

# ***OSGOOD-SCHLATTER DISEASE***

## **OSTEOCHONDROSIS, APOPHYSITIS OF THE TIBIAL TUBERCLE**

### **DESCRIPTION**

Inflammation of the growth plate of the leg just below the knee at the tibial tubercle, a prominence just below the knee cap. 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.

### **FREQUENT 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 weightlifting) and/or following an extended period of vigorous exercise in an adolescent. In more severe cases, pain occurs during less vigorous activity.

### **CAUSES**

Results from stress or injury of the tibial tubercle growth plate (which is still developing during adolescence) and causes flare-up. Repeated stress or injury interferes with development causing inflammation.

### **RISK INCREASE WITH**

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

### **PREVENTIVE MEASURES**

- Help an overweight child or adolescent lose weight
- Appropriate warm-up and stretching before practice or competition
- Appropriate conditioning
  - Strength, flexibility and endurance
  - Cardiovascular fitness
- Exercise moderately, avoiding extremes
- Proper technique

### **EXPECTED OUTCOME**

Mild cases can be resolved with slight reduction of activity level, while moderate to severe cases may require significantly reduced activity and occasionally immobilization for 3 to 4 months.

## **POSSIBLE COMPLICATIONS**

- Bone infection
- Recurrence of the condition in adulthood with symptomatic bone fragments below the affected knee (ossicle)
- Persisting prominence (bump) below the kneecap
- Avulsion – pulling off of the tibial tubercle from the rest of the leg

## **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 6-8 weeks with a reinforced elastic knee support, casting or splint. A patellar band (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.

## **MEDICATION**

- Non-steroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take if surgery planned in 7 days or less), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact him/her immediately if any bleeding, stomach upset or an allergic reaction occurs.
- 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 - 15 minutes every 2-3 hours for inflammation and pain, and immediately after any activity which aggravates your symptoms. Use ice packs or an ice massage.
- Heat may be used prior to performing stretching and strengthening activities prescribed by your physician, physical therapist or athletic trainer. Use heat pack or a warm soak.

## **NOTIFY OUR OFFICE IF:**

- Symptoms get worse or do not improve in 4 weeks, despite treatment
- Fever above 101<sup>0</sup>F