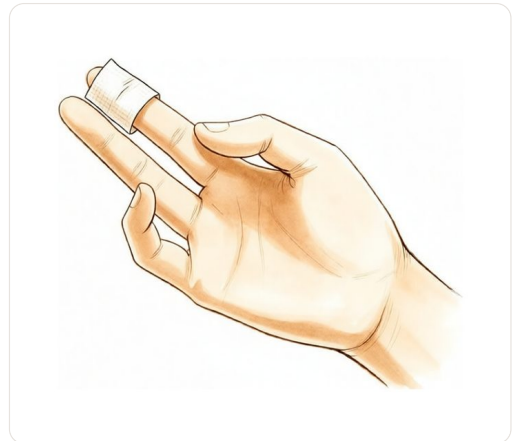


Fingertip Injuries

Mallet finger — the fingertip droops because the extensor tendon at the end of the finger has torn or pulled off a small bone fragment.

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What you're feeling

You may notice sharp pain right at the tip of your finger, especially if the injury involves the nail bed or the soft pad underneath. This area is packed with nerve endings, so even minor cuts or crushes can feel surprisingly intense. The pain often throbs or pulses, making it hard to ignore. You might find that keeping your hand still helps, but moving the finger or bumping it against objects sends a fresh wave of discomfort.

If there is any bone loss or significant tissue damage, you might feel a deep ache that lingers. Daily tasks become difficult quickly. Simple actions like typing on a keyboard, buttoning a shirt, or holding a coffee cup can be painful or impossible if your grip is compromised. You may also notice swelling around the tip, which adds to the pressure and stiffness.

In some cases, you might see a deformity where the nail grows in an unusual shape, such as curving inward like a hook. This can happen if the underlying bone has shortened or if the nail bed was not aligned correctly during healing. You might also experience reduced sensation or tingling, which affects your ability to feel textures or temperature accurately.

If a glomus tumour is present, you may feel sudden, severe pain triggered by cold temperatures or light touch. This pain can be disproportionate to the size of the lump and may keep you awake at night. You might also notice a small, tender spot under the nail that hurts when pressed.

Recovery involves managing these symptoms while the tissue heals. We aim to restore both function and appearance, ensuring you can return to normal activities with minimal pain. Most patients find that with proper care, the acute pain subsides within a few weeks, allowing you to regain full use of your finger.

What's actually happening

Your fingertip is a complex structure designed for precision and sensation. It contains bone, nerves, blood vessels, and the nail matrix, which is the root that grows your nail. The matrix sits just under the skin fold at the

base of your nail. When you suffer an amputation or severe crush injury, you lose more than just skin. You may expose the bone or damage the delicate tissue that produces your nail plate.

This damage disrupts the natural healing process. Without the protective nail matrix, the new nail may grow in deformed or not at all. The exposed bone and nerves are highly sensitive, causing significant pain and increasing the risk of infection. However, the incidence of infection in these injuries is low, at just 2.5%. Your surgeon aims to restore both function and appearance. The goal is to minimise pain, optimise healing, and preserve the length and sensation of your finger.

There is no single standard way to treat every fingertip injury. Options range from simple dressings to complex surgical reconstruction. In many cases, conservative treatment without surgery is successful, even if bone is exposed. If surgery is needed, techniques vary. Some methods use flaps of your own skin to cover the defect immediately. Others use grafts or special matrices to rebuild the nail bed.

Your surgeon selects the approach based on the specific damage. For example, some flap techniques provide immediate closure but may lead to stiffness. Others, like the thenar flap, can restore length and prevent nail deformity. The choice depends on whether you need to prioritise sensation, motion, or cosmetic appearance. The aim is always to give you a functional fingertip that feels normal and looks natural.

What we can do about it

Dr Kieran Hirpara, an upper-limb 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. A clinic assessment establishes the diagnosis. For acute injuries, we often begin with conservative care. You can treat many fingertip amputations without surgery. The infection rate is low at 2.5%. We do not routinely prescribe preventive antibiotics because the risk is small. You can use noncontact low-frequency ultrasound to speed healing. This treatment works nine times faster than local wound care alone. Physiotherapy helps restore movement and strength as the tissue heals.

We manage pain with standard medications. If you have a nail bed injury, we may use an artificial nail as a splint to protect the repair. This supports joint movement and prevents infection. Studies show no recurrent infection after 18 months with this method. For structural damage or severe loss, we consider surgical options. We aim to preserve length, sensation, and appearance. We use various flap techniques to cover exposed bone or soft tissue. These procedures restore function and look natural. We choose the method that best fits your specific injury and age.

Surgery is considered when conservative care is not enough or when the injury is severe. We may perform a flap reconstruction to cover the defect. This restores the fingertip shape and function. In some cases, we may recommend revision amputation to smooth the tip. This can restore almost normal sensation and motion. You can expect to return to work on average approximately 7 weeks after this procedure. We discuss all options with you to ensure the best outcome for your hand.

What to expect

Your fingertip injury will heal differently depending on the severity and the treatment chosen. For many minor injuries, conservative care without surgery is successful, even if bone is exposed. If you choose non-surgical management, healing can be significantly accelerated using noncontact low-frequency ultrasound. This approach results in healing times that are nine times faster than local wound care alone.

If surgical repair is needed, the goal is to restore both function and appearance. Techniques such as flaps or grafts can effectively repair partial digit defects involving the nail bed and soft tissue. In cases with bony loss, specific flap techniques provide additional length and bone support to prevent a shortened fingertip and avoid deformities like a hook nail. Primary flap reconstruction is often the initial choice for older patients to optimise range of motion. For cutting injuries in non-smokers, composite grafting performed within five hours of injury yields excellent outcomes.

The risk of infection after distal fingertip amputation or crush injury is low at 2.5%. There is no meaningful difference in infection rates between groups, which questions the necessity of prophylactic antibiotic prescribing after these injuries. If revision amputation is required, you can expect almost normal sensibility and satisfactory motion. Patients typically return to work on average approximately 7 weeks after this procedure.

With appropriate treatment, most patients achieve a satisfying fingertip. Simultaneous reconstruction of dorsal and palmar injuries restores a functional and aesthetically pleasing result. Even with revision amputation, sensory recovery is strong. You can expect to regain movement in your joints, with studies showing recovery of 80 degrees MCP joint flexion, 85 degrees PIP joint flexion, and 30 degrees DIP joint flexion when using specific splinting methods. Long-term follow-up shows no evidence of recurrent infection after 18 months in these cases.

When to see someone

See your GP if you have persistent pain that does not improve with rest. Ask for a specialist review if you notice weakness or instability in the finger. Seek help if the joint locks or gives way. You should also seek care if symptoms interfere with your sleep or work. Sudden worsening of pain or swelling requires prompt attention. Early assessment helps protect sensation and length. Your surgeon can discuss options ranging from conservative care to reconstruction. Most fingertip injuries heal well when managed appropriately.

In more depth

This section goes further than you need for your own treatment decisions. Fingertip injuries are worth the extra reading because the treatment with the best combination of outcomes is the one that involves no operation at all – a finding that runs against the instinct to close a wound.

LETTING IT HEAL OPEN OUTPERFORMS CLOSING IT

When a fingertip is amputated, the reconstructive options are a flap, a graft, or dressings and time – allowing the wound to close by secondary intention, from the edges inwards.

Reviewing **1,592** cases of secondary healing, conservative wound management with dressings and protective splints allows patients to **avoid immobilisation and donor site morbidity**, achieves **near-normal sensibility and minimal cold intolerance**, and enables **early return to work** [1].

Four separate advantages, and each addresses a specific cost of the surgical alternatives. A flap requires taking tissue from somewhere else, which creates a second wound and often needs the finger immobilised while it heals. Flap tissue brings its own nerve supply, which is not the fingertip's, so sensation is different in quality. Cold intolerance – an underappreciated long-term complaint after fingertip injury – is reported as minimal with secondary healing.

The fingertip has a remarkable capacity to regenerate its own contour and sensation when given the conditions to do so, particularly where bone is not exposed. The main costs of the conservative route are the time involved and the dressing changes, which is a real burden but a temporary one.

WHERE A GRAFT IS USED, AGE PREDICTS SURVIVAL

Composite grafting – replacing the amputated part as a graft without reconnecting blood vessels – is described as feasible and effective for restoring an aesthetically functional digit across **720** patients, with the graft surviving in the majority and a **more significant survival pattern among younger populations** [2].

That age effect is worth knowing before the decision is made, because a composite graft that fails leaves a wound that then has to heal by the conservative route anyway, having lost time.

REPLANTATION: WHAT IT CAN AND CANNOT RESTORE

Where a whole digit is amputated, replantation reconnects the vessels. The honest summary of its results across **619** patients is that **digit replant does not restore premorbid hand function, but does result in adequate hand function** – and that this expectation should form part of the decision-making [3].

The survival factors are also better defined than commonly assumed. Across **2,641** replantations, **gender and ischaemia time had no significant influence** on survival, while **age, which hand, injury type, zone, and the method used to preserve the amputated part** all did [4].

Ischaemia time not reaching significance is the surprising one, given the urgency that surrounds these injuries. It should not be read as time being unimportant – it likely reflects that appropriately preserved digits tolerate longer delays than expected, which is precisely why the preservation method mattered. The practical instruction that follows: wrap the amputated part in damp gauze, seal it in a bag, and place that on ice – never the part directly on ice.

THE NAIL BED IS THE PART THAT DETERMINES APPEARANCE

Much of the long-term appearance of a fingertip injury is decided by the nail bed beneath the nail plate. A nail bed laceration repaired accurately usually produces a normal nail; one left unrepaired, or healed over a

fragment of bone that has shifted, produces a split, ridged or hooked nail permanently. This is why an apparently minor injury with a nail bed component is treated with more care than its size suggests.

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