



FIRST AID FOR BROKEN BONES

A fracture is a break in a bone, usually accompanied by injury to the surrounding tissue. Most fractures result from an injury, such as that caused by an automobile accident, sports or a fall. A fractures occurs when the force against a 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 age, resilience and type of bone. Bones weakened by osteoporosis or tumors can be fractured with very little force. Bone breaks of the extremities (arms or legs) rarely pose a life-threatening condition.

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 inside the muscle and in the vicinity of 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. Touching the area around the broken bone is also painful. Fractures usually cause swelling and bruising at the site. Depending on the type of fracture, a broken limb may appear deformed. The limb may not function properly, so that moving an arm, standing on a leg or gripping with a hand is impossible. Blood may leak from a fractured bone, sometimes in large amounts, into the surrounding tissue or out of the wound.

The following is a list of the different types of bone injuries:

- 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 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 from a severe, direct force caused 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. These fractures most commonly occur in shoulders and knees, but can also occur in the legs and heels.
- 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, and if severe, should be treated as such until determined by a x-ray.

If enough lateral force was delivered to fracture a thighbone (femur, a bone covered by thick muscle). Additional injury as well as life-threatening injuries may be present. For example, if a person falls "feet first" for some distance, the obvious injury would be to the feet, legs and possibly the spine. However, secondary injuries could include abdominal injury or head injury from tumbling forward after hitting the ground.

General first aid for suspected fractures include 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 the injury.
- Never more a suspected spinal or back injury.