured person for swelling, lacerations, abrasions, bruising, color, or limb deformity.
- Stop any bleeding and treat the injured person for shock.
- Immobilize the injured extremity, including the joint above, and the joint below the injury site. Support the area of injury.
- Never move a suspected spinal or back injury.

Open wounds: The primary considerations in open fractures are to control bleeding and treat for shock. Open wounds should be covered with a sterile pressure dressing and pressure applied to further control bleeding. The limb should then be adequately immobilized.

Conclusion: If an accident involving broken bone injuries occurs (depending on the severity), contact Emergency Medical Services while rendering first aid. If open bleeding is involved, personal protective equipment for bloodborne pathogens should be used. Whatever the case, the injured person needs to be treated by a medical professional to determine the extent of the injury, avoid complications, and ensure proper healing.

Employee Attendance: (Names or signatures of personnel who are attending this meeting)

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