SURGERY

Open Reduction and Internal Fixation of Hand Fractures
(ORIF, plates and screws)

What does this involve?

This involves fixing a broken bone back together using screws and sometimes plates as well. The metal components rest snugly on the bone and are buried under the skin so you can only see them on an xray.

When is surgery needed?

Most hand fractures heal up well by themselves given time and appropriate support and exercises.

If the bones are very badly out of position after a fracture the finger may not work so well if the bones are left to heal where they are. This is particularly true if the fracture involves the smooth gliding surface of a joint. Plate and screw fixation of the bones is one option that may be considered in such circumstances.

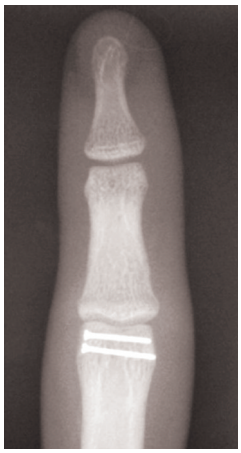
Which operation is the right one for me?

Other options for displaced fractures in the hand are:

- 'Manipulation under anaesthesia' (MUA). This involves moving the broken bones about by pulling on the finger to try and realign them. The new position might be supported with tape between the fingers or a splint.
- K wire fixation. If a simple manipulation is not enough an improved position might be maintaining by 'pinning' the bone fragments using small, sharp wires passed through the skin into the bone under x-ray control. A plaster or splint is also necessary after this sort of operation.
- External fixation. This involves pins into the bones connected together outside the finger. The connection pulls on the bony fragments to keep them lined up but the pins are carefully placed to allow joint movement. This is particularly useful in fractures involving the proximal interphalangeal joint of the fingers which get stiff very quickly after they have been injured.

Your surgeon will discuss the options with you.

Xray of finger after screw fixation



Xray of a hand after plate and screw fixation

Type of Operation	Day case
Length of Procedure	0.5 – 1.5 hours (depending on complexity of injury)
Anaesthesia	Local Anaesthetic (finger numb) Regional Anaesthetic (whole arm numb) or (rarely) General Anaesthetic (asleep)

Sussex Hand Surgery

SURGERY

Open Reduction and Internal Fixation of Hand Fractures

What are the main risks of this operation?

Swelling, Stiffness and Scar pain

This can be reduced by keeping the arm elevated and moving all the free joints as soon as possible. In most people the general swelling reduces dramatically in the first week after the operation.

Local swelling around the surgical site can persist for several months. Local swelling can be helped by massaging the tissues and this may also improve any irritability in the surgical scar.

The fingers are complex structures with many layers of tissue that normally glide smoothly over each other during motion. These smooth gliding layers can become stuck down after an injury and an operation. This will make the finger stiff and poorly mobile. Early exercises to regain normal gliding between the tissue layers is important.

Occasionally patients are troubled by more swelling and stiffness than average. In this case complex regional pain syndrome (CRPS) is sometimes the cause (see relevant information sheet in 'Conditions we Treat'). Severe CRPS occurs in less than 1% of cases.

Infection

This is unusual in the hand (less than 1% of cases). Local wound infections can often be treated with oral antibiotics. Rare, deep seated infections may require re-admission to hospital, antibiotics into the vein and occasionally more surgery.

Nerve Damage

The nerves most at risk with these operations are the small skin branches supplying sensation around the scar. The lost patch of skin sensation from these injuries might be irritating but should not affect how your hand works.

Metalwork problems

Although the plates and screws used for this surgery are very small they can irritate the soft tissues of the finger and sometimes have to be removed after the bone has healed.

Metalwork can also work its way loose over time or break. This usually on happens if the bone has not healed up properly. Further surgery might be required in these circumstances.

Loss of bony position

Plate and screw fixation generally gives strong fixation of the bony fragments but if the fractured bone fragments are small or the bone is weak the position of the fragments may move after the operation. Sometimes this may require further surgery.

Failure of Bone Healing

This is a rare complication for most hand fractures but does occasionally occur. If the bones do not heal up securely further surgery may be required.

Post Operative Course

Day 1

- A dressing and padded bandage, sometimes with a splint or plaster cast incorporated is applied after the operation
- Keep the dressings clean and dry
- Keep the arm elevated in a sling or on pillows to reduce swelling
- Start moving any free joints immediately to prevent stiffness
- Take painkillers before the anaesthetic wears off and as necessary thereafter

Day 5 - 10

- An appointment will be made for you to see the Hand Therapy team who will help with your rehabilitation.

6 Weeks

- An appointment will be made for you to see your surgeon to review your progress around this time.
- An xray will often be taken at this clinic visit.

Plaster Cast Information

Contact your surgical centre if:

- Your fingers become blue, swollen or numb and tingling with a plaster cast in place
- You see any discharge, wetness or detect any unpleasant smells from around your cast
- The cast becomes cracked, soft, loose or uncomfortable.

Outside normal working hours you may need to attend your local Accident and Emergency Department for help with these issues.

Driving

You may drive when you feel confident to control the car, even in an emergency.

It might be six weeks before you feel able to consider driving again but some patients and fracture types will recover more quickly than this. Your surgeon can advise you on your individual case.

You should discuss it with your insurer if you are considering driving with a splint in place.

Time off Work

This will vary depending on the nature of your job and the exact nature of your surgery.

Sick notes can be provided on the day of your operation, at your clinic visits and by your own GP.