



# Osgood-Schlatter Disease (Tibial tubercle apophysitis)

## What is Osgood-Schlatter disease?

Osgood-Schlatter disease is irritation and inflammation of the growth plate (apophysis) at the top of the shin bone (tibial tubercle), where the patella tendon inserts. In a child, the bones grow from areas called growth plates. The growth plate is made up of cartilage cells, which are softer and more vulnerable to injury than mature bone. Osgood-Schlatter disease commonly occurs in children between 9 and 15 years of age, usually during a period of rapid growth.

## How does it occur?

Osgood-Schlatter disease is caused by increased tension and pressure on the growth center. This pressure usually results from overuse of the knee (repetitive running and jumping). Poor flexibility in the quadriceps and hamstrings (muscles in front and back of the thigh) puts pressure on this growth center and increases the risk for developing Osgood-Schlatter disease. Tight muscles are more common during a growth spurt.

## What are the symptoms?

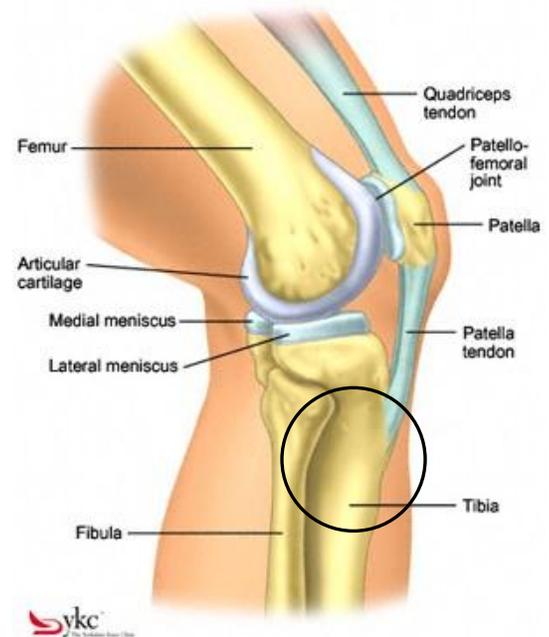
There is pain at the tibial tubercle with running, jumping, or kneeling. Sometimes there is swelling. The pain may limit your ability to do sports or activities. Usually just one knee is affected, but for 20% of people with Osgood-Schlatter disease, both knees are affected.

## How is it diagnosed?

Your doctor will do a physical examination of the knee and review your symptoms. X-Rays are not required to make the diagnosis of Osgood-Schlatter disease. Your doctor may request X-rays to look for other causes of knee pain. In Osgood-Schlatter disease, X-rays are usually normal, but sometimes there is soft tissue swelling over the tibial tubercle or irregular bone edges at the growth center.

## How is it treated?

You will need to rest from painful activities in order to take the pressure off the growth center and allow the inflammation to resolve. Ice packs can be applied to the knee for 15-20 minutes every 2-4 hours until the pain goes away. Regular stretching of the quadriceps and hamstrings will help reduce the pain. Your doctor may recommend wearing a knee strap between your kneecap and tibial tubercle to take pressure off the growth center during sports and activities. Anti-inflammatory medications may be prescribed if rest, ice and stretching are not reducing your pain. You should never use ice or anti-inflammatory medications before playing a sport, because this can prevent you from sensing when further injury is occurring.





### **When can I return to activities and sports?**

The goal is to return to sports as quickly and safely as possible. If you return to sports or activities too soon, or play with pain, the injury may worsen, which could lead to chronic pain and difficulty with sports.

Everyone recovers from injury at a different rate. Return to sport or activity will be determined by how soon your knee recovers, not by how many days or weeks it has been since the injury occurred.

If you have no pain while playing sports, but the knee is sore afterwards, it is okay to continue with the sport. However, if pain occurs during sports or activities, it is essential to take a break from playing so that the injury can heal.

1. Returning safely to sports or activities when each of the following is true:
2. You can fully bending and straightening the knee without pain
3. You can walk without pain
4. You can go up and down stairs without pain
5. You can jog without pain
6. You can sprint without pain
7. You can jump and hop on the affected leg without pain

### **What is the prognosis?**

With appropriate treatment, almost all children with Osgood-Schlatter disease are able to return to their usual sports and activities within a few weeks, but the timeline is different for each child. Though the pain may go away, sometimes the tibial tubercle remains enlarged, and some adults with a history of Osgood-Schlatter disease have pain when kneeling.

### **How can Osgood Schlatter disease be prevented?**

- Perform a proper warm-up before starting any activity. Ten minutes of light jogging, cycling, or calisthenics before practice will increase circulation to cold muscles, making them more pliable so that they put less stress and tension on their attachment sites (apophyses).
- Wear shoes that fit properly and are appropriate for the sport or activity. Replace worn out shoes promptly.
- Stretch quadriceps and hamstring muscles 1-2 times a day. It is better to stretch after exercise than before exercise. Hold each stretch for 30 seconds. Don't bounce.
- *Do not play through pain.* Pain is a sign of injury, stress, or overuse. Rest is required to allow time for the injured area to heal. If pain does not resolve after a couple days of rest, consult your physician. The sooner an injury is identified, the sooner proper treatment can begin. The result is shorter healing time and faster return to sport.