CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION

Posterior cruciate ligament injury

What you're feeling

A posterior cruciate ligament injury happens when the ligament at the back of your knee is stretched or torn. It usually comes from a blow to the front of your shin, such as your knee hitting a car dashboard, or a fall onto a bent knee with your toes pointing down. Sports injuries to this ligament come from a direct hit or outside force, not from the twisting and slowing-down movements that injure other knee ligaments.

Most people with this injury feel pain, swelling and stiffness in the knee. Unlike some other knee ligament injuries, you may not have heard a pop at the time, and your knee may not feel unstable at all. The pain is often at the front of the knee around the kneecap, or along the inner side or back of the knee. It tends to show up when you walk uphill or downhill. Daily tasks that load the front of the knee, such as going up and down stairs or getting out of a low chair, can be uncomfortable. Some people notice bleeding into the joint soon after the injury, which makes the knee swell and feel tight.

If your injury is older or involves other parts of the knee, the picture can change. Some people feel hardly anything, while others feel the knee giving way, especially if the outer side of the knee was also injured or if your legs naturally bow outwards. Over time, the kneecap joint and the inner part of the knee can develop wear-and-tear arthritis, which is why ongoing pain in those areas matters.

What's actually happening

Inside your knee, two strong cords cross over each other in the middle of the joint. The one at the back is called the posterior cruciate ligament, or PCL. Think of it as a thick rope that stops your shin bone from sliding backwards under your thigh bone. It works at every angle of the knee, whether straight or bent, and it also helps steady the knee against sideways and twisting forces.

The PCL is actually made up of two parts working together. One part tightens when your knee bends, and the other tightens when your knee straightens. When the ligament is stretched or torn, one or both of these parts stop doing their job, so the shin bone can shift backwards more than it should. That looseness, along with the extra load it puts on the front and inner parts of the knee, is what produces the pain and stiffness you read about above.

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Doctors describe how badly the ligament is hurt by grading it. A mild grade means the ligament is stretched but still connected, like a rope with a few frayed strands. A middle grade means it is partly torn and looser than normal. A severe grade means the ligament is torn right through, so it no longer holds the shin bone in place. Mild and moderate injuries often settle without surgery, especially if the rest of the knee is sound. A complete tear, or one where other ligaments or the outer corner of the knee are also damaged, is more likely to need an operation.

It is worth knowing that this ligament is thicker and stronger than the better-known ligament at the front of the knee, so injuring it usually takes a real force. That is also why these injuries often come with damage to other parts of the knee, and why your surgeon will check the whole joint carefully before deciding what treatment you need.

What we can do about it

Dr Kieran Hirpara, an orthopaedic surgeon at Mater Private Hospital Rockhampton, matches the treatment to your specific injury. 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 appointment we take a history, examine your knee and arrange imaging where it is needed to work out how bad the injury is and whether anything else in the knee was hurt at the same time.

Most mild and moderate injuries settle without an operation. We start with physiotherapy that strengthens the thigh muscle at the front of your leg, called the quadriceps. That muscle holds your shin bone forward and stops it sagging backwards, which is the main problem when this ligament is loose. A special brace can also help hold the bone in place. For a mild or moderate injury, most people are back to sport in 2 to 4 weeks. A complete tear treated without surgery usually means keeping the knee straight in a brace or cast for 4 weeks, then moving on to the strengthening work. With steady quadriceps exercises, 80% of these injuries reach a good result without surgery.

Surgery comes into the picture when the ligament is torn right through and your knee stays painful or unstable, or when other ligaments were injured at the same time. If several ligaments are torn, we usually recommend operating early rather than waiting. The operation replaces the torn ligament with a new piece of tissue, called a graft, so the shin bone is held in place again. If a piece of bone was pulled off with the ligament, that can be fixed back in place instead. We will talk through what the operation involves on its own page, and you decide together with us whether it is right for you.

What to expect

For a mild or moderate injury, the outlook is often steady. With strengthening exercises and, where needed, a brace, the pain and swelling usually settle over weeks rather than months, and many people return to sport quickly. Long-term results without surgery show people staying active, with good strength and full range of motion in the knee. Even when some looseness remains, it does not always cause trouble. Some people with lasting looseness report no functional difficulties at all.

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A complete tear is a different story. Left alone, a fully torn ligament does not pull itself back together, and the looseness tends to persist. Over the years, that extra movement can load the front and inner parts of the knee and lead to wear-and-tear arthritis, which is why ongoing pain there matters. In children, waiting too long before operating raises the risk of damage to the cushioning cartilage in the knee, which can lead to poor long-term outcomes.

If you do need surgery, it is worth knowing what it can and cannot fix. Replacing the ligament improves how your knee feels and makes returning to sport more likely. In injuries where several ligaments were torn, all patients had a stable ligament at their most recent check-up, and 77% had no looseness at all. For a complete tear on its own, results are good but not perfect: the ligament is fully stable again in about half of knees, while some retain mild or moderate looseness. Combined injuries that involve the outer corner of the knee tend to do less well than injuries to a single ligament, and results overall do not reach the level seen after front-of-knee ligament repairs. Within the first 2 years after surgery, failure rates are similar whether one ligament or several were rebuilt. Most people keep the natural sense of where their knee is in space, and knee scores and looseness both improve after the operation.

When to see someone

See your GP if you have knee pain, swelling or stiffness after a blow to the front of your shin or a fall onto a bent knee, especially if the knee swells quickly and feels tight from bleeding into the joint. Ask for a specialist review if pain at the front, inner side or back of the knee keeps troubling you on hills or stairs, or if your knee starts to feel loose or gives way, which is more likely when other parts of the knee were injured too. Go to an emergency department straight away if your knee was dislocated or if several ligaments were torn in a fall or crash, because the blood vessels and nerves at the back of the knee can be damaged and that needs checking on the same day. If you have already had this ligament rebuilt and the knee becomes hot, red, swollen and feverish, that needs urgent assessment as well.

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