

Pilon fracture

What you're feeling

A pilon fracture is a break in the bottom end of your shin bone, right where it forms the ankle joint. The pain sits deep in your ankle and lower leg, and it usually hurts on both sides of the joint, not just one spot. Because the joint surface itself is involved, the ache tends to spread across the whole ankle rather than staying in one place.

The pain is usually worse when you're on your feet. Standing, walking, and pushing off that foot all load the injured joint, so expect the ache to build through a day of activity. Swelling around the ankle is common, and it can make the skin feel tight and tender. Resting with the foot up often settles things down. Many people find the ankle is stiff and sore on waking, then loosens a little as they move around.

Everyday tasks that need a stable, pain-free ankle become hard. Walking to the letterbox, standing at the kitchen bench to cook, climbing stairs, and getting to the bathroom without support can all be a struggle. Driving may be off the table for a while if it's your right ankle. Even getting shoes on can be tricky when the ankle is swollen and stiff.

This injury can also wear you down in ways that aren't just physical. Pain that limits your daily life for months, and trouble sleeping because of the ankle, can affect your mood and overall wellbeing. That's a normal response to a serious injury, and it's worth mentioning to your care team if it's happening to you.

One more thing to know: this is an injury where the details matter. The way the broken bone pieces sit after treatment has a real bearing on how the ankle works later, and surgeons plan carefully around the soft tissue and swelling before operating. Your surgeon will talk you through the plan for your particular fracture.

What's actually happening

Your ankle is a snug socket formed by three bones: the shin bone on top, and two smaller bones either side that grip it like a clamp. The end of the shin bone that forms the roof of that socket is called the plafond. In a pilon fracture, that roof breaks. The force usually comes straight down through the foot, such as in a fall from height or a car crash, and the heel bone drives up into the shin like a hammer driving a nail into a piece of wood. The joint surface shatters into pieces.

The damage is not just bone. The socket is lined with smooth cartilage, the slippery surface that lets the joint glide. When the break runs through that surface, the pieces can sit unevenly, and the ankle loses its smooth track. That is why the swelling, the deep ache, and the trouble bearing weight you have just read about happen: the joint itself is injured, not just the bone around it.

The ankle also has strong straps of tissue holding the bones together, including one on the inner side that keeps the joint from splaying apart. A hard downward force can strain or tear these too. Surgeons check several things before calling an ankle lined up again: the two side bones must be back to their full length, the heel bone must sit square in the socket with no tilt, the gap on the inner side must be back to its normal width, and the two leg bones must not be pulled apart.

Swelling matters here too. It can be severe, and surgery often waits 5 to 14 days for it to settle enough that the skin can be closed safely afterwards. Rushing in through swollen, blistered skin raises the risk of wound trouble, so the delay is a planned part of treatment, not a hold-up.

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 that first visit we take a history, examine your ankle, and arrange scans where they are needed. Because this is an acute injury, surgery may be recommended straight away rather than after a trial of non-operative care.

The first step is often a temporary external frame. This is a scaffold outside your leg that holds the bone steady while the swelling settles. It protects the damaged soft tissue, the skin and muscle around the break, and it buys time before any operation on the bone itself. Waiting 5 to 14 days for swelling to go down is a planned part of treatment, not a hold-up.

Scans shape the plan. A CT scan builds a detailed picture of the broken pieces, and planning the operation on those images helps put the joint surface back together and lowers the chance of wound trouble. Once the skin is ready, the usual operation is open reduction and internal fixation. In plain terms, we open the ankle, rebuild the shattered joint surface, and hold the pieces with a plate and screws. The approach we use depends on where your particular fracture sits, and some patterns are reached through incisions at the back or inner side of the ankle.

For fractures where the bone is broken into too many pieces to rebuild, or where the soft tissue will not safely allow plates, there are other options. An external frame can be the main treatment rather than a temporary one. For a small group of severe injuries, fusing the ankle, joining the shin and heel bones into one solid block, may be the choice. A rod through the heel into the shin is another option for some patients, and it can allow weight on the foot soon after surgery.

Open fractures, where bone breaks through the skin, need extra care. We clean the wound thoroughly, use antibiotics, and often start with an external frame before moving to the next stage. Early movement exercises after surgery help the ankle recover and reduce complications, and we will guide you through those when the time comes.

What to expect

A pilon fracture is a serious injury, and it is honest to say the road can be long. More than three years after the injury, some people still feel the effects on their health and wellbeing. How you fare depends a lot on how badly the bone and soft tissue were damaged in the first place, and on how well the joint surface is put back together. More severe injuries tend to have a poorer outcome.

This injury affects quality of life regardless of which treatment is used, because the injury itself is severe. That is not a reason to lose heart, but it is worth knowing upfront. The things that matter most are careful planning before surgery, careful technique, and giving the swelling time to settle before operating. When the joint surface is rebuilt well, the ankle has a fair chance of serving you well. When the pieces sit unevenly, the ankle tends to pay for it later.

There are real risks to be aware of. Deep infection needing more surgery happens in a small number of cases, around 6% when the bone is fixed early in suitable patients. Wound problems are the complication this injury is known for, which is why your surgeon plans carefully and often waits for swelling to settle. Some people develop arthritis in the ankle over time, and the hardware holding the bone can occasionally break or loosen. If you have other health conditions, such as diabetes or problems with the nerves in your feet, healing can be slower and results less predictable.

Leaving a displaced pilon fracture alone is not a good option. The joint surface stays in pieces, and the ankle wears out faster as a result. Managed well, most people get back to daily life, though some are left with stiffness, an ache in cold weather, or a joint that will never feel quite like it did before. Your care team will keep an eye on you for at least a year, because infections most often show up in that window. Ask questions at any point. Knowing what lies ahead makes the months easier to walk through.

When to see someone

A pilon fracture is an emergency. Go to an emergency department if you have had a fall from height or another heavy impact and your ankle is severely painful, swollen, or you cannot put weight on it. The same applies if the bone has broken through the skin, or if the skin is stretched tight and blistered over a badly swollen ankle. These injuries need assessment straight away, not a GP appointment.

After treatment, see your GP promptly if you notice spreading redness, warmth, or oozing from a wound, or if you develop a fever. Deep infection is a known risk with this injury, and it most often shows up within the first year. Ask for a specialist review if pain and swelling are not settling as expected, or if your ankle is not improving over the months after surgery.