CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION

# Meniscal tear

## What you're feeling

A torn meniscus, the rubbery pad of cartilage that cushions your knee, usually hurts along the joint line. That is the tender strip at the inner or outer edge of your knee, right where the thigh bone and shin bone meet. Many people feel the pain at the back of the knee. The inner side is affected about three times more often than the outer side.

How the tear happened shapes what you feel. In younger people, a twist or a sudden change of direction during sport is the usual story. Some people hear or feel a pop at the moment of injury. From middle age onwards, a tear can come from something as ordinary as squatting down or a fall. Many tears in older knees start gradually, with no single injury you can point to. Up to 40% of people notice symptoms begin on their own, without a clear cause.

Swelling is common. About half to two-thirds of people notice their knee puff up after a tear, and with a meniscal tear this usually builds over several hours rather than straight away. The swelling often comes and goes, flaring after activity and settling with rest. Some people find the knee feels tight when they bend it during a puffy spell.

The knee may also catch, click, lock or give way. Locking means the knee jams and will not straighten fully. Catching or locking can mean the torn piece is moving inside the joint. Pain often settles in the first days, then returns with swelling when you are back on your feet.

Day to day, the trouble shows up in bending and twisting. Squatting to a low cupboard, kneeling to load a dishwasher, getting up from the floor or pivoting on a stairs can all bring the pain on. Walking on flat ground is often fine, which is why many people keep going for weeks before seeking help.

Not every tear causes symptoms, and some tears that do cause trouble quieten down on their own over time.

## What's actually happening

Inside your knee, between the thigh bone and the shin bone, sit two wedge-shaped pads of cartilage called menisci. Each one has a triangular cross section, a bit like a rubber wedge or gasket sitting between two hard surfaces. They are mostly water, about 65% to 75% of their volume, held together by tough collagen fibres.

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Those fibres run in rings around the pad, which lets the meniscus stretch and spread load without splitting apart.

The menisci do several jobs at once. They act as shock absorbers, spreading the load across the knee. When your leg is straight they take about half of the load through the joint. Bend your knee to 90 degrees and they take up to 90%. They also help lubricate the joint, keep it steady, and feed back position sense, the awareness that tells your brain where your knee is without looking.

A tear breaks those ring-shaped fibres. When the rings are cut, the pad can no longer spread load the way it should, and pressure on the smooth joint surface rises. Removing the inner third of a meniscus raises contact stress on the cartilage by 65%. A tear that pulls the whole pad away from its anchoring point at the root does as much damage as removing the entire meniscus. That is why pain, swelling and locking tend to flare with bending and twisting: the torn piece is moving under load.

Not all tears are the same, and where the tear sits matters. The outer third of each meniscus has a good blood supply, so tears there have the best chance of healing. The middle third sits at the border. The inner third has no blood supply at all and gets its nutrition by diffusion, so tears there rarely heal on their own. Blood supply also fades with age, which is one reason tears in older knees behave differently from sport injuries in younger ones.

A tear can also irritate the joint lining, which adds to swelling and pain.

## What we can do about it

Dr Kieran Hirpara, an orthopaedic surgeon at Mater Private Hospital Rockhampton, matches the treatment to your specific tear. 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. We start with a clinic assessment, which covers your history, an examination and imaging where needed, before talking through the options with you.

Many tears do not need surgery at first. Small, stable tears near the outer edge of the meniscus, where the blood supply is good, often heal enough on their own to settle symptoms. Some wear-and-tear tears that do not cause locking or catching can also be managed without an operation. Physiotherapy aims to settle pain and swelling and build the strength that protects your knee. We usually ask you to give it a fair go before thinking about surgery, and sticking with the program matters.

Some tears are best left alone entirely. Partial-thickness tears, small tears under 5 to 10 mm, and tears that barely move can be observed rather than treated. If your knee has substantial wear-and-tear arthritis on X-ray, we are cautious about operating on the meniscus, because cleaning up a stable tear in an arthritic knee rarely brings lasting relief. In those knees, non-operative care comes first, and if it does not help enough, a knee replacement can be considered instead.

Pain relief is part of the plan. Simple pain medication and anti-inflammatories can settle flare-ups while physiotherapy does the longer-term work.

Surgery enters the picture when a tear causes your knee to lock or catch, when the tear is in the zone with no blood supply and cannot heal, or when physiotherapy has not given you enough improvement. There are two

main operations. A repair stitches the torn meniscus back together and is suited to tears in or near the well-supplied outer zone, vertical tears, root tears and younger patients, generally those under 40. Repair works with your knee's own healing, so it suits tears that can heal. A partial meniscectomy, meaning trimming away just the damaged piece, suits tears that cannot be repaired, such as radial or flap tears in the inner zone. We remove as little healthy meniscus as we can, because keeping meniscal tissue lowers the chance of future arthritis.

Repair is not right for every tear. Complex tears, poor tissue quality and advanced arthritis all work against healing. We will examine your knee and imaging, explain which option fits your tear, and decide together.

## What to expect

Many tears settle without an operation. Small, stable tears and some wear-and-tear tears often quieten down with physiotherapy, pain relief and time. Not every tear causes symptoms in the first place, and some that do become symptom-free on their own. If your knee does not lock, catch or swell up in flares, there is a fair chance simple measures will carry you through.

When surgery is done for the right reasons, most people get back to the activities they came in with. Repair and trimming both improve pain and activity levels in the short term. Repair has a slight catch: some people report their knee feels a bit worse at 6 and 12 months than those who had the tear trimmed instead. The trade is longer term. Keeping the meniscus lowers the chance of the knee wearing out, with less progression to wear-and-tear arthritis at around six years compared with trimming. Trimming removes tissue, and the more that is removed, the more pressure rises on the joint surface, which is why arthritis changes show up more often in the part of the knee that lost meniscus.

Repair does not always hold. About one in five repairs fail over the long term, and a third of repairs need another operation within five years. Repair works better when it is done at the same time as a ligament reconstruction than when the ligament is intact, and it works least well in a knee whose ligament has been torn and not rebuilt. Tears longer than 2 cm and smoking both lower the chances of the tear healing. Being 40 or older does not raise the risk of the repair failing, and men and women do about the same.

Leaving a tear alone has its own risks. The longer surgery is delayed, the more likely a tear becomes one that cannot be repaired. For people who have also torn their anterior cruciate ligament, the main stabilising ligament of the knee, waiting more than a year before surgery raises the risk of the meniscus tearing further and becoming beyond repair.

A few people whose meniscus was removed earlier go on to have a donor meniscus transplanted. In carefully chosen patients, most of these grafts are still working at 10 years.

## When to see someone

See your GP if your knee pain has not settled after a few weeks of rest and simple measures, or if the swelling keeps coming back after activity. Ask for a specialist review if your knee locks, catches or gives way, if it jams and will not straighten fully, or if the trouble is getting in the way of your work or sleep. These signs suggest the

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torn piece is moving inside the joint, and they matter more than pain alone, because pain on its own often settles with time. If your knee is hot, red or severely swollen, or you cannot bear weight at all, seek care promptly rather than waiting it out.

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