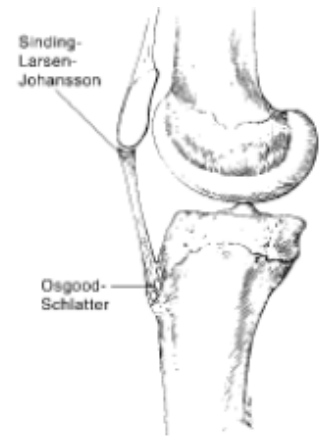


Sinding-Larsen-Johansson Syndrome

Sinding-Larsen-Johansson syndrome is characterized by inflammation of the kneecap (patella) at its lowest point in the area of the growth center. This is the site of origin of the patellar tendon. There is traction on the kneecap at this point due to action of the large, powerful thigh muscle (quadriceps), as well as with deep bending of the knee. The injury is usually due to repeated stress or vigorous exercise.



Common Signs and Symptoms

- Slightly swollen, warm, and tender bump below the kneecap
- Pain with activity, especially when straightening the leg against force (such as with stair climbing, jumping, deep knee bends, or weightlifting) or following an extended period of vigorous exercise in an adolescent
- In more severe cases, pain during less vigorous activity

Causes

Sinding-Larsen-Johansson syndrome results from stress (a single sudden incident or repeated) or injury of the lower patella that interferes with development, causing inflammation. This may be inflammation of the cartilage of the growing patella, death of tendon cells from repeated stress, or pulling off of the lining of the patellar bone.

Risk Factors

- Overzealous conditioning routines, such as running, jumping, or jogging
- Being overweight
- Boys between 10 and 15
- Rapid skeletal growth
- Poor physical conditioning (strength and flexibility)

Preventative Measures

- Appropriately warm up and stretch before practice or competition
- Maintain appropriate conditioning
- Thigh and knee strength
- Cardiovascular fitness
- Exercise moderately, avoiding extremes
- Use proper technique
- Flexibility and endurance
- Maintain ideal body weight

Expected Outcome

Mild cases can be resolved with a slight reduction in activity level, whereas moderate to severe cases may require significantly reduced activity (12-16 weeks) and even immobilization (cast/brace) at times.

Possible Complications

- Complete separation / fracture of the growth center. (Figure 1)
- Recurrence of the condition in adulthood, with symptomatic bone fragments below the affected knee (ossicle)
- Persisting prominence (bump) below the kneecap

Figure 1



General Treatment Considerations

- Initial treatment consists of medications and ice to relieve pain, stretching and strengthening exercises, 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 (in a cast, splint, or reinforced elastic knee support).
- A patellar band (brace between the kneecap and tibial tubercle on top of the patellar tendon) may help relieve symptoms. (Figure 2)
- Rarely, surgery is needed (if conservative treatment fails) in the growing patient. In addition, surgery may be necessary after skeletal maturity if the ossicle becomes painful.

Figure 2



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. Ice packs 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.
- 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 OR if new, unexplained symptoms develop (drugs used in treatment may produce side effects).