

Calcaneal fracture

What you're feeling

A calcaneal fracture is a break in your heel bone. The pain sits deep in the back of your foot, under and behind your ankle. It usually starts the moment you injure it, and putting any weight on that foot makes it much worse. Standing, walking to the letterbox, or climbing even two or three stairs can be too much at first.

Your heel and the area around your ankle will swell. The swelling often builds over the first day and can make your foot look puffy and bruised. It tends to feel worse after you have been on your feet, and it can throb at night or when you take your shoe off. Resting with your foot up eases it. Some people find the heel feels stiff and sore first thing in the morning, especially around the back of the ankle where the swelling sits.

Everyday tasks that need a working heel become hard. You may need crutches or a frame because standing at the kitchen bench or hanging out washing puts weight through the sore side. Driving, carrying shopping, and getting to the bathroom without help can all be a struggle. Because the heel takes your body weight every time you stand, this injury tends to limit you more than many other foot breaks.

Some heel pain builds slowly rather than coming from one fall. If your heel has been aching for weeks without a clear injury, it is worth getting it checked. A stress fracture is a small crack caused by repeated strain, and if it is picked up late it can lead to ongoing pain, slow healing, and sometimes the need for an operation.

How your heel recovers depends a lot on where the break sits. Breaks that involve the joint above the heel, where the heel meets the rest of the foot, tend to cause more lasting stiffness and trouble than breaks that stay outside the joint. Many people find this injury changes things for them over the long term, and it is common for your heel to feel different from before.

What's actually happening

Your heel bone, the calcaneus, is the largest bone in the back of your foot. It sits under your ankle joint and takes your body weight every time you stand. Its top surface has smooth, curved areas where it meets the bone above it, and these let your foot roll and swivel as you walk.

Most of these breaks happen when you land hard on your feet, usually from a fall from a height. The force shoots up through your leg and the bone above your heel is driven down into the heel bone like a hammer

hitting a block. The heel bone is built like a honeycomb inside, strong in some directions and thin in others, so a hard enough landing can crush it. The break can squash the heel shorter and wider, and it can crack into the joint surface where the heel meets the rest of your foot.

Where the break sits matters a lot. Some breaks stay outside the joint, and these tend to heal with less trouble. Others crack into the joint surface and knock it out of line, a bit like breaking the smooth tiles on a floor. Rough tiles grind instead of gliding, which is why these breaks often lead to stiffness and aching in the joint above your heel. The more the joint surface is knocked out of place, the more your foot function and quality of life can be affected over time.

Your surgeon can measure on an X-ray how squashed the heel has become. A healthy heel sits at an angle of 25 to 40 degrees, and a crushed heel loses some of that height. Restoring the heel's normal shape, including the curve of your arch and the height of your heel compared with the other side, is a key aim of treatment, because it gives your foot its best chance of working well again.

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. At your first visit we take a history, examine your foot, and arrange imaging where it is needed. X-rays show the break, and a CT scan, which is a detailed scan of the bone, helps us plan if an operation is on the table.

Because a heel break is an acute injury, surgery may be recommended straight away rather than after a trial of non-operative care. The aims are the same whichever path you take: line up the joint surface where your heel meets the rest of your foot, restore the height of your heel, bring the widened heel back to its normal width, and free up the space where two tendons run beside your ankle. For some breaks that stay outside the joint, or breaks where the pieces have not moved, a closed method without surgery can work well. That means rest, a protective boot or cast, and keeping weight off the foot while it heals. Physiotherapy aims to restore movement and strength once the bone is stable enough.

Whether surgery is right for you depends on the break and on you. Some breaks crack into the joint surface and knock it out of place, and many of these do better with an operation that puts the pieces back and holds them steady. We weigh up your age, your general health, the quality of your bone, how much walking you do, and whether you smoke, because smoking raises the chance of wound problems after surgery. Some health conditions, such as diabetes with loss of feeling in the foot, or an active infection, make an operation unwise. We use less invasive techniques where they suit the break, and these can mean fewer wound problems than larger incisions. For the most severe breaks, where the joint surface is badly crushed, surgery may aim to set the bone up well for a later fusion, which is an operation that stiffens the joint on purpose to take away pain.

This is a shared decision. We will explain what each option means for your foot, and you decide what matters most to you.

What to expect

A heel break is a serious injury, and it is honest to say the road back is a long one. Most people find this injury changes things for them over the long term, and it is common for your heel to feel different from before. Breaks that crack into the joint surface, where your heel meets the rest of your foot, tend to cause more lasting stiffness and aching than breaks that stay outside the joint. Those outside-the-joint breaks, about one in three of all heel breaks, usually settle with less trouble.

Recovery is measured in months rather than weeks. You will spend the early period keeping weight off the foot, then build up gradually. Putting some weight through the foot within the first six weeks after an operation does not appear to cause the problems people once feared, so your surgeon may let you start earlier than you expect. Even so, expect swelling, stiffness, and a limp that fades slowly. Many people still notice their heel at the end of the day, and some find their walking pattern never quite returns to what it was.

Outcomes vary with the treatment path. Surgery that puts the broken pieces back in line is linked with better long-term results when it restores the heel's shape, and good results in terms of function and quality of life are seen in the months and years after fixation. But surgery for these breaks carries a real chance of wound problems, and the overall complication rate is high. Non-operative care, with rest and a boot or cast, can also produce satisfactory results with fewer complications. For breaks that crack into the joint, follow-up over fifteen years has shown similar results whether the break was treated with surgery or without it.

What tends to matter is where the break sits, your general health, and the experience of the team treating you. Heel breaks are difficult injuries, and they are best managed by surgeons and centres that see them often. Your surgeon will talk you through what the evidence means for your particular foot, and together you can weigh up what each path offers.

When to see someone

A heel break is usually obvious: a fall from a height, then pain you cannot walk on. Get it checked the same day. Go to an emergency department if your heel is badly swollen and bruised, if the pain is severe, or if you cannot put any weight on the foot at all. Ask for a specialist review if your heel has been aching for weeks without a clear injury, because a stress fracture picked up late can lead to ongoing pain, slow healing, and sometimes an operation. Seek urgent care if the swelling is severe and the skin feels tight, or if you also injure the same leg higher up, as more than one break in the same foot or ankle is a serious combination.