CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION

# Subtrochanteric fracture

## What you're feeling

A subtrochanteric fracture is a break in the thigh bone, just below the hip. The pain sits deep in your upper thigh or groin, and it is usually severe. Standing, walking or putting weight on that leg makes it worse. Resting with the leg still eases it.

The break sits in a spot where strong muscles pull the bone out of line. That is why this type of fracture is unstable and can be hard to hold in place while it heals. It also means the pain tends to flare whenever the muscles grip, such as when you roll over in bed at night or try to get up from a chair after sitting a while.

Everyday tasks become difficult quickly. You will struggle to stand, climb stairs, or get to the bathroom without help. Getting in and out of a car, or lowering yourself onto a toilet, puts load through the upper thigh and often hurts. Sleeping on that side is uncomfortable, and the ache can wake you.

Some fractures in this area happen after long-term use of bone-thinning medicines. These are called atypical fractures. Before the bone breaks, some people feel a dull ache or deep thigh pain for weeks or months first. If you have been on one of these medicines and have new thigh pain, tell your doctor early.

Healing in this part of the thigh bone can be slow. Sometimes the bone takes longer than usual to join, and in some cases it does not join at all without further treatment. This affects your recovery more than the type of fracture you have: people with these atypical breaks and people with ordinary breaks tend to have similar outcomes overall.

A fracture here also weighs on your general wellbeing. Older people often find their quality of life drops, both in the first months and over the longer term. That is a normal part of this injury, and it is worth raising with your care team as you recover.

## What's actually happening

The thigh bone carries all your weight when you stand and walk. The break sits in a section just below the hip where the bone is dense and thick, and where the forces running through it are the highest anywhere in the skeleton. Think of it as the load-bearing pillar of your leg. When it snaps, standing on that leg is not possible without severe pain.

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The bone here is dense cortical bone, the hard outer shell rather than the spongy inner bone. This dense bone has a limited blood supply, and that is one reason healing in this spot tends to be slow. The break is also often broken into several pieces rather than two clean ends, which adds to the challenge.

Strong muscles surround this part of the thigh, and they keep pulling once the bone has broken. The muscles that bend the hip and swing the leg out to the side tug the top piece one way. The muscles that pull the thigh inwards drag the bottom piece the other way, shortening it. This is why the bone will not stay lined up on its own, and why the pain flares whenever those muscles grip.

Some breaks here happen after a fall in an older person with thinning bones. Others follow a major injury such as a car crash in a younger person. A third group happens with little or no fall at all, in people who have taken bone-thinning medicines for a long time. These are the atypical fractures described earlier.

Because the bone is under such high force and the muscles keep pulling the pieces apart, this fracture is known as a demanding one to treat. It has a higher chance than most of the repair hardware failing or the bone taking longer to join. That is why treatment usually involves surgery to hold the bone firmly while it heals.

## What we can do about it

Dr Kieran Hirpara, an upper-limb 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. A clinic assessment, including your history, an examination and imaging where needed, establishes the diagnosis.

For this fracture, surgery is usually the mainstay of treatment. The break sits in a spot where strong muscles keep pulling the bone out of line, so it rarely stays put on its own. We usually recommend surgery in all cases unless you decline it or another medical condition makes an operation unsafe for you. Some people, such as those who cannot walk or who have paralysis affecting both sides of the body, may be managed without surgery, though even then an operation can make care and comfort easier.

The usual operation is a metal rod placed inside the hollow centre of the thigh bone, with screws holding the pieces in line. This is called an intramedullary nail, and it is the standard treatment for this fracture. The rod carries load through the bone while it heals, which matters here because the forces through this part of the thigh are several times your body weight. Less often, a plate and screws on the outside of the bone may be used instead. Which option suits you depends on the shape of the break and your general health, and we will talk it through with you as a shared decision.

If the bone does not join, or the repair fails, further surgery can still help. That may mean redoing the fixation, using a bone graft to encourage healing, or in some cases replacing the upper thigh bone with an artificial joint. These are salvage operations, and they have their own considerations which we would discuss at the time.

You will not be sent home to manage this with rest and physiotherapy alone. Physiotherapy still matters, but it comes after surgery, to rebuild strength and get you walking again.

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## What to expect

With surgery, most fractures in this spot do join. The bone knits slowly here, and that is normal for this part of the thigh. You can expect a recovery measured in months rather than weeks, because the dense bone and the strong muscles around it make healing a slower job than in many other breaks.

The outlook is good when the bone is held firmly in line while it heals. Getting the pieces lined up well matters a lot here, and that is something your surgeon works hard to achieve during the operation. When that goes to plan, the rod carries the load while your body does the mending, and you rebuild strength and walking over the months that follow.

There are honest risks to know about. Because of the huge forces through this part of the bone, the repair hardware carries a higher chance of failing than in most other fractures. The bone can also take longer than usual to join, or in some cases fail to join at all. If that happens, it usually brings further problems with it, and further surgery is often needed to get things moving again. Some people also end up with the bone healed in a slightly twisted position, which can affect how the leg feels and works.

Without treatment, the picture is harder. The muscles keep pulling the pieces out of line, so the bone will not stay put on its own. It will not join in a useful position without surgery, and you would be left unable to put weight on that leg.

If the bone does not join after the first operation, all is not lost. Further surgery can still get the bone to unite, and when it does, the break does heal. Some fractures caused by long-term use of bone-thinning medicines are slower still, and they need patience and a longer stretch of follow-up before they are declared settled.

Older people should know that recovery affects the whole person, not just the thigh. Quality of life often dips in the first months and can stay lower for some time. Early attention from your care team, including your GP, helps you get back on your feet.

## When to see someone

This fracture is an emergency. If you have had a fall or injury and cannot put weight on your leg because of severe thigh or groin pain, go to an emergency department. Do not wait for a GP appointment.

Some warnings come later. If you have been taking bone-thinning medicines for a long time and develop a dull ache or deep thigh pain, see your GP early, even if no fall has happened. This pain can appear weeks or months before the bone actually breaks, and it needs checking before it does.

After treatment, watch for the problems this fracture is known for. Ask for a specialist review if your thigh pain is not settling over the expected months, or if the leg feels shorter or twisted compared with the other side. Go to an emergency department if you have fever, spreading warmth or redness around the thigh, or a sudden inability to bear weight after a period of improvement, as these can signal infection around the repair or a problem with the metalwork that needs same-day assessment.

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