



OSGOOD-SCHLATTER DISEASE

(Osteochondrosis, Apophysitis of the Tibial Tubercle)



■ ■ ■ Description

Osgood-Schlatter disease is characterized by inflammation of the growth plate of the leg just below the knee at the tibial tubercle, a prominence just below the kneecap. The tibial tubercle is the bony attachment on the large bone of the lower leg (tibia) of the big, powerful thigh muscle (quadriceps). The growth plate is an area of relative weakness, and injury to it occurs due to repeated stress or vigorous exercise. It is a temporary condition of the tibial tubercle that is uncommon after age 16. There does exist a small subset of patients that will have residual pain and disability after the age of 16.

■ ■ ■ Common Signs and Symptoms

- A slightly swollen, warm, and tender bump below the knee
- Pain with activity, especially straightening the leg against force (stair climbing, jumping, deep knee bends, or weight-lifting) or following an extended period of vigorous exercise in an adolescent. In more severe cases, pain occurs during less vigorous activity.

■ ■ ■ Causes

Osgood-Schlatter disease results from stress or injury to the tibial tubercle growth plate (which is still developing during adolescence), causing a flare-up. Repeated stress or injury interferes with development, causing inflammation.

■ ■ ■ Risk Increases With

- Overzealous conditioning routines, such as running, jumping, or jogging
- Being overweight
- Boys between 11 and 18
- Rapid skeletal growth
- Poor physical conditioning (strength and flexibility)

■ ■ ■ Preventive Measures

- Lose weight or maintain ideal body weight.
- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
- Muscle strength
- Flexibility
- Use proper technique.

■ ■ ■ Expected Outcome

Mild to severe cases can be resolved with a reduction of activity level.

■ ■ ■ Possible Complications

- Recurrence of the condition in adulthood, with symptomatic bone fragments below the affected knee (ossicle)
- Persisting prominence (bump) below the kneecap

■ ■ ■ General Treatment Considerations

Initial treatment consists of medications and ice to relieve pain, stretching and strengthening exercises (particularly of the quadriceps and hamstrings), and modification of activities. Specifically, kneeling, jumping, squatting, stair climbing, and running on the affected knee should be avoided. The exercises can all be carried out at home for acute cases. Chronic cases often require a referral to a physical therapist or athletic trainer for further evaluation or treatment. Uncommonly, the affected leg may be immobilized for 6 to 8 weeks with a reinforced elastic knee support, casting, or a splint. A patellar band (a brace between kneecap and tibial tubercle on top of the patellar tendon) may help relieve symptoms. Surgery is recommended in the growing patient in the rare situation of failed conservative treatment. Surgery is occasionally necessary after skeletal maturity if the ossicle becomes painful.

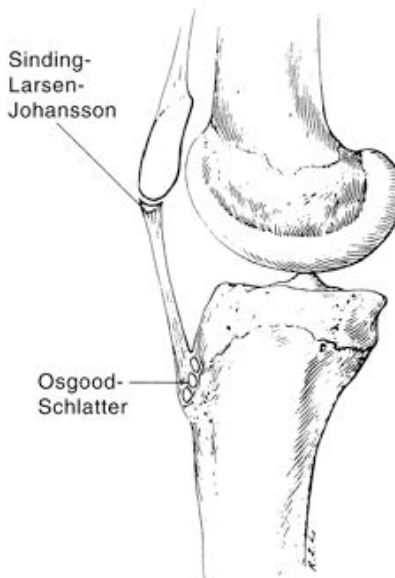


Figure 1

From Miller MD, Cooper DE, Warner JJP: Review of Sports Medicine and Arthroscopy. Philadelphia, WB Saunders, 1995, p. 61.

■ ■ ■ 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.
- Cortisone injections are rarely, if ever, indicated. Cortisone injections may weaken tendons, so it is better to give the condition more time to heal than to use them.

■ ■ ■ Heat and Cold

- Cold is used to relieve pain and reduce inflammation for acute and chronic cases. 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.

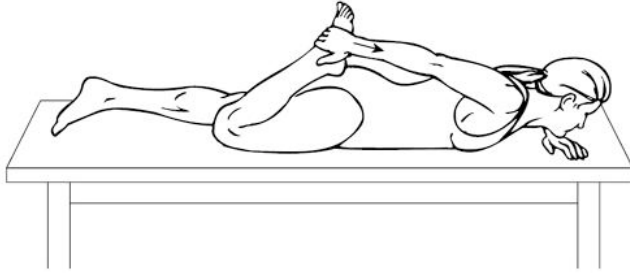
■ ■ ■ Notify Our Office If

- Symptoms get worse or do not improve in 4 weeks despite treatment
- You develop a fever greater than 101°F

➤ **RANGE OF MOTION AND STRETCHING EXERCISES** • Osgood-Schlatter Disease
(Osteochondrosis, Apophysitis of the Tibial Tubercle)

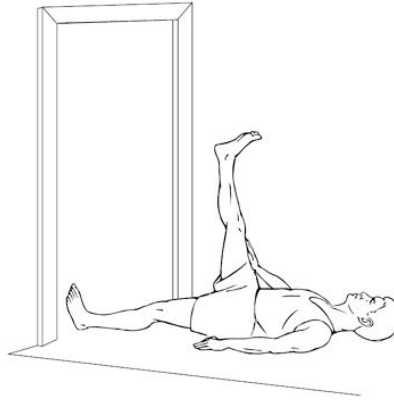
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt



STRETCH • Quadriceps, Prone

1. Lie on your stomach as shown.
2. Bend your knee, grasping your toes, foot, or ankle. If you are too “tight” to do this, loop a belt or towel around your ankle and grasp that.
3. Pull your heel toward your buttock until you feel a stretching sensation in the front of your thigh.
4. Keep your knees together.
5. Hold this position for **30** seconds.
6. Repeat exercise **2** times, **3** times per day.



FLEXIBILITY • Hamstrings, Doorway

1. Lie on your back near the edge of a doorway as shown.
2. Place the leg you are stretching up the wall keeping your knee straight.
3. Your buttock should be as close to the wall as possible and the other leg should be kept flat on the floor.
4. You should feel a stretch in the back of your thigh.
5. Hold this position for **30** seconds.
6. Repeat exercise **3** times, **2** times per day.

Central
1301 Barbara Jordan Blvd.
Suite 300
Austin, TX 78723

Cedar Park
1301 Medical Pkwy.
Suite 330
Cedar Park, TX 78613

Four Points (PT only)
6911 N FM 620
Suite C200
Austin, TX 78732

Westlake (PT only)
3532 Bee Caves Rd.
Suite 110
Austin, TX 78746

South (PT only)
1807 W. Slaughter Lane
Suite 600
Austin, TX 78748

512-478-8116
512-478-9368 (fax)
www.ctpomd.com



CENTRAL TEXAS PEDIATRIC ORTHOPEDICS

Physical Therapy