

Know Your Knee And ANTERIOR KNEE PAIN



Anterior knee pain is pain that originates at the front and centre of the knee. It is a very common source of pain, especially in the general population and athletes. Dr Michael Soon Yee Hoong, Orthopaedic Surgeon from Gleneagles Hospital, Mount Elizabeth Hospital and Parkway East Hospital, takes you through the anatomy of the knee, as well as the different aspects of anterior knee pain.

The knee is basically made up of four bones. The large bone in your thigh (femur) is attached to your shin bone (tibia) by ligaments and a capsule. The fibula is the other bone that runs parallel to the tibia; the patella or commonly called the knee cap, rides on the knee joint as the knee bends.

The main function of the patella is to transmit the powerful forces of the quadriceps (thigh muscles) from the thigh bone to the shin bone, as we extend our knee. Such actions and transmission of forces happen as we go through the daily motions of running, climbing stairs, cycling, etc.

REASONS BEHIND KNEE PAIN

The forces that act across the knee joint can be several times our body weight as we run and climb the stairs. It is therefore not a coincidence that the cartilage covering the knee cap is the thickest in the human body.

Although there is a myriad of causes of anterior knee pain, the common conditions can be broadly divided into two main groups: strained tendons (inflammation of the tendons of the knee or tendonitis) and chondromalacia of the patella (softening of the cartilage of the knee cap).

The reason for these conditions is usually mechanical in nature. When the knee cap does not glide and move in the correct direction with knee extension, it causes excessive or uneven wear in the knee cap. Over time, an overuse injury of the tendons results as the knees are subject to abnormal forces, and cartilage softening when the cartilage breaks down from abnormal loads.

Common causes of anterior knee pains due to overuse injuries can include flat foot, malalignment of the knee cap on the thigh bone (especially in females), tightness of the muscles around the knee joint, overweight (due to increased loads) and excessive activity that causes excessive amounts of stresses on the knee cap (like overtraining for a marathon).

FIXING YOUR KNEE PAIN

First Line Of Treatment

Once anterior knee pain sets in, it will be wise to determine the exact location of the injury, as treatment depends on the diagnosis. When presented early, anterior knee pain treatment includes simply resting the knee and not overusing it (such as cessation of running) until you can do so without pain. BRICE is an acronym often advocated for acute injury and stands for Brace, Rest, Ice, Compression and Elevation. Essentially, the mentioned measure seeks to reduce the pain and swelling of the injury, and allow healing to take place. Using anti-inflammatory can also help.

Once the acute pains are resolved, measures should be undertaken to prevent them from returning. Such measures will typically target at addressing the risk factors such as obtaining an insole for a flat foot deformity, and attending physiotherapy. Physiotherapy is an extremely important and integral part of the treatment of anterior knee pain. During such sessions, stretching of tight muscles and tendons and strengthening of antagonistic muscle groups (to reduce the stress

across the joint) are emphasised. Some treatments also include the consideration of taking oral supplements such as glucosamine to protect the joint.

Wearing special braces or specific taping manoeuvres are also useful for the duration of the exercise, to allow training to occur before the pain has completely resolved. The rotation of training among different exercises such as running, cycling, swimming exercises is also important. Such cross training encourages the different groups of muscles to be utilised and prevents performing the same action too many times, which can worsen the injury.

Surgical Treatments When Symptoms Persist

However, there are occasions where the symptoms persist or the injury worsens. In such cases, invasive treatments in the forms of injections or surgery may be required. For tendonitis, the aim of such treatments is to stop the inflammation and to allow the healing to fully occur. Recent advances in sports medicine have advocated the use of Platelet Rich Plasma (PRP). With this process, your own blood is taken and carefully prepared to isolate the components that have the ability to stimulate tissue healing. This is reinjected into the area of injury. This entire procedure can be done in the clinic and does not require hospitalisation.

For more severe cases when the tendonitis is so serious that the tendon partially ruptures, surgery is required to remove the diseased tendon and attach the torn tendon back to bone, with the aid of strong sutures and occasionally, plastic anchors.

Although common, anterior knee pain can arise from different locations, it is important to obtain a proper diagnosis, so that effective treatment can be instituted early. Most anterior knee pain conditions improve with a combination of rest, medication and directed physiotherapy.



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