

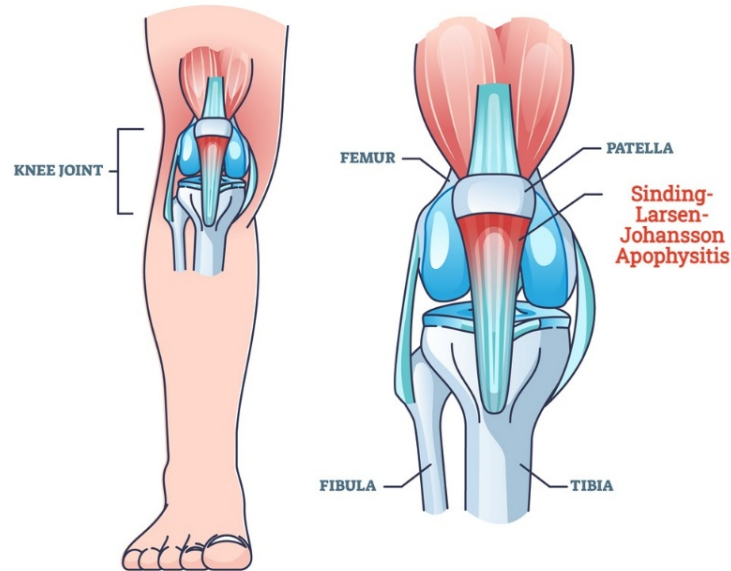
YOUR GROUP23

PATIENT HEALTH JOURNEY

BECOME AN EXPERT: Sinding-Larsen-Johansson Apophysitis

The movement of our bones is facilitated by the contraction of the muscles attached to them. In adults, the muscle is attached to the bone through a tendon. In growing children, there is an additional component between the bone and the tendon, known as the **apophysis**. This attachment point is a combination of bone, cartilage, and tendon and is constantly growing to allow changes in the angles of force as our limbs and joints develop. The apophysis is the weakest part of the system in growing children.

As we grow, our long bones become longer and our muscles get tighter. When we reach our teenage years and start producing muscle building hormones, our muscles also become stronger, leading to increased pulling on the attachment point.



This excessive stress can cause the weakest part of the system to start to pull apart, resulting in micro fractures. This pulling apart and micro fracturing causes inflammation in the apophysis, known as **apophysitis**. The symptoms of apophysitis include pain, swelling, redness, heat, and loss of function.

Apophysitis usually has a gradual onset due to repetitive stress. In some cases, there can be an acute (sudden onset) fracture where the tendon and a small piece of bone pull away from the attachment. This is referred to as an avulsion fracture.

The time of most rapid growth in bones is when the apophysis is most prone to becoming inflamed. This happens at different times in boys and girls (earlier in girls) and at different times in life for the different attachment points. As children complete their growth, the apophysis finishes growing, and the fibres of the bone and tendon fuse together, becoming more organized and calcium-rich. Eventually, the growth plates disappear, usually taking a couple of years.

Sinding-Larsen-Johansson Apophysitis

Sinding-Larsen-Johansson apophysitis is a condition that causes pain and inflammation of the apophysis at the lower pole of the patella, where the patellar tendon inserts. This condition is typically seen in adolescents who participate in sports that require frequent jumping and landing, such as basketball or volleyball. The growth at this attachment point is most active at age 10-15.

BECOME AN EXPERT cont'd

Making the Diagnosis

Knowing the apophyses' attachment points and the times they undergo the most stress and growth is essential in diagnosing apophysitis. The examiner should be able to put pressure on the apophysis and duplicate the pain. Diagnostic imaging, such as X-rays, ultrasounds, and MRIs, is not usually necessary, but existing X-rays can confirm the presence of an open or disorganized area where the tendon connects to the bone. In unclear cases, imaging may be needed to investigate other potential causes of the athlete's symptoms.

Apophysitis Management

Apophysitis requires management to minimize symptoms so that the players can return to their sport as soon as possible. Although there is no real cure for the problem, it is known that the inflammation and pain go away over time as the growth plates finish their rapid growing phase. The management of apophysitis follows some basic principles, which are the same for all cases.

The first and foremost step in the management of apophysitis is **rest**. Stopping the repetitive stress is almost always the best treatment. "Playing through the pain" is not helpful, and working with coaches to change the activity is often the best approach. Concentrating on a different sport for a period of time can also help.

When there is pain, swelling, redness, and warmth in an apophysis, an anti-inflammatory is needed. The most effective and easiest way is ice, applied multiple times a day for 20 minutes at a time. If ice is not effective enough, then topical anti-inflammatory creams can be tried, and if these do not help, a systemic anti-inflammatory can be helpful.

Stretching of the muscle to decrease stress on the apophysis is the next step. Gentle stretches and foam rolling are the most effective in this regard.

Using devices to change the angle of the pull of the tendon can also be helpful depending on the location of the injury. These could include gel heel lifts, arch supports, or neoprene knee or elbow supports. Core shorts may also be used to help to keep the apophysis warm during periods of inactivity, and can relieve the stress on the apophysis.



Check out a free lifestyle assessment, available with the Health & Wellness team!



In the case of Sinding-Larsen-Johansson apophysitis, we have a whole Toolkit of treatment options to try!



Becoming an expert and setting a SMART goal ensures every treatment decision reflects your priorities, not ours!

BECOME AN EXPERT cont'd

Why does this matter?

At Group23, we often see patients frustrated with their symptoms, lack of improvement, and the cost of ineffective treatments, products, and devices. Often the biggest issue we see with a diagnosis is the patient's lack of knowledge of the subject because no one has taken the time to explain what is truly happening! It's not enough to just know the word apophysitis; it's important to us that you understand what it means!

Now you know more about apophysitis, we can address treatment options that will allow you to return to sport/activity as soon as possible. No matter where you start, you can get to the point of less pain and improved functionality... **IF** you create good SMART goals, utilize the options in your Toolkit, and commit to working proactively with your Group23 Health Journey team!

Our care philosophy

We see treatment choices as a Patient Health Journey, and we take pride in being on this Journey with you the entire way. The most crucial part is becoming an expert and creating Rise Above goals specific to you and your lifestyle. Once your Group23 healthcare team understands your destination, we can accurately create a treatment plan that is fit for you!



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