

# Fracture | definition of fracture by Medical dictionary

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**REVIEWED**
*By Chris at 1:17 pm, Apr 03, 2019*

## fracture

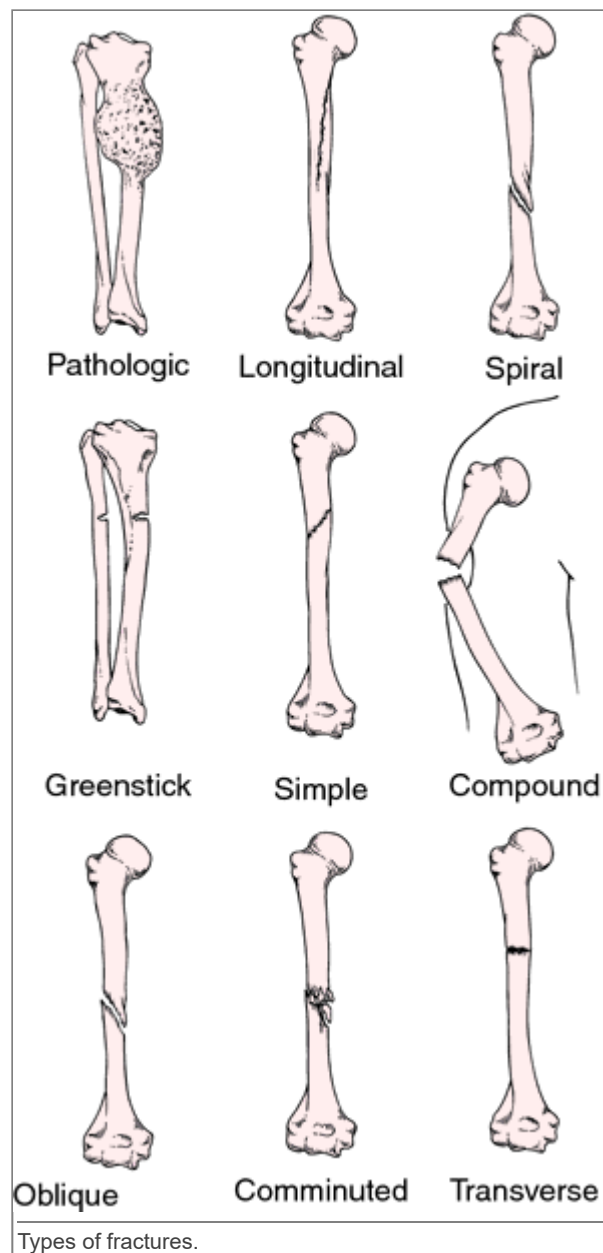
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## fracture [frak'chur]

1. the breaking of a part, especially a bone.
2. a break in continuity of bone; it may be caused by trauma, twisting due to muscle spasm or indirect loss of leverage, or by disease that results in **OSTEOPENIA**. See illustration.

**TREATMENT.** Immediate first aid consists of **SPLINTING** the bone with no attempt to reduce the fracture; it should be splinted "as it lies," which means supporting it in such a way that the injured part will remain steady and will resist jarring if the victim is moved. Later it will be treated by **REDUCTION**, which means that the broken ends are pulled into alignment and the continuity of the bone is established so that healing can take place. Fracture healing is truly a process of regeneration. Fractures heal with normal bone, not with scar tissue. Closed reduction is performed by manual manipulation of the fractured bone so that the fragments are brought into proper alignment; no surgical incision is made. Open fractures are highly contaminated and must be débrided and copiously irrigated in the operating room. A fracture may also require internal fixation with pins, nails, metal plates, or screws to stabilize the alignment. Once closed reduction is accomplished, the bone is immobilized by application of a **CAST** or by an apparatus exerting **TRACTION** on the distal end of the bone.



**avulsion fracture** separation of a small fragment of bone cortex at the site of attachment of a ligament or tendon.

**Barton's fracture** fracture of the distal end of the radius into the wrist joint.

**Bennett's fracture** fracture of the base of the first metacarpal bone, running into the carpometacarpal joint, complicated by subluxation.

**blow-out fracture** fracture of the orbital floor caused by a sudden increase of intraorbital pressure due to traumatic force; the orbital contents herniate into the maxillary sinus so that the inferior rectus or inferior oblique muscle may become incarcerated in the fracture site, producing diplopia on looking up.

**closed fracture** one that does not produce an open wound, as opposed to an **open fracture**. See illustration. Called also **simple fracture**.

**Colles' fracture** fracture of the lower end of the radius, the distal fragment being displaced backward.

**comminuted fracture** one in which the bone is splintered or crushed, with three or more fragments. See illustration.

**complete fracture** one involving the entire cross section of the bone.

**compound fracture** **open fracture**.

**compression fracture** one produced by compression.

**depressed fracture (depressed skull fracture)** fracture of the skull in which a fragment is depressed.

**direct fracture** one at the site of injury.

**dislocation fracture** fracture of a bone near an articulation with concomitant dislocation of that joint.

**double fracture** fracture of a bone in two places.

**Dupuytren's fracture** **Pott's fracture**.

**Duverney's fracture** fracture of the ilium just below the anterior inferior spine.

**fissure fracture** a crack extending from a surface into, but not through, a long bone.

**greenstick fracture** one in which one side of a bone is broken and the other is bent, most commonly seen in children. See illustration.

**impacted fracture** fracture in which one fragment is firmly driven into the other.

**incomplete fracture** one that does not involve the complete cross section of the bone.

**indirect fracture** one distant from the site of injury.

**interperiosteal fracture** **greenstick fracture**.

**intrauterine fracture** fracture of a fetal bone incurred in utero.

**Jefferson's fracture** fracture of the atlas (first cervical vertebra).

**lead pipe fracture** one in which the bone cortex is slightly compressed and bulged on one side with a slight crack on the other side of the bone.

**Le Fort fracture** bilateral horizontal fracture of the maxilla. Le Fort fractures are classified as follows: *Le Fort I fracture*, a horizontal segmented fracture of the alveolar process of the maxilla, in which the teeth are usually contained in the detached portion of the bone. *Le Fort II fracture*, unilateral or bilateral fracture of the maxilla, in which the body of the maxilla is separated from the facial skeleton and the separated portion is pyramidal in shape; the fracture may extend through the body of the maxilla down the midline of the hard palate, through the floor of the orbit, and into the nasal cavity. *Le Fort III fracture*, a fracture in which the entire maxilla and one or more facial bones are completely separated from the craniofacial skeleton; such fractures are almost always accompanied by multiple fractures of the facial bones.

**longitudinal fracture** one extending along the length of the bone. See illustration.

**Monteggia's fracture** one in the proximal half of the shaft of the ulna, with dislocation of the head of the radius.

**oblique fracture** one in which the break extends in an oblique direction. See illustration.

**open fracture** one in which a wound through the adjacent or overlying soft tissue communicates with the outside of the body; this must be considered a surgical emergency. The compounding may come from within (by a bone protruding through the skin) or from without (e.g., by a bullet wound communicating with the bone). See illustration. Called also **compound fracture**.

**pathologic fracture** one due to weakening of the bone structure by pathologic processes such as neoplasia or osteomalacia; see illustration. Called also **spontaneous fracture**.

**perthrochanteric fracture** fracture of the femur passing through the greater trochanter.

**ping-pong fracture** an indented fracture of the skull, resembling the indentation that can be produced with the finger in a ping-pong ball; when elevated it resumes and retains its normal position.

**Pott's fracture** fracture of lower part of the fibula with serious injury of the lower tibial articulation.

**simple fracture** **closed fracture**.

**Smith's fracture** reversed Colles' fracture.

**spiral fracture** one in which the bone has been twisted and the fracture line resembles a spiral. See illustration.

**spontaneous fracture** **pathologic fracture**.

**sprain fracture** the separation of a tendon from its insertion, taking with it a piece of bone.

**stellate fracture** one with a central point of injury, from which radiate numerous fissures.

**Stieda's fracture** a fracture of the internal condyle of the femur.

**transcervical fracture** one through the neck of the femur.

**transverse fracture** one at right angles to the axis of the bone. See illustration.

**trophic fracture** one due to a nutritional (trophic) disturbance.

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## frac·ture (Fx), (frak'chūr),

1. To break.
  2. A break, especially the breaking of a bone or cartilage.
- [L. *fractura*, a break]

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## fracture /frac·ture/ (frak'cher)

1. the breaking of a part, especially a bone.
2. a break or rupture in a bone.

**avulsion fracture** separation of a small fragment of bone cortex at the site of attachment of a ligament or tendon.

**axial compression fracture** fracture of a vertebra by excessive vertical force so that pieces of it move out in horizontal directions.

**Barton's fracture** fracture of the distal end of the radius into the wrist joint.

**Bennett's fracture** fracture of the base of the first metacarpal bone running into the carpometacarpal joint, complicated by subluxation.

**blow-out fracture** fracture of the orbital floor caused by a sudden increase of intraorbital pressure due to traumatic force; the orbital contents herniate into the maxillary sinus so that the inferior rectus or inferior oblique muscle may become incarcerated in the fracture site, producing diplopia on looking up.

**burst fracture** **axial compression f.**

**capillary fracture** one that appears on a radiogram as a fine, hairlike line, the segments of bone not being separated; sometimes seen in fractures of the skull.

**closed fracture** one that does not produce an open wound in the skin; cf. **open f.**

**Colles' fracture** fracture of the lower end of the radius, the lower fragment being displaced backward; if the lower fragment is displaced forward, it is a *reverse Colles' fracture*.

**comminuted fracture** one in which the bone is splintered or crushed.

**complete fracture** one involving the entire cross section of the bone.

**compound fracture** [open f.](#)

**depressed fracture** , **depressed skull fracture** fracture of the skull in which a fragment is depressed.

**de Quervain's fracture** fracture of the navicular bone together with a volar luxation of the lunate bone.

**direct fracture** one at the site of injury.

**dislocation fracture** fracture of a bone near an articulation with concomitant dislocation of that joint.

**Dupuytren's fracture** [Pott's f.](#)

**Duverney's fracture** fracture of the ilium just below the anterior inferior spine.

**fissure fracture** a crack extending from a surface into, but not through, a long bone.

**freeze fracture** see [freeze-fracturing](#).

**greenstick fracture** one in which one side of a bone is broken, the other being bent.

**hangman's fracture** fracture through the pedicles of the axis (C2) with or without subluxation of the second cervical vertebra or the third.

**impacted fracture** one in which one fragment is firmly driven into the other.

**incomplete fracture** one which does not entirely destroy the continuity of the bone.

**insufficiency fracture** a stress fracture that occurs during normal stress on a bone of abnormally decreased density.

**intrauterine fracture** fracture of a fetal bone incurred [in utero](#).

**Jefferson's fracture** fracture of the atlas (first cervical vertebra).

**lead pipe fracture** one in which the bone cortex is slightly compressed and bulged on one side with a slight crack on the other side of the bone.

**Le Fort fracture** bilateral horizontal fracture of the maxilla. Le Fort fractures are classified as follows: *Le Fort I f.*, a horizontal segmented fracture of the alveolar process of the maxilla, in which the teeth are usually contained in the detached portion of the bone. *Le Fort II f.*, unilateral or bilateral fracture of the maxilla, in which the body of the maxilla is separated from the facial skeleton and the separated portion is pyramidal in shape; the fracture may extend through the body of the maxilla down the midline of the hard palate, through the floor of the orbit, and into the nasal cavity. *Le Fort III f.*, a fracture in which the entire maxilla and one or more facial bones are completely separated from the craniofacial skeleton; such fractures are almost always accompanied by multiple fractures of the facial bones.

**Monteggia's fracture** one in the proximal half of the shaft of the ulna, with dislocation of the head of the radius.

**open fracture** one in which a wound through the adjacent or overlying soft tissues communicates with the site of the break.

**parry fracture** [Monteggia's f.](#)

**pathologic fracture** one due to weakening of the bone structure by pathologic processes, such as neoplasia, osteomalacia, or osteomyelitis.

**ping-pong fracture** a type of depressed skull fracture usually seen in young children, resembling the indentation that can be produced with the finger in a ping-pong ball; when elevated it resumes and retains its normal position.

**Pott's fracture** fracture of the lower part of the fibula, with serious injury of the lower tibial articulation, usually a chipping off of a portion of the medial malleolus, or rupture of the medial ligament.

**pyramidal fracture (of maxilla)** [Le Fort II f.](#)

**sagittal slice fracture** fracture of a vertebra breaking it in an oblong direction; the spinal column above is displaced horizontally, usually causing paraplegia.

**silver fork fracture** [Colles' f.](#)

**simple fracture** [closed f.](#)

**Smith's fracture** [reverse Colles' f.](#)

**spiral fracture** one in which the bone has been twisted apart.

**spontaneous fracture** [pathologic f.](#)

**sprain fracture** the separation of a tendon from its insertion, taking with it a piece of bone.

**Stieda's fracture** fracture of the internal condyle of the femur.

**stress fracture** that caused by unusual or repeated stress on a bone.

**transverse facial fracture** [Le Fort III f.](#)

**transverse maxillary fracture** a term sometimes used for horizontal maxillary fracture ([Le Fort I f.](#)).

**trophic fracture** one due to nutritional (trophic) disturbance.

**wedge-compression fracture** compression fracture of only the anterior part of a vertebra, leaving it wedge-shaped.

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## fracture (frăk'chər)

*n.*

1. The act or process of breaking.
2. A break, rupture, or crack, especially in bone or cartilage.

*v.*

To cause to break.

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## fracture

[frak'chər]

Etymology: L, *frangere*, to break

**1** the breaking of a part, especially of a bone or tooth.

**2** a traumatic injury to a bone in which the continuity of the bone tissue is broken. A fracture is classified by the bone involved, the part of that bone, and the nature of the break, such as a comminuted fracture of the head of the tibia. See also specific types of fractures.

Mosby's Medical Dictionary, 9th edition. © 2009, Elsevier.

**fracture** A breaking of bone or other hard tissue. See [Avulsion fracture](#), [Axial-load teardrop fracture](#), [Basal skull fracture](#), [Bennett fracture](#), Blow-out fracture, [Boxer's fracture](#), [Bucket handle fracture](#), [Bumper fracture](#), [Cavalry fracture](#), Chauffeur's fracture, [Chip fracture](#), [Chisel fracture](#), Clay shoveler's fracture, [Closed fracture](#), Colles' fracture, [Comminuted fracture](#), [Complete fracture](#), [Compound fracture](#), [Compression fracture](#), [Dashboard fracture](#), [DeQuervain's fracture](#), Direct fracture, Dislocation fracture, Don Juan fracture, [Double fracture](#), Dupuytren fracture, Essex-Lopresti fracture, [Fatigue fracture](#), [Greenstick fracture](#), [Hangman's fracture](#), [Hip fracture](#), [Hairline fracture](#), [Impacted fracture](#), [Incomplete fracture](#), Insufficiency fracture, [Jefferson fracture](#), [Jones fracture](#), [LeFort fracture](#), [Linear fracture](#), Linear skull fracture, Maisonneuve ankle fracture, [March fracture](#), Microfracture fracture, [Monteggia fracture](#), [Nightstick fracture](#), [Nonunion fracture](#), Oblique fracture, [Odontoid fracture](#), [Open fracture](#), Open book fracture, [Pathologic fracture](#), [Piedmont fracture](#), Ping pong fracture, [Ring fracture](#), [Rolando fracture](#), [Skull fracture](#), [Stellate fracture](#), [Stress fracture](#), [Teardrop fracture](#), [Telescoping fracture](#), [Torus fracture](#), [Tripod fracture](#), Wagon wheel fracture, [Wagstaffe fracture](#), [Wedge fracture](#).

## frac·ture (frak'shŭr)

1. To break.
  2. A break, especially the breaking of a bone or cartilage.
  3. A break in the continuity of the bone and damage to surrounding tissues.
- [L. *fractura*, a break]

Medical Dictionary for the Health Professions and Nursing © Farlex 2012

## fracture (frak'chur) [L. *fractura*, a break]

1. An injury that upon assessment is painful, swollen, and deformed.
2. A break of a bone. See: *illustration*

### Causes

Fractures may be due to pathology, direct violence, indirect violence, or muscular contraction. In a pathological fracture, bones break, spontaneously and without trauma, due to certain diseases and conditions like cancer, osteomalacia, syphilis, and osteomyelitis. In a fracture due to direct violence, the bone breaks at the spot where the force was applied, as in fracture of a crushed tibia. In a fracture due to indirect violence, the bone is fractured by a force applied at a distance from the site of fracture and transmitted to the fractured bone, as a fracture of the clavicle by a fall on an outstretched hand. In a fracture due to muscular contraction, the bone breaks from a sudden, violent contraction of the muscles.

### Signs

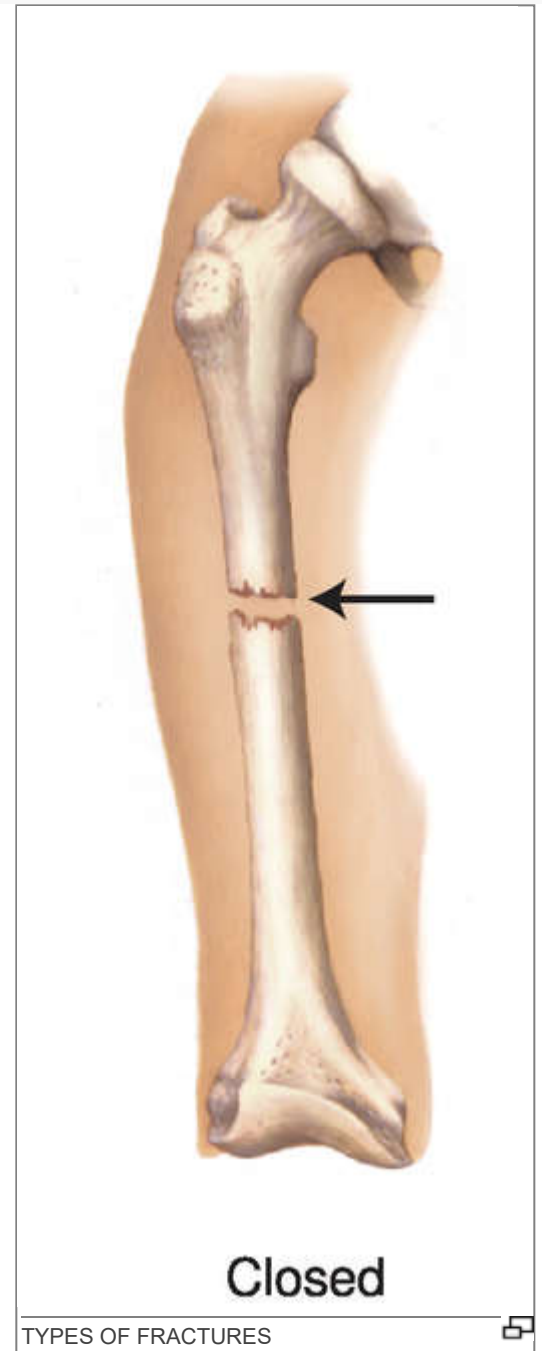
Signs include loss of the power of movement, pain with acute tenderness over the site of fracture, swelling and bruising, deformity and possible shortening, unnatural mobility, and crepitus or grating heard when the ends of the bone rub together.

### Treatment

Immediate first aid includes splinting of the fracture site and joints above and below it to limit further movement and displacement. Applying a cold pack to the fracture site and elevating it above the level of the heart may limit pain and swelling. Radiography should be used to identify the fracture and the exact position of the bone fragments.

The physician reduces the fracture. The bone is kept in position by a cast or splint until union has taken place. Afterwards the limb is restored to complete function by physical therapy and exercise.

In open or compound fractures, bleeding must be arrested before the fracture is treated. Initially, the open fracture should be covered with a clean or sterile dressing and the fracture site immobilized. Open reduction may be required. The wound is then washed and cleaned





with sterile saline. If the area is grossly contaminated, mild soap solution may be used provided it is thoroughly washed away with generous amounts of sterile saline. When the wound is clean, a sterile dressing is secured by a bandage. The bone may then be immobilized by external fixation until the wound heals.

Skeletal traction may be used instead of a cast or external fixator for certain fractures, such as femoral shaft fractures. Pins are placed in the bone, and the bone ends are held in place by pulleys and weights until union occurs.

If the bone does not heal, a weak electric current applied to the bone ends (bone stimulation) may promote healing. Hip fractures require gentle handling and immobilization to prevent displacement of the fracture, aggravation of bleeding, or disruption of a pelvic hematoma. Open reduction with internal fixation may be required and is performed when the patient is judged to be hemodynamically stable.

### **CAUTION!**

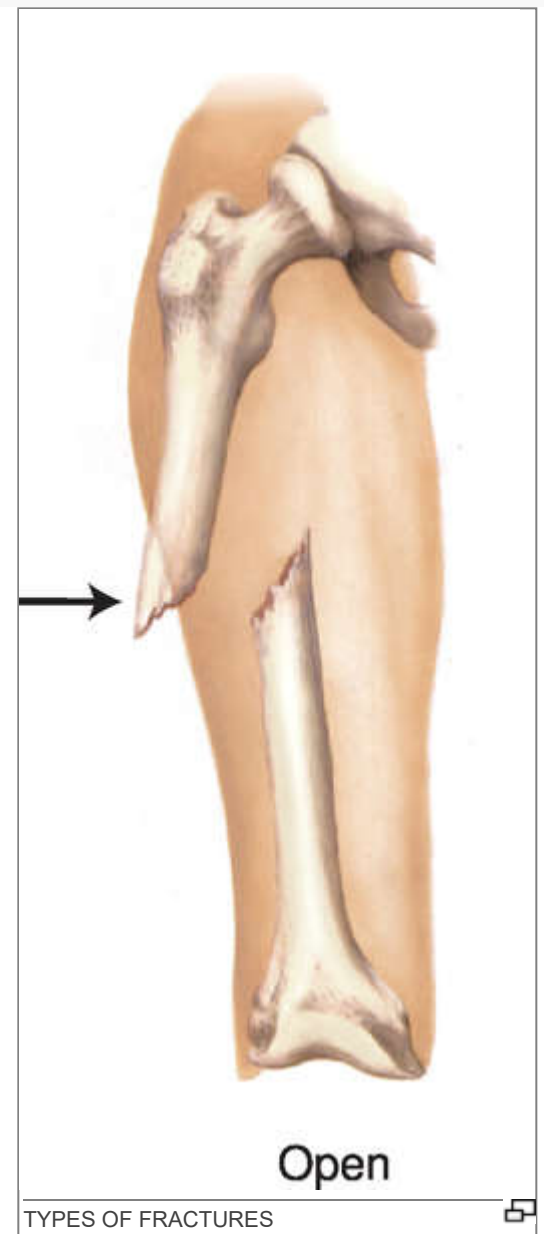
First aid for fractures of the spine requires extreme care in moving the patient. Unnecessary or improper movement may injure or even transect the spinal cord. Stabilizing the patient on a rigid board, with full spinal protection, is necessary until x-ray studies reveal the spine is stable.

### **Patient care**

Vascular and neurological status of the limb distal to the fracture site are monitored before and after immobilization with traction, casting, or fixation devices. Pain is assessed and managed with prescribed analgesics and noninvasive measures. All procedures and related sensations are explained, and reassurance given.

The patient is evaluated for fat embolism after long bone fractures, for infection in open fractures, for excessive blood loss and hypovolemic shock, and for delayed union or nonunion during healing and follow-up. The patient should report signs of impaired circulation (skin coldness, numbness, tingling, discoloration, and changes in mobility) and is taught how to care for the cast or splint and the correct use of assistive devices (slings, crutches, walker). ;

*illustration*



### **avulsion fracture**

The pulling away of the bony attachment site of tendons, ligament, joint capsule, or fascia. Avulsion fractures of tendons are usually caused by a forceful contraction of the muscle. Ligamentous avulsions are caused by forcing the joint beyond its normal range of motion and are often associated with sprains or dislocations.

*illustration*

### **bend fracture**

**Plastic deformation of bone.**

### **Bennett fracture**

See: **Bennett fracture**

## bimalleolar fracture

A fracture of the medial and lateral malleoli of the ankle joint.

## blow-out fracture

See: [orbital blow-out fracture](#)

## blow-up fracture

A fracture of the bony orbit above the eye. It may result in entrapment of the superior rectus muscle with a consequent inability to gaze downward.

## bowing fracture

A bending or curving fracture of a bone (usually of the forearm) due to a traumatic load that compresses the bone along its long axis.

## boxer's fracture

A fracture of the distal end of the fourth or fifth metacarpal with posterior displacement of the proximal structures. The injury usually occurs after a punch is thrown with a unprotected fist.

## buckle fracture

[Torus fracture.](#)

## burst fracture

A vertebral fracture similar to a compression fracture but typically more severe and involving displacement of the bony fragments.

See: [compression fracture](#)

## chauffeur's fracture

A colloquial term for a fracture of the radial styloid with the carpal joint.

## childhood accidental spiral tibial fracture

Abbreviation: **CAST**

[Toddler's fracture.](#)

## fracture of clavicle

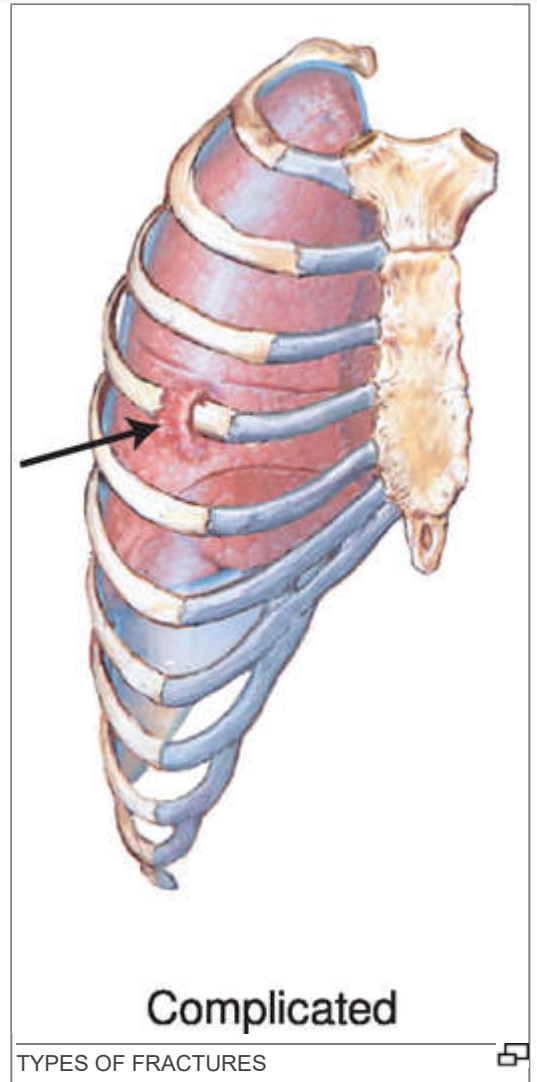
Physical injury of the clavicle sufficient to fracture it, often as a result of a fall on an outstretched arm (from a ladder or bicycle) or direct impact to the bone. Most clavicular fractures involve the distal one third of the bone.

### Symptoms

Symptoms include swelling, pain, and protuberance with a sharp depression over the injured bone. Palpable deformity and crepitus are commonly present.

### Treatment

If indicated, an emergency care physician or an orthopedist will reduce the fracture. This usually is done by elevating the arm and lateral fragment so they line up with the medial fragment. The position is maintained by a clavicle strap, spica cast, immobilizing sling, or figure-of-eight wrap between the shoulders and over the back. Healing takes from about 6 to 8 weeks.





## First Aid

A ball of cloth or one or two handkerchiefs are tightly rolled and placed under the armpit. An arm sling is applied and the elbow bandaged to the side, with the hand and forearm extending across the chest. Alternatively, the patient may lie on his or her back on the floor with a rolled-up blanket under the shoulders until medical aid arrives. This position keeps the shoulders back and prevents the broken ends of the bone from rubbing.

## clay shoveler's fracture

A colloquial term for a fracture of the base of the spinous process of the lower cervical spine associated with sudden flexion of the neck. It may also be caused by direct trauma.

## closed fracture

A fracture of the bone with no skin wound.

## Colle fracture

See: [Colles](#), [Abraham](#)

## comminuted fracture

A fracture in which the bone is broken or splintered into pieces.

## complete fracture

A fracture in which the bone is completely broken (i.e., neither fragment is connected to the other).

## complicated fracture

A fracture in which the bone is broken and has injured some internal organ, such as a broken rib piercing a lung.

## compound fracture

A fracture in which fragments of bone protrude through the skin or in which there is a break in the skin or soft tissue at the fracture site. Such a fracture exposes the wound to possible infection. Synonym: *open fracture*

## compression fracture

A fracture of a vertebra by pressure along the long axis of the vertebral column. Such fractures, which may occur traumatically or as a result of osteoporosis, are marked by loss of bone height.

## curbstone fracture

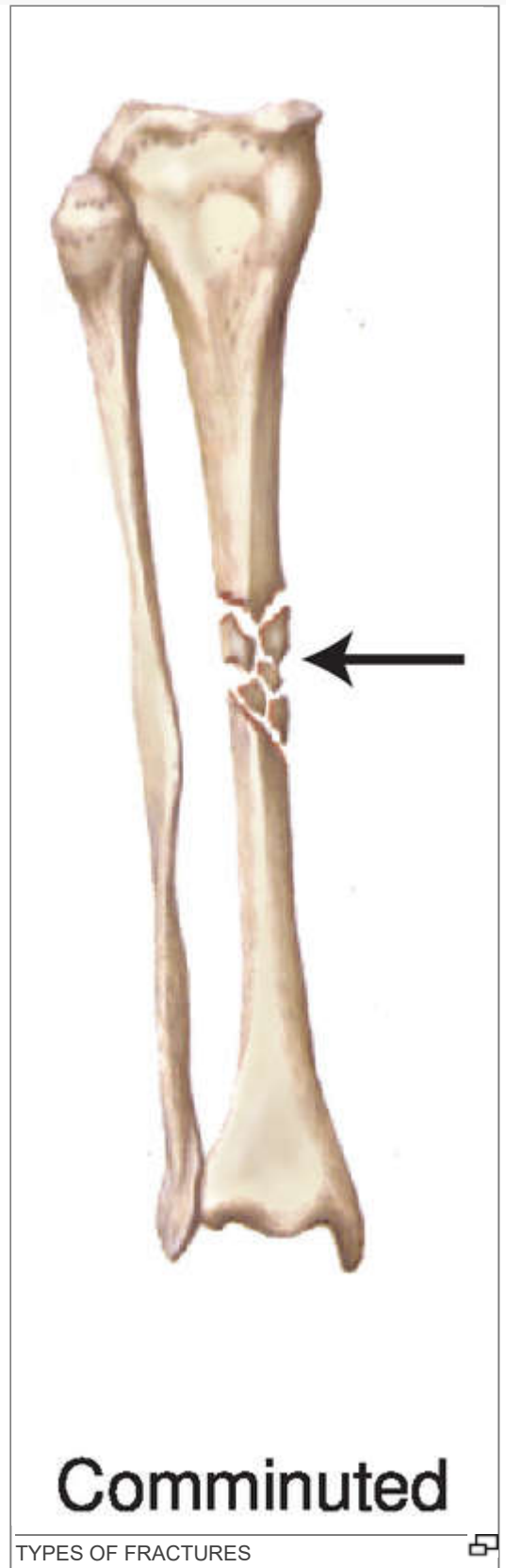
An avulsion fracture of the posterior margin of the tibia, typically due to striking the dorsal surface of the foot on an unyielding surface, such as a curb.

## depressed fracture

A fracture in which a piece of bone (as of the skull or ribs) is broken and driven inward.

## diastatic fracture

A fracture that follows a cranial suture and causes it to separate.



**direct fracture**

A fracture at a site where force was applied.

**dislocation fracture**

A fracture near a dislocated joint. See: [dislocation](#)

**double fracture**

Two fractures of the same bone.

**Dupuytren fracture**

See: [Dupuytren, Baron Guillaume](#)

**Duverney fracture**

See: [Duverney, Joseph G.](#)

**epiphyseal fracture**

A separation of the epiphysis from the bone between the shaft of the bone and its growing end. It occurs only in skeletally immature patients. See: [Salter-Harris fracture](#).

**fatigue fracture**

[Stress fracture](#).

**fissured fracture**

A narrow split in the bone that does not go through to the other side of the bone.

**flexion-teardrop fracture**

An unstable fracture of the cervical spine in which a small fragment of the anteroinferior corner of a vertebral body avulses from the rest of the vertebra due to massive flexion applied to the cervical spine. Patients with this fracture have sustained injuries to all the spinal ligaments and usually severe spinal cord injury and quadriplegia.

**fragility fracture**

A fracture that occurs in a bone weakened by osteoporosis.

**greenstick fracture**

A fracture in which the bone is partially bent and partially broken, as when a green stick breaks. It occurs in children, esp. those with rickets. There is a compression fracture on the concave side of the bend and a tension fracture on the convex side.

**hairline fracture**

A minor fracture in which all the portions of the bone are in perfect alignment. The fracture is seen on a radiograph as a very thin line lying between the two segments and not extending through the bone.

**hangman's fracture**

A bipedicular fracture of the second cervical vertebra, often with a concomitant dislocation of the vertebra. The term originates from properly performed judicial hangings. At the moment when the dropped criminal fully



extends the rope, the hangman's knot causes fracture dislocation of the upper cervical spine and transection of the spinal cord or medulla. If the knot is not made or applied properly, death is usually due to asphyxia. Contemporary hangman's fractures occur mostly in automobile accidents or athletic competitions.

## hip fracture

A fracture of the proximal portion of the femur, i.e., of either the head, neck, intertrochanteric or subtrochanteric regions of the hip. Hip fracture occurs each year in approximately 225,000 Americans over 50. It is more common in women than in men due to osteoporosis and is esp. common in slender, elderly women. Mortality rates after hip fracture are influenced by the patient's age, general physical health, and the type of fracture.

## Etiology

Osteoporosis predisposes an elderly person to hip fracture.

## Symptoms

Pain in the knee or groin is the classic presenting sign of a hip fracture. If the femur is displaced, shortening and rotation of the leg may be present.

## Treatment

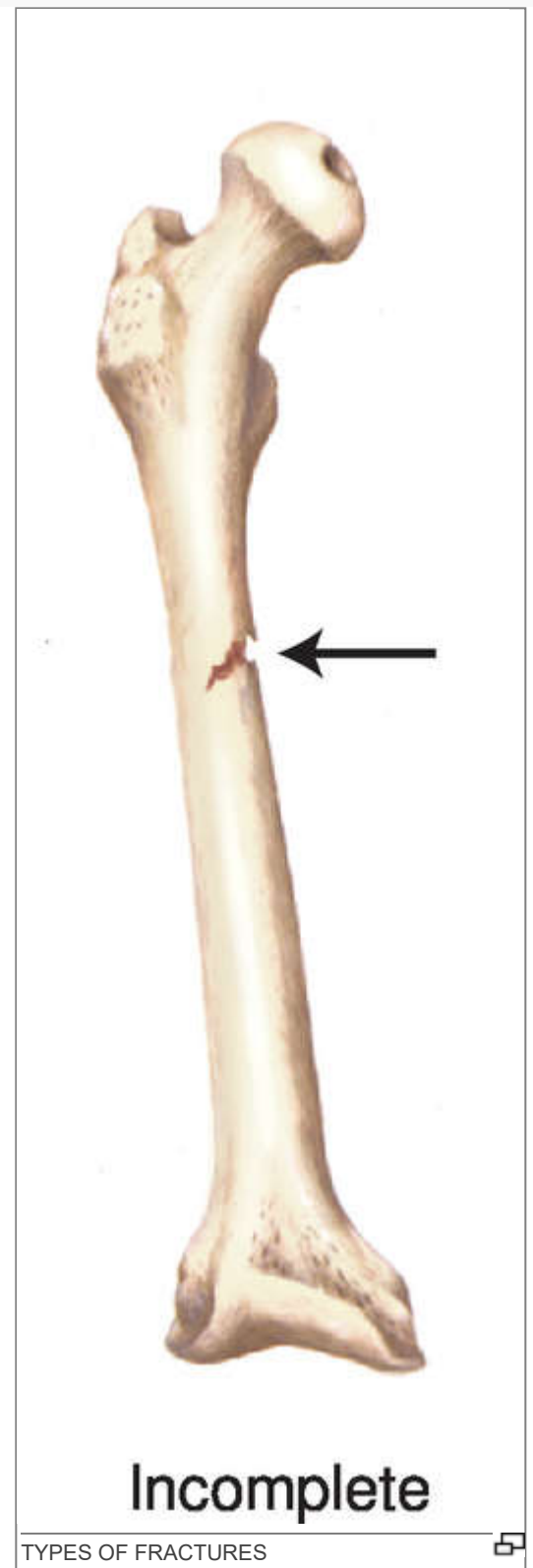
Preoperatively, Buck's traction may be used in the short term to alleviate muscle spasms. An open reduction is the preferred surgical treatment. A femoral prosthesis may be used for femoral neck or head fractures. The bone takes 6 to 12 weeks to heal in an elderly patient.

## Patient care

During hospitalization, general patient care concerns apply. The patient is prepared physically and emotionally for surgery according to the orthopedic surgeon's protocol, and postsurgical care and pain control (epidural or intravenous patient-controlled analgesia [PCA]) is discussed. Neurovascular status of the affected limb is assessed according to protocol and compared to the unaffected limb. The patient is referred for physical and occupational therapy and uses a walker until the bone is completely healed. Prevention and relief of pain and monitoring of postoperative complications, including infection, hip dislocation, and deep venous thrombosis or pulmonary embolism, are primary concerns. Use of an incentive spirometer is encouraged to prevent atelectasis and respiratory complications. Prophylactic antibiotics and anticoagulants are administered as prescribed, and hip precautions are implemented to prevent dislocation. These precautions include having the patient avoid hip adduction (usually by an abductor wedge), rotation, and flexion greater than 90° during transfer and ambulation activities, and by using a raised toilet seat and semi-reclining chair. The patient is typically hospitalized for 2 to 4 days and then discharged to a nursing home, subacute unit, transitional care unit, rehabilitation center, or home for rehabilitation for several weeks.

## fracture of humerus

Disruption of the bony cortex of the upper arm. If the fracture is of the upper end of the humerus, the arm is abducted and splinted for about 4 weeks. Movements of the elbow and wrist are started early, and active movements



of the shoulder are begun in about 3 weeks. See: *illustration*; [acromiohumeral](#); [capitellum](#); [cubitus](#); [glenoid cavity](#)

In a fracture of the shaft and lower end of the humerus, the limb is put in a cast in a position midway between pronation and supination with the humerus at right angles to the forearm. Movement of the shoulder, wrist, and finger is allowed.

### **impacted fracture**

A fracture in which the bone is broken and one end is wedged into the interior of the opposing end.

### **incomplete fracture**

A fracture in which the line of fracture does not transverse the bone.

### **indirect fracture**

A fracture distant from the place where the force was applied.

### **insufficiency fracture**

A stress fracture occurring in abnormal bone (e.g., osteoporotic bone) subjected to normal forces.

### **intracapsular fracture**

A fracture occurring within the capsule of a joint.

### **intrauterine fracture**

A broken fetal bone.

### **Jefferson fracture**

See: [Jefferson fracture](#)

### **Jones fracture**

See: [Jones fracture](#)

### **lead pipe fracture**

A fracture in which the bone is compressed and bent so that one side of the fracture bulges and the other side shows a slight fracture line.

### **LeFort fracture**

A fracture usually involving more than one of the facial bones: maxillary, nasal, orbital, and/or zygomatic.

Synonym: *mid-face fracture*

### **lover's fracture**

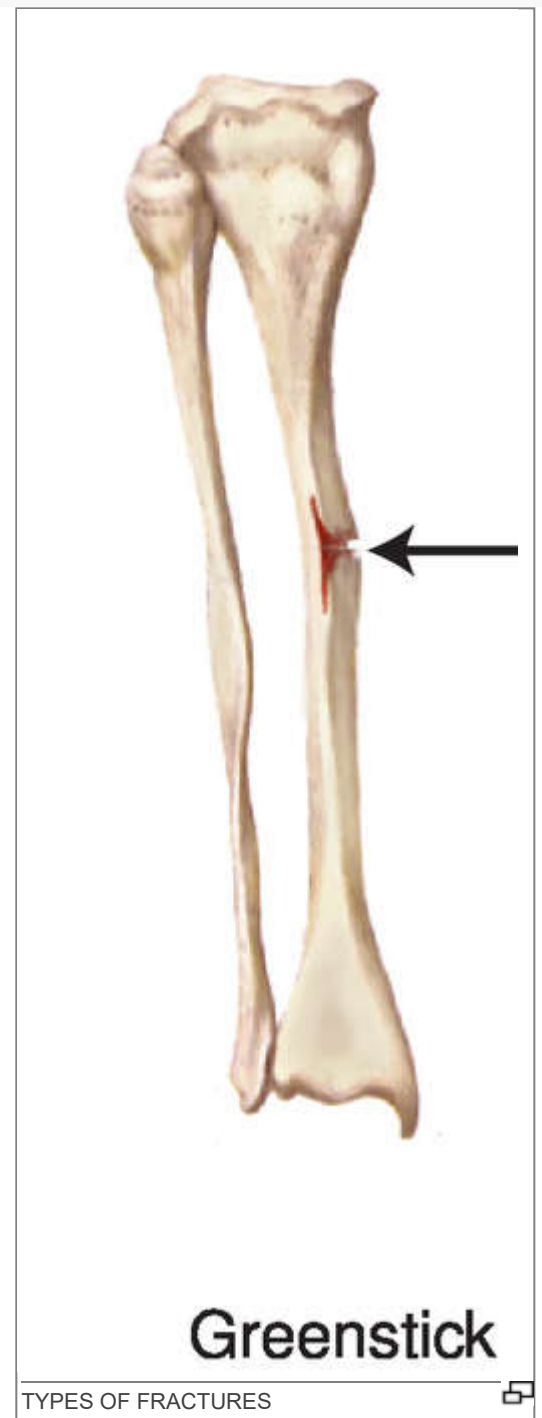
A colloquial term for a fracture of the calcaneus, due to jumping from a height, e.g., a balcony or second-story window.

### **march fracture**

A fracture of the metatarsals as a result of overuse.

### **mid-face fracture**

[LeFort fracture](#)



## Monteggia fracture

See: [Monteggia fracture](#)

## nightstick fracture

A nondisplaced transverse fracture of the ulna resulting from a direct blow.

## nonunion of fracture

See: [nonunion](#)

## occult fracture

A fracture that is suspected based on clinical grounds (e.g., guarding, pain, and swelling) but not seen on x-rays. The fracture may be seen with bone scans or magnetic resonance imaging.

## open fracture

[Compound fracture.](#)

## orbital blow-out fracture

A fracture of the bony floor beneath the eye. It typically results in entrapment of the inferior rectus muscle, with a consequent inability to look upward with the affected eye, which causes double vision during vertical gaze.

## open-book fracture

A fracture in which the pubic symphysis is broken apart, e.g., in a high-speed, front-end automobile crash. The pelvis can separate in the front even though it remains held in place posteriorly by the spine or posterior ligaments.

## overriding fracture

[Overriding.](#)

## pathological fracture

A fracture of a diseased or weakened bone caused by a force that would not have fractured a healthy bone. The underlying disease may be a metastasized cancer, primary cancer of the bone, or osteoporosis.

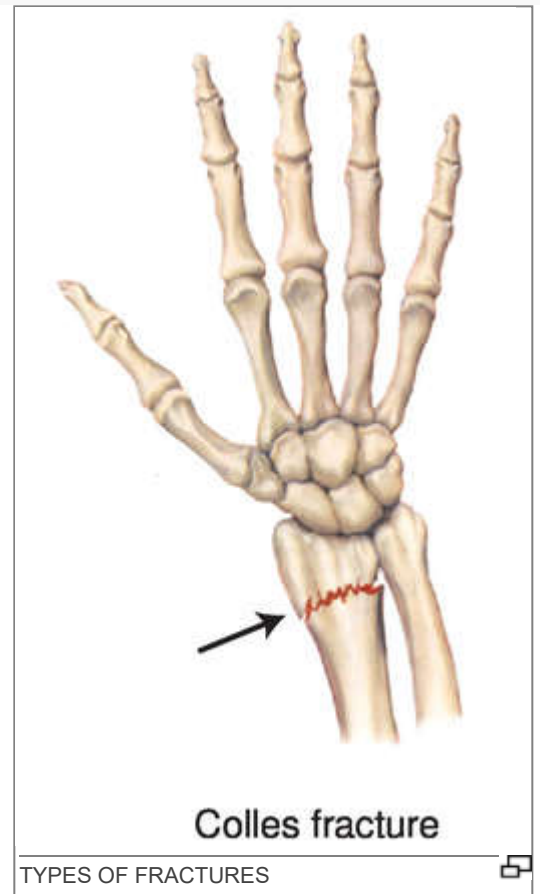
## Patient care

The limbs and joints of at-risk patients are gently and carefully supported when repositioning, exercising, or mobilizing. If such patients fall or are injured, and report limb, pelvic, or back pain or inability to bear weight, the patient and the affected limb should be stabilized and - diagnostic imaging obtained.

## pelvic fracture

Fracture of one of more of the bones of the pelvis, i.e. of the ilium, ischium, or pubis. Pelvic fractures occur after falls, esp. in the elderly, in whom the pelvic bones may be weakened by osteoporosis, and after high-impact trauma, e.g., motor vehicle crashes. Some pelvic fractures are accompanied by internal organ damage, esp. to the genitourinary organs. Regaining the ability to walk after pelvic fracture sometimes requires months of rehabilitation.

## penile fracture





Sudden trauma to the tunica albuginea of the penis, resulting in a rupture of the corpus cavernosum and sometimes a tearing of the urethra. The injury typically occurs during sexual intercourse (or, less often, during masturbation) and may be accompanied by bleeding into the penis.

## ping-pong fracture

A depressed skull fracture in a newborn or very young infant in which the bone bends inward (like a dented ping-pong ball) without breaking. It may occur during strenuous labor and delivery, or in trauma to the pliant skull in the first weeks of life.

## Pott fracture

See: [Pott, John Percivall](#)

## retrochanteric fracture

A fracture that passes through the greater trochanter of the femur.

## Rolando fracture

See: [Rolando fracture](#)

## simple fracture

A fracture without rupture of ligaments and skin.

## fracture of skull

, fractured skull

Loss of the integrity of one or more bones of the cranium. A fracture is classified according to whether it is in the vault or the base but, from the point of view of treatment, a more useful classification is differentiating between a *simple fracture* (uncommon) and a *compound fracture*. When a compound fracture occurs in the vault of the skull, the bone is depressed and driven inward, possibly damaging the brain. Treatment is operative.

See: *fracture*

## sleeve fracture

An avulsion fracture of the patella that typically occurs as a result of a sudden strong contraction of the quadriceps muscle group.

## Smith fracture

See: [Smith fracture](#)

## snowboarder's fracture

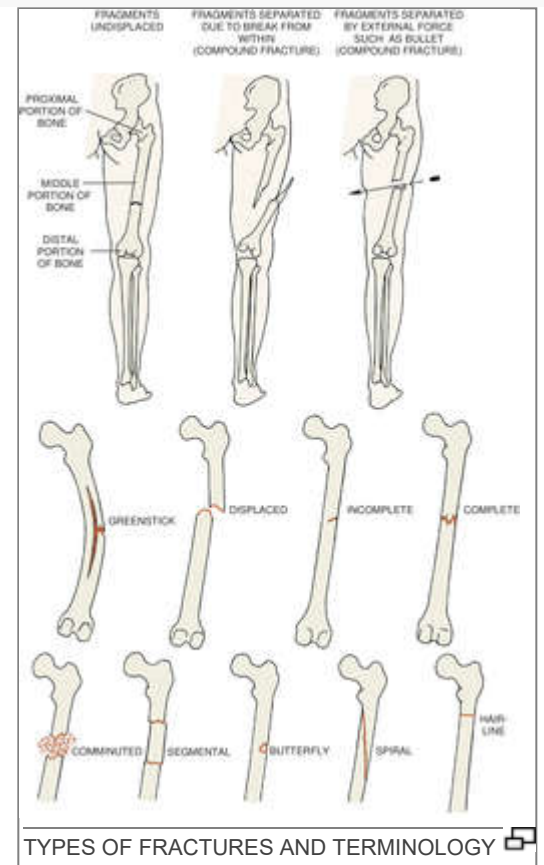
A fracture of the lateral border of the talus caused by inversion and rotation of the talus within the mortise. Signs and symptoms often mimic those of an inversion (lateral) ankle sprain.

## fracture of the spine

Fracture of a vertebral body or its bony prominences. Synonym: *vertebral fracture* See: [burst fracture](#); [compression fracture](#); [hangman's fracture](#); [Jefferson fracture](#)

## Treatment

The patient is carefully assessed for evidence of neuromuscular compromise and other internal injuries. To prevent complications and promote healing, vests, casts, or halo devices may be used, depending on the location of the fracture. A



TYPES OF FRACTURES AND TERMINOLOGY



FRACTURE OF THE HUMERUS: Radiographic image of a fracture of the humerus (COURTESY of W. Robert Strauss, Jr.)



program of supervised physical therapy may be needed during recovery.

## Prognosis

Prognosis depends on the type of spinal fracture and associated spinal cord involvement.

## spiral fracture

A fracture that follows a helical line along and around the course of a long bone.

## sprain fracture

The separation of a ligament from its insertion, taking with it a piece of the bone.

See: [avulsion fracture](#)

## stellate fracture

A fracture with numerous fissures radiating from the central point of injury.

## straddle fracture

A traumatic fracture of all four pubic rami, often associated with injury to the urethra.

## stress fracture

A microfracture that appears without evidence of a single traumatic onset. This type of fracture is difficult to diagnose by standard radiography and may not become visible until 3 to 4 weeks after the onset of symptoms. Scintigraphy, CT, and/or MRI may lead to earlier identification of the fracture lines. Stress fractures occur from repetitive microtraumas (from running, aerobic dancing, or marching or other cyclical actions), from improper shoes on hard surfaces, or from inadequate healing time after stress. Stress fractures are classified as fatigue fractures or insufficiency fractures based on their etiology. Undiagnosed and untreated stress fractures may progress to frank fractures. Synonym: *fatigue fracture* See: [insufficiency fracture](#)

## T fracture

A fracture in which bone splits both longitudinally and transversely.

## toddler's fracture

A fracture of the distal third of the tibia, sustained in a child typically aged 2 to 4. The child may limp or refuse to walk because of pain. The fracture may not be easily seen on plain radiographs.

Synonym: *childhood accidental spiral tibial fracture*

## torus fracture

A fracture where the structure of one side of the bone is compressed, while the opposite side deflects from the growth plate, leaving the cortex intact.

Synonym: *buckle fracture*

## transcervical fracture

A fracture through the neck of the femur.

## transverse fracture

A fracture in which the fracture line is at right angles to the long axis of the bone.

## trimalleolar fracture

A fracture of the lateral and medial malleoli of the ankle joint with an additional fracture of the posterior edge of the distal tibia.

## tripod fracture

A fracture in which the zygoma is separated from its attachment to the maxilla and the temporal and frontal bones.

## vertebral fracture

## Fracture of the spine.

### Wagstaffe fracture

See: [Wagstaffe fracture](#)*illustration*

Medical Dictionary, © 2009 Farlex and Partners

**fracture** A break, usually of a bone. This occurs when excessive force is applied to a healthy bone or when lesser force is applied to a bone generally weakened by a disease such as **OSTEOPOROSIS**, or locally weakened by a tumour or cyst. Such a fracture is called a pathological fracture. Fractures may be transverse, oblique or spiral, or the bone may be shattered into pieces (comminuted). Young bone, subjected to bending stress, often fractures on one side but bends on the other. This is called a 'greenstick' fracture. In simple fractures the overlying soft tissue is intact. In compound fractures, the fractured bone is exposed and infected. In complicated fractures there is also injury to other nearby structures such as major blood vessels and nerves. Fracture-dislocations pass across a joint and the normal relationship of the joint surfaces to one another is altered.

Collins Dictionary of Medicine © Robert M. Youngson 2004, 2005

## Fracture

A break or crack in a bone.

Mentioned in: [Bone Disorder Drugs](#), [Mallet Finger](#), [Pelvic Fracture](#)

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**fracture** breach in continuity of a bone as a result of injury. Known as a **closed fracture** when there is no break in the skin or **open (compound)** when there is a wound linking the broken bone to the outside of the body; **comminuted** when a bone is broken into several pieces, splintered or crushed; **complicated** when there is injury to surrounding organs and structures; **depressed** when the broken bone presses on an underlying structure, e.g. brain or lung; **impacted** when one part of the broken bone is driven into the other; **incomplete** when the bone is only cracked or fissured, called a **greenstick** fracture in children. A **pathological** fracture can occur in abnormal bone (e.g. with a cancerous deposit) as a result of force which would not break a normal bone; also known as a **spontaneous** fracture when there is no appreciable violence.

Dictionary of Sport and Exercise Science and Medicine by Churchill Livingstone © 2008 Elsevier Limited. All rights reserved.

**fracture** breakage of bone or cartilage; all fractures are treated by the same principles of rest and immobilization (e.g. internal fixation and/or casting) and pain control (e.g. non-steroidal anti-inflammatory drugs) **Table 1**

**avulsion fracture** due to joint capsule, ligament or muscle pulling away from bone, e.g. as in sprain, dislocation or excess muscle contraction; pathological traction of involved soft tissues causes separation of a small area (flake or fleck) of cortical bone

**closed fracture** bone ends do not penetrate through overlying soft tissues or skin

**Colles fracture** fracture and dorsal displacement of distal radius

**comminuted fracture** bone is broken into more than two pieces

**compound fracture** open fracture

**fatigue fracture** march fracture

**flake fracture** avulsion fracture

**fleck fracture** avulsion fracture

**greenstick fracture** bending rather than bone breakage, with minimal fracture on outer curve of the bone; typical of a young bone

**hairline fracture** a very fine fracture line, without fragment separation

**longitudinal fracture** line of fracture is parallel to long axis of bone

**march fracture; stress fracture** fracture due to repeated low-grade trauma, classically affecting shaft of second, third or fourth metatarsal; usually begins as a hairline fracture from medial aspect of bone shaft, at a point one-third from head and two-thirds from base of affected metatarsal; tendency to stress fracture is exacerbated by existing bone pathology (e.g. Paget's disease) and/or osteopenia/osteoporosis (i.e. osteopenia of disuse, menopausal osteoporosis, Charcot neuropathy), unaccustomed or strenuous exercise, or subsequent to revascularization of an ischaemic limb (see [stress](#); [stress fracture hypothesis](#); [stress fracture symptoms](#))

**neuropathic fracture** feature of foot with profound sensory neuropathy and loss of pain response; autonomic dysfunction causes opening of arteriovenous anastomoses (shunts) leading to osteopenia, and imbalance of osteoblast/osteoclast function; presents as a hairline, march/stress fracture; contributes to Charcot joint formation

**open fracture** bone ends perforate through overlying tissues and skin, creating an open wound, and almost certain subsequent osteomyelitis

**osteoporotic fracture** fracture of osteoporotic or osteopenic bone

**simple fracture** closed fracture without bone displacement

**spiral fracture** fracture line follows a spiral track across bone shaft; caused by longitudinal twist to bone

**stress fracture** see [march fracture](#)

**transverse fracture** fracture line is at right angles to longitudinal bone axis

**Table 1:** Categorization of bone fractures

Fracture type	Description
Simple	The affected bone is broken into two (or occasionally more) segments by transverse breaks, e.g. metatarsal fracture
Spiral	The fracture line follows a spiral across the bone shaft, e.g. of the distal fibula, in association with a severe inversion injury of the ankle
Comminuted	The affected bone is broken into several/many irregular segments, e.g. the calcaneum after a fall from a height
Impacted	The bone at the fracture site is compressed together by the jamming force of the impact, e.g. the neck of the fibula after a fall from a height
Open/compound	The bone at the fracture site is so displaced as to penetrate through the overlying soft tissue and skin, so that the end of the bone is exposed
Complicated	Deep soft tissues/nerves/blood vessels are traumatized by the sharp end of the fractured bone
Avulsion	The traumatic force causes local soft-tissue structures (muscle origins, tendon insertions, ligaments, joint capsule) to pull off a section of the cortex to which they are attached, e.g. avulsion fracture of the tuberosity of the fifth metatarsal
Stress/overuse	The repeated application of low-level trauma causes eventual fracture of cortical bone, e.g. march fracture of the metatarsal (stress fractures may also affect the sesamoids, styloid process of the fifth metatarsal, calcaneum or tibia)
Pathological	The bone fractures due to an underlying pathology, e.g. Ewing's sarcoma, Paget's disease or von Recklinghausen's disease affecting the tibia
Greenstick	Incomplete fracture through the affected bone; commonly affecting children

Illustrated Dictionary of Podiatry and Foot Science by Jean Mooney © 2009 Elsevier Limited. All rights reserved.

## fracture,

*n* break of bone tissue, usually caused by injury; fractures are classified according to the bone that has been damaged and type of damage produced.

# frac·ture (frak'shŭr)

A break, especially bone or cartilage.

[L. *fractura*, a break]

Medical Dictionary for the Dental Professions © Farlex 2012

## fracture,

*n* a break or rupture of a part. In the oral region, fracture is most often seen in teeth and bones.

### **fracture, avulsion,**

*n* the loss of a section of bone.

### **fracture, blow-out,**

*n* a fracture involving the orbital floor, its contents, and the superior wall of the maxillary antrum, in which orbital contents are incarcerated in the fracture area, producing diplopia.

### **fracture, bulk,**

*n* a fracture or failure in the amalgam of a restoration. An improperly finished restoration by the dental professional, poor cavity design, or improper loading of the restoration can lead to a bulk fracture.

### **fracture, cementum,**

*n* the tearing of fragments of the cementum from the tooth root.

### **fracture, clasp,**

*n* failure of a clasp arm because of stresses that have exceeded the elastic limit of the metal from which the arm was made.

### **fracture, closed reduction of,**

*n* a reduction and fixation of fractured bones without making a surgical opening to the fracture site.

### **fracture, comminuted,**

*n* a fracture in which the bone has several lines of fracture in the same region; a fracture in which the bone is crushed and splintered.

### **fracture, compound,**

*n* a fracture in which the bony structures are exposed to an external environment.

### **fracture, craniofacial dysjunction** (transverse facial fracture),

*n* a complex fracture in which the facial bones are separated from the cranial bones; a LeFort III fracture.

### **fracture, dislocation,**

*n* a fracture of a bone near an articulation, with dislocation of the condyloid process.

### **fracture, fissured,**

*n* a fracture that extends partially through a bone, with no displacement of the bony fragments.

### **fracture fixation,**

*n* the fractured fragments of bone are stabilized in close proximation to promote healing.

### **fracture, greenstick,**

*n* a fracture in which the bone appears to be bent; usually only one cortex of the bone is broken.

### fracture, Guérin's

(gāraz'),

*n.pr* a LeFort I fracture of the facial bones in which there is a bilateral horizontal fracture of the maxillae.

**fracture, impacted,**

*n* a fracture in which one fragment is driven into another portion of the same or an adjacent bone.

**fracture, indirect,**

*n* a fracture at a point distant from the primary area of injury caused by secondary forces.

**fracture, intraarticular,**

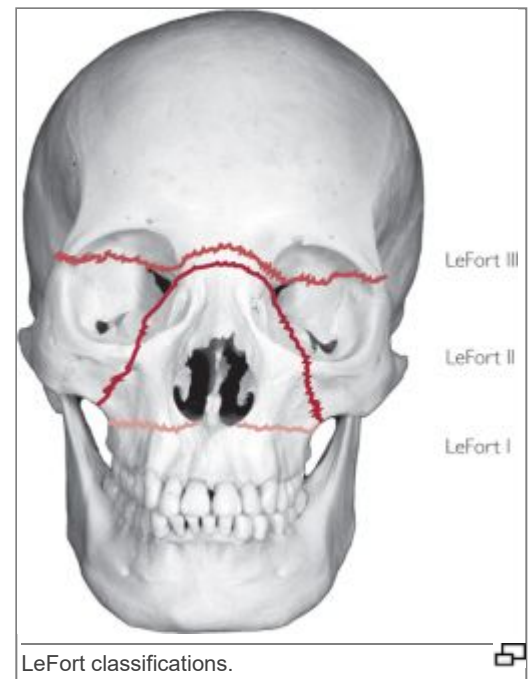
*n* a fracture of the articular surface of the condyloid process of a bone.

**fracture, intracapsular,**

*n* a fracture of the condyle of the mandible occurring within the confines of the capsule of the temporomandibular joint.

**fracture, LeFort,**

*n.pr* a transverse fracture involving the orbital, malar, and nasal bones.

**fracture, midfacial,**

*n* fractures of the zygomatic, maxillary, nasal, and associated bones.

**fracture, pyramidal,**

*n* a fracture of the midfacial bones, with the principal fracture lines meeting at an apex in the area of the nasion; a LeFort II fracture.

**fracture, root,**

*n* a microscopic or macroscopic cleavage of the root in any direction.

**fracture, simple,**

*n* a linear fracture that is not in communication with the exterior.

**fracture, stress,**

*n* 1. a type of stress usually occurring from sudden, strong, violent, endogenous force, such as a simple fracture of the fibula in a runner.

2. the fracture of metallic parts as a result of fatigue of prolonged or frequent stress.



Tooth fracture.

**fracture, tooth,**

*n* a traumatic injury to a tooth that manifests itself as a chip, crack, or break. Manifestations may also include dislocation or complete displacement of a tooth.

**fracture toughness,**

*n* the quality of the material used for brackets that indicates its ability to withstand applied force without cracking.

**fracture, transverse facial,**

*n* See fracture, craniofacial dysjunction.

Mosby's Dental Dictionary, 2nd edition. © 2008 Elsevier, Inc. All rights reserved.

## fracture

1. the breaking of a part, especially a bone.
2. a break in the continuity of bone. Fractures may be caused by trauma, by twisting due to muscle spasm, or indirect loss of leverage or by disease that results in decalcification of the bone.

**avulsion fracture**

separation of a small fragment of bone cortex at the site of attachment of a ligament or tendon.

**blow-out fracture**

fracture of the orbital floor caused by a sudden increase of intraorbital pressure due to traumatic force; the orbital contents herniate into the maxillary sinus so that the inferior rectus or inferior oblique muscle may become incarcerated in the fracture site, producing diplopia on looking up.

**capillary fracture**

one that appears on a radiograph as a fine, hairlike line, the segments of bone not being separated; sometimes seen in fractures of the skull.

**closed fracture**

one that does not produce an open wound.

**comminuted fracture**

one in which the bone is splintered or crushed.

**complete fracture**

one involving the entire cross-section of the bone.

**compound fracture**

see open fracture (below).

**compression fracture**

one produced by compression.

**contaminated fracture**

see open fracture (below).

**depressed fracture**



fracture of the skull in which a fragment is depressed. See also [depression](#) fracture.

**direct fracture**

one at the site of injury.

**dislocation fracture**

fracture of a bone near an articulation with concomitant dislocation of that joint.

**double fracture**

fracture of a bone in two places.

**fissure fracture**

a crack extending from a surface into, but not through, a long bone.

**greenstick fracture**

one in which one side of a bone is broken, the other being bent.

**impacted fracture**

fracture in which one fragment is firmly driven into the other.

**incomplete fracture**

one that does not involve the complete cross-section of the bone.

**indirect fracture**

one at a point distant from the site of injury.

**interperiosteal fracture**

greenstick or incomplete fracture.

**intrauterine fracture**

fracture of a fetal bone incurred in utero.

**lead pipe fracture**

one in which the bone cortex is slightly compressed and bulged on one side with a slight crack on the other side of the bone.

**malunion fracture**

a large space between the displaced ends of the bone has been filled by new bone.

**nonunion fracture**

there is still a wide translucent space between the ends of the broken bone.

**oblique fracture**

a common type, usually seen in the shaft of a long bone, such as the femur, tibia or humerus.



Oblique fractures of the radius and ulna. By permission from Lamb CR, Diagnostic Imaging of the Dog and Cat, Mosby, 1993

**open fracture**

one in which a wound through the adjacent or overlying soft tissues communicates with the site of the break; called also compound fracture. A classification system has been used which is based on the mechanism of injury and the extent of tissue damage. In *type I*, a bone fragment was briefly forced through the skin leaving a communicating wound; *type II* fractures are caused by impact and there is damage to overlying tissues and exposure of the bone; in *type III*, there is extensive damage and loss of overlying tissues, including shearing and degloving wounds, with loss of vascular supply.

**pathological fracture**

one due to weakening of the bone structure by pathological processes, such as neoplasia, osteomalacia or osteomyelitis.

**pertrochanteric fracture**

fracture of the femur passing through the greater trochanter.

**Salter fracture**

see [salter classification](#).

**saucer fracture**

creates a saucer-shaped fragment; caused usually by direct trauma at midshaft in a long bone. Likely to create a sequestrum.

**simple fracture**

closed fracture.

**slab fracture**

one in which a flat piece of underlying bone or tooth is separated or lost. Common in carpal bones of horses and in teeth.

**spiral fracture**

one in which the bone has been twisted apart.

**spontaneous fracture**

pathological fracture.

**sprain fracture**

the separation of a tendon from its insertion, taking with it a piece of bone. See also avulsion fracture (above).

**stellate fracture**

one with a central point of injury, from which radiate numerous fissures.

**stress fracture**

fracture produced by the stress created by the pull of muscles without the intervention of trauma or extreme weight-bearing.

**trabecular fracture**

there is no discontinuity of the bone as a whole but microscopic examination shows fractured trabeculae.

**transverse fracture**

one at right angles to the axis of the bone.

**trophic fracture**

one due to a nutritional (trophic) disturbance.

Saunders Comprehensive Veterinary Dictionary, 3 ed. © 2007 Elsevier, Inc. All rights reserved

## Patient discussion about fracture

**Q. what exactly is a tooth fracture?A broken tooth?** there is a tremendous amount of pain with this tooth.

**A.** I had a temp that stayed on for a month because I couldn't mek it back to the dentist for a awhile. I used to have a Obsession with Jaw Breaker candy but with 2 crowns learned my lesson.

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[az cosmetic dentistry](http://bestdentalcareaz.com/cosmetic.php)

**Q. Has anyone fractured their pelvic bone?...and if so how long did it take until you could walk on side injured**

**A.** my cousin fractured his pelvic bone in two places while skiing last winter (my brother pictured the helicopter coming for the rescue, a very good picture..). it took him a month until he could start walking with a cane, and about 2 months later he could walk properly.

if you want i'll send you the picture, you can say it's you :)

**Q. I had sugery on a fractured heel what is the recovery process?** Wanting to meet people who are going thru this now or have already recovered from this injury. What should I expect?

**A.** Hey doyen\_98, I was wondering how the recovery was coming along. How long ago have you had the surgery?

### More discussions about fracture

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