CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION

Distal femur fracture

What you're feeling

A broken lower end of the thigh bone, just above the knee, hurts where the break is. The pain is usually sharp at first and settles into a deep ache. Standing, putting weight on the leg, bending the knee and twisting on that leg all make it worse. Resting with the leg still and supported eases it.

The ache often flares at night and first thing in the morning, and it can throb after you have been on your feet. Even small movements of the knee can hurt, because the break sits right where the thigh bone meets the knee joint. Some people feel the knee is unstable, as if it will not hold them.

Day to day, the leg is hard to use. Walking any distance, climbing stairs, getting out of a low chair and stepping into the shower all become difficult. You may need crutches or a frame, and carrying things while walking is a struggle. Sleeping on that side, driving and getting in and out of the car can also be a problem.

This injury is more common in older adults, especially women after 60, and often happens when the bone is already thin. In older people it can be a serious injury. About 1 in 4 people over retirement age with this fracture do not survive the year after it, and medical problems after surgery are common in this age group. That is one reason surgery is usually recommended: holding the bone still lets you get up and moving early, which matters for your health and independence.

Recovery takes time. Even with modern treatment, the leg may not feel fully back to normal at one year, and the effect of the injury on your quality of life can last up to 12 months. Your knee and hip movement generally returns over time.

What's actually happening

The thigh bone has a wide shaft and a lower end that widens into two rounded knobs, one on each side of the knee. These knobs form half of the knee joint and are covered in smooth cartilage so the joint glides. A distal femur fracture is a break in this lower end, just above the knee. When the bone breaks here, the rough broken edges and any shift in the bone's position are what cause the sharp pain and the feeling that the knee will not hold you.

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The break can also affect how the knee lines up. The two knobs need to sit level with each other for weight to pass evenly through the joint. If a break lets one side drop or the joint surface step out of place, weight is carried unevenly, which can wear the cartilage faster over time. The knee is also held together by strong straps called ligaments, and these anchor to the very part of the bone that has broken, so the joint can feel loose until the bone is held still.

This injury is uncommon, making up about 0.5% of all fractures. It happens more often in older adults, especially women, because the bone is often thinner by then. In younger people it usually takes a big force, such as a car crash or a fall from height. In older people it can happen from a simple fall onto the leg.

Because the bone is broken into pieces that have shifted, it rarely stays put on its own. That is why surgery is usually advised: the bone is held in the correct position with a plate or rod and screws while it knits together. Holding the pieces still also lets you start moving the knee early, which helps prevent stiffness. The main risks of this injury are that the bone fails to knit at all, or knits in a poor position, and these risks are higher when bone quality is poor.

What we can do about it

Dr Kieran Hirpara, an orthopaedic surgeon at Mater Private Hospital Rockhampton, matches the treatment to your specific fracture. 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. A clinic assessment, including your history, an examination and imaging where needed, establishes the diagnosis. Because this is an acute injury, surgery may be recommended straight away, without a trial of non-operative care first.

Before any decision, we work out the exact pattern of the break. Plain X-rays are the usual first step. Sometimes X-rays are taken without putting weight through the leg, because this shows the injury without risking further shift in the bone. A CT scan, which builds detailed pictures from X-rays, can show the fracture lines and any displacement in the knee. For complex breaks that run into the joint surface, a three-dimensional CT reconstruction can help with planning the operation.

For most people with this fracture, holding the bone still with surgery is the treatment. The aim is to line the broken pieces up correctly and keep them there while the bone knits together. This is done with metal implants, most often a rod placed down the hollow centre of the thigh bone, or a plate and screws along the outside of the bone. The choice depends on the fracture pattern, your bone quality and your knee. If the break has broken the skin, an external frame can hold the bone from outside while the soft tissues settle. When a previous knee or hip replacement is nearby, we plan the fixation so it grips enough healthy bone above and below the fracture.

Some breaks are simple, with one clean split between two pieces. In these cases a screw across the split can hold the gap closed, which helps the bone knit faster. If the bone is broken into several pieces, a second plate on the other side of the bone is sometimes added. This can improve knee movement at 6 months, reduce complications overall, and lower the chance of the bone healing in a poor position.

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If the bone fails to knit, more surgery may be needed. This can mean adding a plate alongside the existing rod, sometimes with a graft of your own bone to help the break heal. Preserving the blood supply at the fracture site guides how we do this.

What to expect

Most broken lower ends of the thigh bone are treated with surgery, and holding the bone still lets you start moving early. With modern treatment, your knee and hip movement generally returns over time. But recovery is a long road. The effect of this injury on your quality of life can last up to 12 months, and even then the leg may not feel fully back to normal.

Healing itself takes months, not weeks. For fractures of the thigh bone treated with a rod down the centre, the bone usually knits in around 18 weeks, though some people need longer than 25 weeks. If the bone is slow to knit or fails to knit at all, further surgery can help it heal, and that healing also takes months.

The main things that can go wrong are that the bone fails to knit at all, or knits in a poor position. This risk is higher when the bone is thin, and in people over 70 with a break that runs into the knee joint, close to 1 in 5 develop a nonunion. When a knee or hip replacement is nearby, about 18% develop a nonunion and roughly 1 in 4 have some complication. If infection or nonunion does happen, it can become a long-term condition for nearly a quarter of the people affected.

Leaving the break alone is rarely an option. Without surgery, the bone rarely stays in place on its own, and lying still for weeks brings its own problems, which is why surgery is usually advised. In older adults this injury is serious: about 1 in 4 people over retirement age do not survive the year, and medical problems after surgery are common in that age group.

The realistic picture is this. With treatment, most people regain their knee and hip movement over time, though the leg may not feel fully normal for up to a year. Some need more surgery along the way. Your surgeon will watch your healing with X-rays and tell you how your bone is knitting at each review.

When to see someone

This injury usually announces itself. The pain is sudden and severe, and the leg may not take weight, so most people go straight to an emergency department. Go to an emergency department if you have had a fall or a blow to the thigh and the pain is severe, the leg looks bent or shortened, or you cannot stand on it. Go straight away if the broken bone has pushed through the skin. Ask for a specialist review if you have had a knee or hip replacement before and you now have sudden pain just above the knee, because a break around a replacement needs urgent assessment. In older adults this injury is serious: about 1 in 4 people over retirement age do not survive the year, so do not wait to see whether it settles.

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