

**STEVEN CHUDIK MD**  

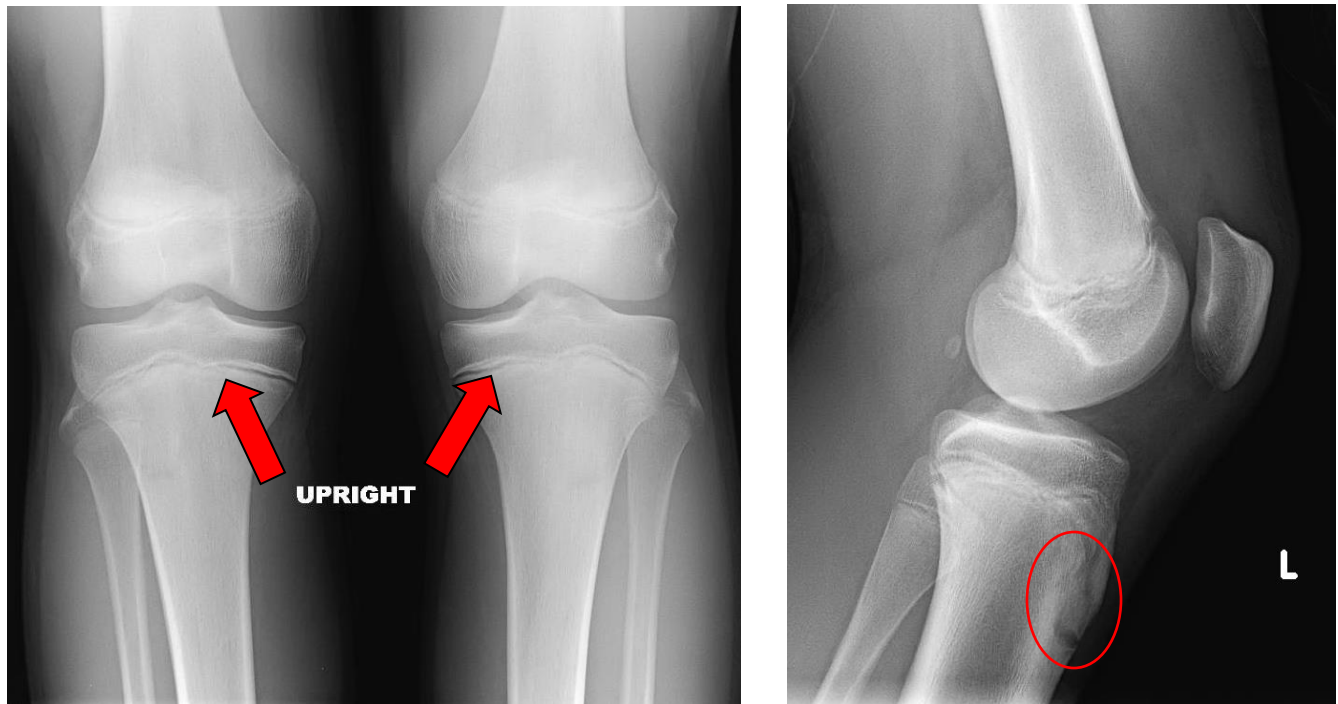
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**SHOULDER, KNEE & SPORTS MEDICINE**

**Osgood-Schlatter Disease**

*(Osteochondrosis, Apophysitis of the Tibial Tubercle)*

Osgood-Schlatter disease is characterized by a stress injury to 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) for the big, powerful thigh muscle (quadriceps). The growth plate is an area of relative weakness, and injury to it occurs due to repetitive stress from vigorous exercise. It is usually a temporary condition that is uncommon after age 16 or when the growth is completed.



X-rays of male adolescent knee. The arrows indicate open growth plates. The tibial tubercle is circled on the lateral view.

**Frequent Signs and Symptoms**

- A tender prominence (bump) below the knee
- Pain with kneeling
- 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



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## SHOULDER, KNEE & SPORTS MEDICINE

### Etiology (Causes)

Osgood-Schlatter disease results from repetitive stress and injury to the tibial tubercle growth plate, which is still developing during adolescence. Repetitive stress and injury affects the development of the bony tubercle and causes pain and tenderness to contact.

### Risk Factors

- Overzealous conditioning routines that involve running, jumping, or jogging
- Overweight/Obesity results in more stress on the tubercle with activity
- Boys between 11 and 18
- Participating on multiple teams at once
- Periods of rapid skeletal growth
- Poor physical conditioning (strength and flexibility)

### Prevention

- Lose weight or maintain ideal body weight
- Appropriately warm up and stretch before practice or competition
- Maintain appropriate conditioning:
  - Muscle strength
  - Flexibility and endurance
  - Cardiovascular fitness
- Exercise moderately, avoiding extremes
- Use proper technique
- When sore, limit activities and rest/recover

### Outcomes

Mild cases can be resolved with a slight reduction of activity level, icing, and stretching, whereas moderate to severe cases may require significantly reduced activity and rarely, immobilization.

### Potential Complications

- Persistence of pain and symptoms in adulthood due to painful fragmentation (separation) the tibial tubercle (rare)
- Permanent prominence (bump) below the kneecap



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### Treatment Considerations

Initial treatment consists of anti-inflammatory medications (ibuprofen) and ice to relieve pain, stretching exercises, and modification of activities. To control symptoms, kneeling, jumping, squatting, stair climbing, and running on the affected knee should be restricted as necessary to minimize symptoms. An infrapatellar strap, a brace just below the kneecap, may help relieve symptoms. Surgery is occasionally necessary after skeletal maturity if the ossicle (bony fragment) becomes painful. Surgery on adults focuses on removing the painful ossicle and repairing the patellar tendon to relieve symptoms.

### Possible Medications

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within seven 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.

### Modalities (Cold Therapy)

Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every two to three hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage with a cloth between the ice and your skin to prevent burning /freezing your skin.

### Notify My Office If Symptoms Worsen

