CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION

Patellar tendinopathy

What you're feeling

Patellar tendinopathy, often called jumper's knee, is pain and swelling in the tendon just below your kneecap. It usually starts gradually rather than from a single injury. At first you notice pain after activity, such as after a game of netball or a run. Over time the pain can start during activity too, and eventually it may limit what you can do on the court or field.

The sore spot is usually at the bottom tip of the kneecap, where the tendon attaches to the bone. Pressing on that spot is tender. Jumping, running and other activities that load the tendon make it worse. Straightening your knee against resistance, such as standing up from a low chair or climbing stairs, can also hurt. Some people feel their knee give way briefly, which happens because pain makes the thigh muscles switch off for a moment.

In chronic cases the pain can linger even at rest. Sitting for long periods, such as at a desk or on a long drive, can keep it aching. The pain and swelling tend to build slowly over months or years rather than appearing overnight.

Tendon problems like this are common in people who play jumping sports, and they are also seen in the wider community. Tight thigh muscles, harder playing surfaces and frequent training sessions can all add to the load on the tendon. Carrying extra body weight is linked with this condition as well.

If you have had pain for a long time, you may notice it is affecting your sport or your daily routine. Squatting in the garden, kneeling, getting down to the floor and back up again, or hopping out of a car can all become uncomfortable. Some people find the pain flares on waking or after sitting still, then eases a little once they get moving.

How far the condition has progressed is often described in stages: pain after activity, pain during and after activity, or pain that limits what you can do during the activity itself.

What's actually happening

Your patellar tendon is a strong cord that joins the bottom of your kneecap to your shin bone. Think of it as a rope made of many thin fibres, all lined up so they can pull together. Every time you jump, land or push off, this rope takes the strain. Going up stairs, it handles about 3 times your body weight.

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The trouble starts where the rope anchors to the kneecap, in its deepest fibres. That spot gets the biggest forces when your knee bends under load, and it also has a poor blood supply. With less blood flowing through, the tissue struggles to repair itself. Repeated heavy loading then causes tiny damage that never quite heals. Over time the fibres break down and become disorganised, and the affected part of the tendon can thicken.

This damage is not the same as a torn or inflamed tendon. It is a slow wearing down of the tissue itself, sometimes called tendinosis. There are no inflammatory cells in it, which is why it does not behave like a typical injury that swells up and settles. New small blood vessels can grow into the damaged area, and these are thought to be linked to the pain you feel. The sore spot at the bottom of your kneecap, and the pain when you straighten your knee against resistance, come from this worn and thickened patch of tendon.

The condition is described in stages, which match what you can still do. In the first stage, pain comes on only after activity. In the second, it arrives during activity as well as after. In the third stage, the pain limits what you can actually do while playing or training. Most cases are managed without surgery, but surgery is considered when pain and swelling continue after a proper period of non-surgical treatment.

One more thing worth knowing: the same changes can show up in a tendon without causing any pain at all, so the picture on a scan does not always match how your knee feels.

What we can do about it

Dr Kieran Hirpara, an upper-limb surgeon at Mater Private Hospital Rockhampton, starts with the least invasive options that suit your condition. Patients are generally referred to our clinic by their GP; if a physiotherapist has suggested you see us, you will still need a referral from your GP in order to be eligible for the Medicare rebate. At your first visit we take a history, examine your knee and arrange imaging if it is needed. For a long-standing problem like this, we usually begin with non-operative care and consider surgery only if that has not given enough improvement.

The first step is changing how much you load the tendon. Cutting back or adjusting the jumping, running and training that stir up your pain lets the tissue settle. Physiotherapy then works on strengthening the knee and thigh in a steady, progressive way. Taping or a strap worn under the kneecap can also help some people, and men with milder symptoms seem to do better with a strap. Give this approach a fair go over several months before judging it.

Anti-inflammatory tablets can ease the pain in the short term. We do not use cortisone injections for this condition, because they raise the risk of the tendon rupturing. Other injections are sometimes considered when standard care has not worked. Shockwave therapy, which uses sound waves to stimulate healing, can help when other treatments have failed. Injections of platelet-rich plasma, a substance taken from your own blood that may promote healing, are an option for stubborn cases, often combined with a rehabilitation program. Some injections that target the new blood vessels growing in the tendon have improved knee function and reduced pain, and some people return to full tendon-loading activity after them.

Surgery comes into the picture when pain and swelling continue after a proper period of non-surgical treatment. The operation cleans out the damaged part of the tendon and encourages healing where it attaches to the kneecap. In some cases, if a significant part of the tendon has torn, it can be rebuilt as well. Keyhole

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surgery is an option for pain that has not settled with other treatment. We will talk through whether surgery suits you, and you make the decision together with us.

What to expect

Most people with this condition improve without surgery. The mainstay of treatment is non-operative care: changing your activity, then progressive strengthening exercises. This takes time, and it is worth giving it a fair go over several months. Some tendons settle fully with this approach, though in some people the pain can linger for years even with good rehabilitation, and not every part of the tendon returns to normal on a scan.

If the pain does not settle, surgery is considered. For people who reach that point, surgery leads to clear improvement in pain and day-to-day function, and most athletes get back to their sport. Improvements after keyhole surgery have been maintained for at least 3 years. That said, not everyone returns to their former level: only about half of people who had tendon-cleaning surgery were competing at their previous sporting level afterwards. Most people who had surgery gained relief from their symptoms either way.

A few honest caveats are worth knowing. In some people the condition keeps coming back, and this is seen particularly in elite soccer players. Some knee shapes, where the kneecap sits higher than usual, are linked with cases that do not improve with current surgery, and these may need a different surgical approach. If a significant part of the tendon has torn, rebuilding it along with cleaning out the damaged tissue lowers the risk of complications.

There are also things to avoid. Cortisone injections are not used for this condition because they raise the risk of the tendon rupturing. Anabolic steroids carry the same risk for this tendon and the thigh tendon above it.

On the positive side, athletes who return to play after treatment do so without any effect on how long their career lasts, and their performance is not affected by having had this condition. One thing that can help in the short term: isometric exercises, which hold the muscle tight without moving the joint, reduce tendon pain straight away, and the relief lasts at least 45 minutes.

When to see someone

See your GP if you have pain at the bottom of your kneecap that keeps coming back after training or games, or if the pain is now there during activity as well as after it. Ask for a specialist review if the pain stops you playing or training the way you used to, if it aches even when you are resting or sitting for long periods, or if it has gone on for months despite rest and physiotherapy. Seek care promptly if pressing on that spot is painful with your knee straight but not when it is bent, as this pattern points to the tendon itself. And if your knee suddenly gives way and you cannot straighten it against gravity, that may mean the tendon has torn, so have it assessed urgently.

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