

Osteochondritis Dissecans Of The Knee



What is OCD?

Osteochondritis dissecans (aka "OCD") is a condition that commonly affects children and adolescents, in which the bone next to the cartilage of a joint becomes unhealthy (for unclear reasons) and begins to soften or weaken. This can cause pain in the joint and even swelling. Over time, if left untreated, this can lead to damage to the overlying cartilage of the joint essentially becoming a focal type of arthritis. Pieces of bone and cartilage can even break loose and float around the joint causing further damage.

Which joints are most commonly affected by OCD?

The knee is the most common site that is affected by OCD. It is not uncommon (up to 40% of the time in some studies) for OCD to affect BOTH knees, so your doctor may recommend that a screening xray be obtained of the OTHER KNEE of your child, even if he/she is not having any pain there. OCD does not always cause pain, but the risks associated with developing arthritis still exist. Some other joints can be affected by OCD, including the ankle and the elbow, but it is extremely rare for OCD to affect BOTH the knees AND the elbow or ankle, so unless there is pain in those other joints of the body, an xray is probably not needed there.

What is the ROCK research group?

ROCK is the Research in OsteoChondritis of the Knee research group. (<https://kneeoed.org>) ROCK is made up of a group of surgeons and researchers who work at various medical centers around the world and work together to study this condition. ROCK is devoted to the investigation of how/why OCD forms, how we can better diagnosis OCD, how we can better manage OCD, and how to reduce the risk of long-term damage to a young person's joint. The ROCK study group members have collaborated to create this information sheet, which we feel comprises the most accurate and up to date information on osteochondritis dissecans of the knee.



What Causes OCD?

There is probably more than one way to develop OCD. In some studies it has been associated with single-event trauma or with long-term repetitive impact to the joint (overuse injuries), and may relate to the blood supply to a specific small area of bone right under the joint surface. Recent study suggests that the injury occurs very early in life, but does not present itself until age 8 years old or later when it can become painful. There are some reports of families that have many cases of OCD. However, most patients with OCD do not have family members with OCDs, so there is not thought to be a strong genetic or family disposition for OCD. In general, it **is termed an 'idiopathic' condition, meaning we don't understand the cause.**

Is OCD a common problem? Who gets OCD lesions most commonly?

OCD is a **relatively rare condition**, likely affecting far **less than 1 percent of the population**. The age group that is most frequently affected is **adolescents, ages 12 to 19**, but also affects some **pre-adolescents, ages 8-11**. Boys are more commonly affected than girls.

What are the signs of OCD?

Not all OCDs cause signs or symptoms (i.e. you may not know anything is wrong with the knee for much of the time), but some associated symptoms can include knee pain, usually worse with increased activity, knee swelling, and possibly clicking and popping sensations. These may be preceded by a small injury that seemed to get better on its own.

What does 'stable' or 'unstable' OCD mean?

The term **'stable OCD'** is used to mean that the condition has not yet disrupted the joint cartilage so the cartilage is still considered relatively healthy. When the condition progresses to become an **'unstable OCD'**, it has progressed to a more advanced stage. In unstable OCD, not only is the bone underneath the cartilage of the knee affected, but the overlying cartilage has also been injured, leading to cracking at the edges of the OCD lesion. The affected area of bone and the associated cartilage is at risk of moving, separating or fragmenting away from the rest of the joint cartilage.

What treatment options are available for OCD?

Stable OCD in children with growth remaining in their knee (roughly, boys below age 16 and girls below age 14) who still have active or 'open' growth plates **can ideally be treated without surgery.** Resting from impact activities (like running and jumping) is recommended for at least 3 months. Many physicians will also recommend crutches, bracing, and or casting. In these scenarios, the hope is that the bone will heal itself, and 50-60% of the time, complete healing will occur with this treatment. However, if the patient is older, and is no longer growing, or if an OCD does not heal in a child treated with activity modifications, or if it is "unstable" or threatening to break off when it is first discovered, surgery may be required.

What is "activity modification"?

If your doctor has recommended that you or your child modify activity, all activities that involve running or jumping should be avoided. These include activities and sports like soccer, basketball, lacrosse, baseball, tennis, volleyball, softball, racket sports, gymnastics, and dance. Safer alternatives that your doctor may allow include swimming, biking, and yoga.

What kind of surgery is available to treat OCD?

The surgical choices to treat OCD depend on whether the OCD is firmly in place (stable) or threatening to loosen or dislodge (unstable). The following are a few examples of the many surgeries that are currently available to treat OCD.

Surgery for Stable OCD

If the OCD is stable, the **goal of the surgery is to help the OCD heal.** This is most often done arthroscopically, with small incisions assisted by camera and small tools. A small pin is used to make drill holes to help encourage blood to flow to the area to heal the bone and cartilage.

Surgery for Unstable OCD

If the OCD is unstable, **the point of the surgery is to make it firm or stable.** A screw or dart may be used to hold the OCD in place to help it heal. Sometimes bone might be harvested from a different site through a small incision to help replace the bone beneath the OCD. Fixation may sometimes be done at the same time as the small pin drilling, as mentioned above.

If the bone and cartilage have broken off, and cannot be fixed, the **goal of surgery is to place new cartilage in the defect, or the place on the joint from which the cartilage broke off.**

- This can be done by 'microfracture', or stimulation of the bone, to make new scar tissue that acts like cartilage. This can be performed with or without additional biologic tissue.
- Cartilage and bone may be moved from an area of the knee that is less weight bearing, this is called osteochondral autograft transfer, or 'OAT'.
- Cartilage and bone from a cadaver ("Osteochondral allograft transplantation") may alternatively be used to fill the defect.
- Lastly, the patient's own cartilage may be sent to a lab and used to grow new cartilage that may be put back into the patient a few months later. This was traditionally called autologous chondrocyte implantation, 'ACI' and now more recently has evolved to include a scaffold membrane for the new cartilage cells and is now referred to as 'MACI'. This technique does require a second surgery.

Can OCD's come back?

Once an OCD is healed, we do not believe that they can "come back." However, sometimes an OCD acts like it has healed, or looks like it has healed, when in fact it has not. Or a new OCD can rarely present in the same knee. In these cases, there may be a misconception that the OCD has "come back."

