

Cavus foot

What you're feeling

A cavus foot has a very high arch. The main problem is that the front of your foot sits tilted down towards the ground. To keep the outside of your foot on the floor, your heel tips outward. Over time, the thick band of tissue along the sole of your foot tightens, and the heel becomes stiffer in that tipped position.

You may feel pain at the front of your ankle. Because the front of your foot points down so sharply, your ankle has to bend upwards more than usual just to keep your foot flat. When it runs out of room, the bones at the front of the ankle press against each other and that hurts.

You may also notice hard, tender patches of skin under the ball of your foot, under your big toe, and along the outer edge of your foot. These calluses form because your weight presses down on small spots instead of spreading evenly. Standing or walking for long stretches can make them sorer. The small muscles inside your foot often waste away, and your toes may curl or claw downwards. That clawing can make shoes rub and make finding comfortable footwear hard.

Many people with this foot shape feel unsteady. Your ankle may give way, and you may roll it on uneven ground or when stepping off a kerb. Repeated sprains, soreness along the outside of your ankle, and small cracks in the bones of your foot can all follow from the way your weight is shifted to the outer edge.

The changes often affect both feet, though one side can be worse than the other. Because this foot shape often runs in families and can be linked with a nerve or muscle condition, your surgeon will ask about your family history and check the nerves in your legs. If only one foot is affected, scans of your spine may be needed to look for the cause. Weight-bearing X-rays of your foot and ankle show how high the arch is and whether the heel is still flexible.

What's actually happening

Think of your foot as a tripod. A healthy foot stands on three points: the heel, the ball behind your big toe, and the ball behind your little toe. In a cavus foot, the front half of the foot drops down too far, especially under your big toe. To keep the outside of your foot touching the floor, your heel has to tip outward. Your weight then travels down one edge of the tripod instead of being shared across all three points.

The dropped front of the foot usually starts with the small muscles inside the foot. When they become weak or tight, they stop balancing the stronger muscles in the calf and leg. The tight band of tissue along your sole pulls the arch up higher and higher, and presses the long bones of your toes down onto the ground. With those muscles out of balance, your heel tips outward and your toes curl and claw.

This foot shape rarely appears on its own. It is usually a sign of an underlying nerve or muscle condition, most often one called Charcot-Marie-Tooth disease, which affects the nerves running to the muscles. About two-thirds of people with a cavus foot have such a condition. Around one person in ten has this foot shape to some degree, and most never have symptoms. It seldom shows up in young children but becomes fairly common after 8 to 10 years of age.

Everything you feel follows from this pattern of imbalance. The dropped front of your foot forces your ankle to bend upward further than it can, which causes the pain at the front of your ankle. Your weight pressing on the ball of your foot and outer edge creates the calluses. The tipped heel makes your ankle unsteady and prone to rolling. Even a mild version of this foot shape can lead to repeated sprains, tears in the tendons along the outside of your ankle, and small cracks in the bones of your foot.

What we can do about it

Dr Kieran Hirpara, an orthopaedic foot and ankle surgeon at Mater Private Hospital Rockhampton, starts with the least invasive options that suit your condition. 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 scans where they are needed. Because this foot shape is long-standing, we usually try non-operative care first and consider surgery when that has not given enough improvement.

The simplest treatments aim to loosen what is tight and strengthen what is weak. Stretching the Achilles tendon, the strong cord at the back of your ankle, is a mainstay. Physiotherapy also works on strengthening the muscles that lift your foot and turn it outward. For a mild, flexible, painless foot, this program may be all you need. Shoe changes and inserts can spread your weight more evenly and ease pressure spots, though they do not correct the arch itself. Cushioned, neutral running shoes reduce the load under the sole if you are active. If your toes claw, a simple splint that holds them straighter can improve walking without harming the skin. In children with a nerve-related foot, these measures can hold off surgery for years, and in about half of children followed to the end of growth surgery is avoided altogether. Give non-operative care a fair trial before deciding anything further.

We do not use cortisone or other injections for this condition, so we will not offer them. For the nerve condition that often underlies this foot shape, injections of botulinum toxin are safe and well tolerated, but they do not slow the change in the arch. Serial casting has not worked either, and high-dose vitamin C does not alter the condition.

Surgery enters the conversation when your foot is painful, stiffening, or getting worse despite the steps above. We aim to keep your joints moving wherever we can. That can mean releasing the tight tissue along your sole, moving tendons to rebalance the foot, or cutting and reshaping bones to bring the arch down. If your heel is

still flexible, joint-sparing surgery is our preference. When the foot is rigid and severe, or the joints are worn, fusing some of the joints may be the option left. We will talk through what each involves and decide together what suits your foot and your goals.

What to expect

A cavus foot is a long-standing shape, not a short illness. It does not come and go. Without care, the arch tends to stay high or slowly get higher, and the heel tends to stiffen in its tipped position. The problems you feel now, such as pain under the ball of your foot, ankle sprains, and clawing toes, usually continue or build gradually rather than settle on their own.

Non-operative care can genuinely change that course. Stretching, strengthening, shoe changes, and inserts ease pressure and improve how your foot works. In children with a nerve-related foot, these measures can hold off surgery for years, and in about half of children followed to the end of growth surgery is avoided altogether. Where surgery is eventually needed, it has typically been delayed by around 4.5 years. That said, this foot shape does not usually disappear. The aim of good management is a foot that is comfortable, steady, and able to do what you need it to do, for as long as possible.

When surgery is the right step, the outlook depends on how flexible your foot still is and how severe the change has become. Joint-sparing operations are preferred whenever possible, and they suit most flexible feet, including feet affected by Charcot-Marie-Tooth disease. These procedures aim to bring the arch down while keeping your joints moving. For severe, rigid feet, or feet with worn joints, fusing some joints may be needed, and this is generally kept as a last option. Most people who have correction of a severe foot shape are able to return to work and report a better quality of life afterwards.

Some honest limits are worth knowing. Surgery does not give you a normal foot. Correction aims to spread your weight more evenly, steady your ankle, and make shoes easier to wear. Some procedures improve walking distance, activity, and footwear use well, but have less effect on pain. And because the underlying nerve or muscle condition often continues, the foot shape can change again over the years, so ongoing review matters.

When to see someone

See your GP if you notice a high arch that is getting higher, calluses that keep coming back under the ball of your foot or along the outer edge, toes that are starting to curl or claw, or ankle sprains that repeat. Ask for a specialist review if the front of your ankle aches when you walk or climb stairs, if your ankle keeps giving way on uneven ground, or if your foot is stiffening and shoes are getting harder to fit. Because this foot shape is often a sign of a nerve or muscle condition, mention any family history of similar feet, weakness in your legs, or loss of feeling in your feet. Go to an emergency department if you develop sudden weakness, numbness, or loss of bladder or bowel control, as these can point to a spinal cord problem needing same-day assessment.