

# OSTEOCHONDRAL FRACTURE



## ■ ■ ■ Description

Osteochondral fracture is a localized injury affecting a surface of the joint that involves breaking, with or without separation, a segment of cartilage and the underlying bone. This can occur in any joint, although it is most common in the knee (especially the kneecap), followed by the ankle, elbow, and shoulder. It occurs more often in adolescent males. This is a difficult problem to treat because cartilage has a limited ability to heal.

## ■ ■ ■ Common Signs and Symptoms

- Swelling and pain (both starting very quickly after the injury)
- Aching, giving way, and locking or catching of joints, as well as feeling a piece of bone floating in the joint
- Crepitation (a crackling sound) within the joint with motion
- Injuries to other structures within the knee, including tears of ligaments and meniscus, due to the great force necessary to cause this injury

## ■ ■ ■ Causes

Osteochondral fractures are caused by impaction, avulsion, shearing, and rotational forces due to direct trauma or injury to the joint. In growing children, cartilage is well adhered to the underlying bone and the forces are usually imparted to the bone, causing the separation of the bone and cartilage from underlying bone.

## ■ ■ ■ Risk Increases With

- Contact and collision sports and sports in which playing on and possibly falling on hard surfaces may occur
- Adolescents
- Other knee injury, such as anterior cruciate ligament (ACL) or meniscus tear

## ■ ■ ■ Preventive Measures

Wear protective equipment (knee pads) to soften direct trauma.

## ■ ■ ■ Expected Outcome

Small fractures may heal and not cause problems. Large and deep osteochondral fractures are a more difficult problem, because injuries to articular cartilage do not heal and it is suggested that these may go on to produce arthritis (not proven in humans). Usually the symptoms resolve with appropriate treatment, including removal or fixing loose pieces of bone and cartilage.

## ■ ■ ■ Possible Complications

- Frequent recurrence of symptoms, resulting in chronic pain and swelling
- Arthritis of the affected joint
- Loose bodies with locking of the affected joint

## ■ ■ ■ General Treatment Considerations

Initial treatment consists of medications and ice to relieve pain and reduce the swelling of the affected joint. For the knee or ankle, walking with crutches until you walk without a limp is often recommended (you may put full weight on the injured leg). Range-of-motion, stretching, and strengthening exercises may be carried out at home, although referral to a physical therapist or athletic trainer may be recommended. Occasionally your physician may recommend a brace, cast, or crutches (for the knee or ankle) to protect or immobilize the joint. For those with persistent pain after conservative treatment or those with loose fragments within the joint, surgery is usually recommended. Surgery may include arthroscopy to remove the loose fragments, procedures to stimulate healing into the space left empty by the loose fragment, and, when possible, procedures to reattach the fragment (if large enough and not deformed). After immobilization or surgery, strengthening and stretching of the injured, stiff, and weakened joint and surrounding muscles (due to the injury, surgery, or immobilization) are necessary. These may be done with or without the assistance of a physical therapist or trainer.

## ■ ■ ■ Medication

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Strong pain relievers may be prescribed as necessary. Use only as directed and only as much as you need.

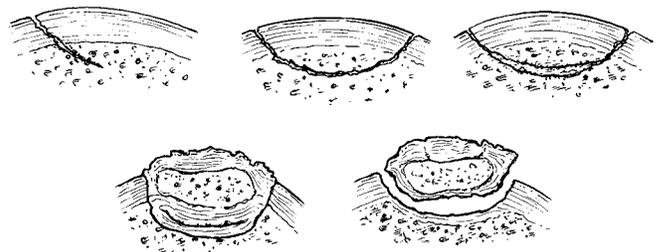


Figure 1

From Jobe FW: Operative Techniques in Upper Extremity Sports Injuries. St. Louis, Mosby Year Book, 1996, p. 497.

**■ ■ ■ Heat and Cold**

- Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

**■ ■ ■ Notify Our Office If**

- Symptoms get worse or do not improve in 2 weeks despite treatment
- Any of the following occur after surgery:
  - You develop signs of infection: fever, increased pain, swelling, redness, drainage, or bleeding in the surgical area
  - You experience pain, numbness, or coldness in the foot
  - Blue, gray, or dusky color appears in the toenails
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

Notes:

(Up to 4400 characters only)

Notes and suggestions