

## Osgood-Schlatter Disease

Osgood-Schlatter disease is a very common cause of knee pain in children and young athletes between the ages of 9 and 16. It usually occurs due to a period of rapid growth, combined with a high level of sporting activity. It occurs in approximately 21% of young athletes and is more common in males based on the number of boys involved in competitive sports.

The condition results from the pulling force from the quads through the patella tendon, on to the tibial tuberosity (bony protrusion at the top of the shin). This area then becomes inflamed, painful and swollen. This is frequent in younger people at an area of weakness where a cartilaginous growth plate is located. The area will remain weak until the cartilage matures into bone. If left untreated, the effects can be long-lasting into adulthood. It commonly produces a large “bump” just below the knee as new bone grows in where the growth plate separates.

### Symptoms

- Complaints of pain increased with activity
- Pain described at the front of the knee, below the knee cap, at the top of the shin bone
- Pain when contracting the quadriceps against resistance



### Signs

- Swelling located at the site of pain
- Tenderness over the area of pain to touch – the tibial tubercle
- Pain with activities stressing the quadriceps – squatting, lunging, running, jumping, etc.
- Pain with forceful stretching of the quadriceps at the tibial tubercle

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### Treatment

- PRICE (protect, rest, ice, compression, and elevation) – reducing activity is a must
- Physiotherapy when inflamed or painful and a home program including exercises
- NSAIDs (non-steroidal anti-inflammatory drugs) prescribed by a physician
- When able, stretch tight quadriceps and hamstrings and strengthen weak hamstrings

In extremely severe cases:

- X-ray to see exactly how much damage or bony separation has occurred
- Apply a plaster cast or splint for three weeks if pain is severe

### What type of knee support might help?

There are a number of different supports and braces on the market that may help with Osgood-Schlatter disease.

A simple neoprene support brace will provide compression and support to the knee in general and retain the body's natural heat. A warm tendon will work much better than a cold one.

A patella tendon strap wraps around just below the knee, to put direct pressure on the patella tendon or right on the attachment to help reduce the strain on the tibial tuberosity. There are taping techniques as well which can be useful.





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This is really a self-limiting condition and based primarily on pain. Traditional treatment was a cast for 6 weeks and removal from sports for up to 1 year. Now we treat this condition symptomatically.

### Prevention

- Proper warm-up: From a soccer perspective, a pre-training and pre-game stretching, strengthening, and a soccer-specific movement routine is important. "Warm" muscles, joints, and tendons are more flexible. The Sherwood Park Sports Physiotherapy ACL Injury Prevention Program is ideal for this.
- Distinguish between muscle pain and injury pain: Pain in the muscle belly and not at the joint, which resolves within 24 hours, is due to normal muscular breakdown and recovery. If it does not resolve and is noted at the joint or tendon attachment, it may be injury-related.
- Strengthening: The most common strength imbalance in the thigh exists between the quads and hamstrings. Strengthening the hamstrings helps restore balance and helps control the dominant forces created by the quadriceps.
- Stretching: The quadriceps should be stretched to lengthen the muscle and reduce injury-site stress. Immediately following activity is most important as well – three times each for 30 seconds
- Proper cool-down: Following activity or sports participation, cooling down with gentle exercise and stretching is essential.