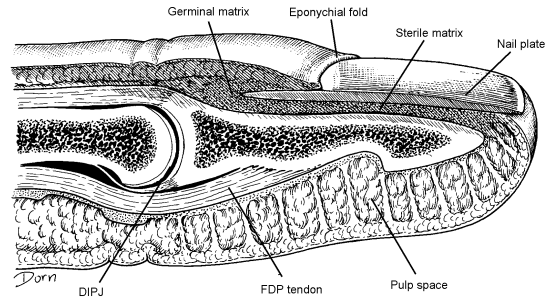


FINGER-TIP INJURIES

Injuries to and amputations of fingers are amongst the commoner causes of attendances to Accident Departments. Although deemed trivial, they are painful, they cause considerable inconvenience and they can result in long-term dysfunction. In children, they usually relatively minor and follow the finger being trapped in a door. In adults, the causes are more varied and the injuries more severe because machinery is often involved. The tissues injured can include skin, nail-bed, bone, joint, tendon and nerve. A perfect recovery of appearance and function may not be possible.

The finger-tips are highly specialised to allow the performance of a wide variety of power and fiddly tasks as well as being cosmetically important. The skin is designed to grip well and it is extremely sensitive. The tips are tough and well padded to protect the underlying bone from hard surfaces. The nails are protective and allow fine pick-up. Loss or damage to the fingers can cause deformity, pain and loss of the function of the finger causing it to be excluded from use and sight.



Because of the importance of fingers for function and their complexity, the treatment of finger-tip injuries can be difficult. You should not be surprised or worried if your surgeon(s) suggest that there is not a single, simple way of treating the injury.

Choices may have to be made and these will be discussed with you. Although we aim to preserve the length and appearance of the finger, this can involve complex surgery, lengthy recovery, complications and be at the cost of function. It is sometimes better to choose a simpler and faster option that enables a rapid return to work.

Preserve length Complex operation Slower recovery More complications	Shorten finger Simple operation Rapid recovery Fewer complications
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There are a variety of techniques available for treating these injuries that may be combined. I describe these terms and operations below: -

Cleansing & debridement Wounds are washed out with saline and both dead tissue and dirt removed.

Primary healing Simple cuts can be stitched together.

Secondary healing Areas of skin loss are often allowed to heal by themselves as long as the underlying bone or tendon are not exposed. This can require regular dressings over a period of weeks. The end results are often surprisingly good with small scars and proper finger skin. There can, however, be some alteration in shape and loss of padding.

Skin graft Large areas of skin loss, particularly on the less specialised back of the finger, can be reconstructed by transfer of a comparable area of skin. Grafts are taken usually from the forearm or upper arm where stitches may be required.

Skin flap Areas of skin loss causing exposure of underlying bone, joint or tendon can only be reconstructed by placing living skin over the "primary" defect. This involves moving skin, still connected to its blood supply, forwards or sideways on the same finger. The resultant secondary defect may be allowed to heal or skin-grafted. An alternative is taking the skin from a neighbouring finger. This requires the two fingers to be joined together for two weeks and then separated with a second operation once the flap has healed.

Terminalisation When the injury is severe, the nail-bed damaged and bones exposed the best option is usually to shorten the finger sufficiently to allow the available skin to be closed over the bone.

Rehabilitation is important, whatever operation is performed. We try to keep dressings light and expose wounds as soon as possible to allow movement and washing. It is important to move the rest of your hand joints through their full range (including the others on the same finger) to prevent stiffness. Later, massage is useful to break down scarring and to desensitise the finger(s).



FINGER-TIP INJURIES



Complications are unfortunately common and there is an approximate 20% rate of secondary surgery after amputations to correct problems.

Wound Possible problems include swelling, bruising, bleeding and blood collection under the wound (haematoma)

Infection A reasonably common problem in the early stages due to damaged tissues and contamination at the time of injury.

Wound breakdown This can occur due to infection, over-tight closure, death of skin causing exposure of the structures like bone or tendon (fig h). Revision is required.

Tenderness Common after any wound or fracture but specific additional longer-term reasons include loss of soft-tissue padding (fig a), nerve scarring and nail problems.

Scar The finger-tip will be firm to touch and tender for some months. This can be helped by firm massage with the moisturizing cream.

Deformity Some change in shape and scarring due to loss of skin, nail and bone. It is inevitable after all but the most minor injuries (fig b).

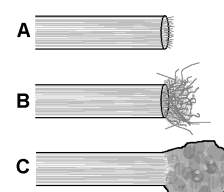
Dysfunction Mainly due to loss of length and sensation, tenderness and other issues such as altered skin quality due to skin-grafting (fig c).

Stiffness May result from direct damage to joints and tendons but more often is due to adhesions forming whilst the finger(s) is swollen, dressed and not moving. It can affect more than just the injured finger and is prevented by hand elevation and exercises.

Nail Damage to the germinal matrix (see diagram) causes loss of or distorted growth of the nail. Damage to the nail-fold and/or the sterile matrix causes a change in appearance of the nail. Problems include nail-spikes, split nails, later infections and discomfort. This may require removal of part or all of the nail remnant (fig d-g).

Inclusion cysts Small fragments of skin can be driven into the wound at the time of injury. Later, they cause a swelling due to the normal shedding of cells and skin oil (fig i). They are simple to remove.

Neuroma When a nerve is cut, it tries to repair itself. The fibres grow from the cut end and collect as a swelling that is called a neuroma (fig). If the nerve ending is superficial and/ or some of the nerve fibres grow into scar tissue, the area can be very tender. This may require shortening and separation of the nerve ending away from the tip of the finger.



Sensory change Touch sensation is often reduced or altered, being described as “numb”, “pins&needles”, “funny”, “nasty” after all but simple injuries. Skin grafts and flaps never feel normal and this is permanent and irreversible.

Cold intolerance An exaggerated or abnormal reaction of the finger to cold exposure causing discomfort, stiffness, altered sensibility and colour change, which may appear in isolation or in any combination. This is very common, permanent and irreversible.

Regional pain syndrome About 5% (1 in 20) of people are sensitive to hand surgery and their hand may become swollen, painful and stiff after the operation. This problem cannot be predicted, is variable in severity and is principally treated with physiotherapy.