

## OSGOOD-SCHLATTER DISEASE OR LANNELONGUE'S DISEASE

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### ABSTRACT

Osgood-Schlatter disease is an overuse condition or injury of the knee that causes pain and swelling below the knee area over the shin bone. It is characterized by inflammation of the patellar tendon and surrounding soft tissues. It is caused by the constant pulling of the patellar tendon on the area below the knee where the tendon attaches. The goal of treatment is to control the knee pain and limit your teen's activities that could aggravate the condition. Treatment may include: R.I.C.E. - rest, ice, compression, and elevation, medications (for discomfort), elastic wrap or a neoprene knee sleeve around the knee, activity restrictions, physical therapy (to help stretch and strengthen the thigh and leg muscles). Osgood-Schlatter disease often resolves with time. Rarely is surgery required for this condition.

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## INTRODUCTION

Osgood-Schlatter disease (OSD), also known as apophysitis of the tibial tubercle, is an inflammation of the patellar ligament at the tibial tuberosity.[2] It is characterized by a painful bump just below the knee and is most often seen in young adolescents. Risk factors include overuse (especially in sports involving running, jumping and quick changes of direction) and adolescent growth spurts.

The condition is named after Robert Bayley Osgood (1873–1956), an American orthopedic surgeon and Carl B. Schlatler, (1864–1934), a Swiss surgeon who described the condition independently in 1903.[1]

### Incidence

While Osgood-Schlatter disease is more common in boys, the gender gap is narrowing as more girls become involved with sports.

Age ranges differ by sex because girls experience puberty earlier than do boys. Osgood-Schlatter disease typically occurs in boys ages 13 to 14 and girls ages 11 to 12. The condition usually resolves on its own, once the child's bones stop growing

### Risk Factors

*The main risk factors for Osgood-Schlatter disease are*

- Age. Osgood-Schlatter disease occurs during puberty's growth spurts. Age ranges differ by sex because girls experience puberty earlier than do boys. Osgood-Schlatter disease typically occurs in boys ages 13 to 14 and girls ages 11 to 12.
- Sex. Osgood-Schlatter disease is more common in boys, but the gender gap is narrowing as more girls become involved with sports.

- Sports. The condition happens most often with sports that involve a lot of running, jumping and swift changes in direction

### Osgood-Schlatter Disease



### Signs and Symptoms

Osgood-Schlatter disease causes pain in the front lower part of the knee.[3] This is usually at the ligament-bone junction of the patellar ligament and the tibial tuberosity.[4] The tibial tuberosity is a slight elevation of bone on the anterior and proximal portion of the tibia. The patellar tendon attaches the anterior quadriceps muscles to the tibia via the knee cap.[5] Intense knee pain is usually the presenting symptom that occurs during activities such as running, jumping, squatting, and especially ascending or descending stairs and during kneeling. The pain is worse with acute knee impact. The pain can be reproduced by extending the knee against resistance, stressing the quadriceps, or striking the knee. Pain is initially mild and intermittent. In the acute phase, the pain is severe and continuous in nature. Impact of the affected area can be

very painful. Bilateral symptoms are observed in 20–30% of patients.

### **Diagnosis**

In addition to a complete medical history and physical examination, diagnostic procedures for Osgood-Schlatter disease may include:

- X-rays - a diagnostic test which uses invisible electromagnetic energy beams to produce images of internal tissues, bones, and organs onto film.
- bone scans - a nuclear imaging method to evaluate any degenerative and/or arthritic changes in the joints; to detect bone diseases and tumors; to determine the cause of bone pain or inflammation.
- magnetic resonance imaging (MRI) - a diagnostic procedure that uses a combination of large magnets, radiofrequencies, and a computer to produce detailed images of organs and structures within the body.
- blood tests

### **Types**

Three types of avulsion fractures.

Type I: A small fragment is displaced proximally and does not require surgery.

Type II: The articular surface of the tibia remains intact and the fracture occurs at the junction where the secondary center of ossification and the proximal tibial epiphysis come together (may or may not require surgery).

Type III: Complete fracture (through articular surface) including high chance of meniscal damage. This type of fracture usually requires surgery.

### **Treatment**

Treatment is generally conservative with rest, ice, and specific exercises being recommended.[2] Simple pain killers may be used if required such as acetaminophen (paracetamol) or ibuprofen. Typically symptoms resolve as the growth plate closes.[3] Physiotherapy is generally recommended once the initial symptoms have improved to prevent recurrence.[2] Surgery may rarely be used in those who have stopped growing yet still have symptoms.[3]

### **Physiotherapy**

Recommended efforts include exercises to improve the strength of the quadriceps, hamstring and gastrocnemius muscles.[5]

Bracing or use of an orthopedic cast to enforce joint immobilization is rarely required and does not necessarily give quicker resolution. Sometimes, however, bracing may give comfort and help reduce pain as it reduces strain on the tibial tubercle.[4]

### **Surgery**

Surgical excision may rarely be required in skeletally mature patients.[2] In chronic cases that are refractory to conservative treatment, surgical intervention yields good results, particularly for patients with bony or cartilaginous ossicles. Excision of these ossicles produces resolution of symptoms and return to activity in several weeks. After surgery, it is common for lack of blood flow to below the knees and to the feet. This may cause the loss of circulation to the area, but will be back to normal again shortly. A high pain may come and go every once in a while, due to the lack of blood flow. If this happens, sitting down will help the pain decrease. Removal of all loose intratendinous ossicles associated with prominent tibial tubercles is the procedure of choice, both from the functional and the cosmetic point of view.[5]

### **Lifestyle and Home Remedies**

- Rest the joint. Limit the time spent doing activities that aggravate the condition, such as kneeling, jumping and running.
- Ice the affected area. This can help with pain and swelling.
- Stretch leg muscles. Stretching the quadriceps, the muscles on the front of the thigh, is especially important.
- Protect the knee. When your child is participating in sports, have him or her wear a pad over the affected knee at the point where the knee may become irritated.
- Try a strap. A patellar tendon strap fits around the leg just below the kneecap. It can help to "tack down" the kneecap's tendon during activities and distribute some of the force away from the shinbone.
- Cross-train. Suggest that your child switch to activities that don't involve jumping or running, such as cycling or swimming, until symptoms subside

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