

Digital nerve repair

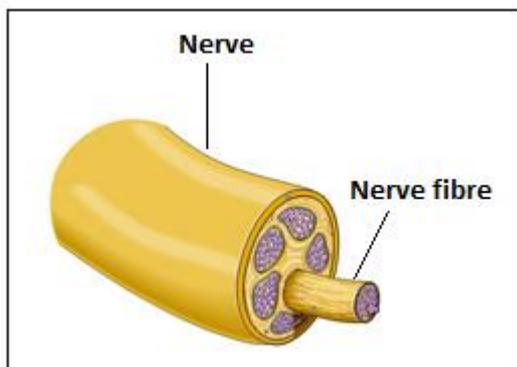
This sheet answers common questions about a digital nerve repair. If you would like further information, or have any particular worries, please do not hesitate to ask your nurse or doctor.

In all cases, a doctor will explain the operation to you and answer any questions you may have.

In most cases it will be possible for a friend or relative to accompany you for all or part of the operation. Please ask your nurse or doctor.

What is a digital nerve?

A nerve is a tube that is responsible for carrying signals to and from the brain. Inside the nerve are lots of nerve fibres. Signals are carried along the nerve fibres and can cause muscles to move or allow you to feel touch, temperature and pain.



Digital nerves are nerves that travel from the palm to the tips of the fingers and thumb. Each finger and thumb has two digital nerves. The nerve fibres in digital nerves carry signals that allow your fingers and thumb to feel touch, temperature and pain. They are, therefore, very important in allowing you to use your hand normally. The digital nerves lie very near to the skin and can be easily injured when the finger or thumb is cut.

What happens when a digital nerve is injured?

Because signals can no longer travel along the digital nerve, the main change you will notice is numbness or pins and needles on the side of the finger or thumb where the nerve has been injured.

Nerves can stop carrying signals for a number of reasons. When you have cut your finger/thumb the underlying digital nerve can also be cut which stops any signals being carried along the nerve. Sometimes, however, a cut to the skin of the finger/thumb may just bruise the underlying digital nerve. In this form of injury, the nerve function normally fully recovers.

In cases when the nerve fibres have been cut, the nerve can only recover by re-growing across the gap and all the way along to the tip of the finger/thumb. Recovery from this type of injury is more unpredictable.

When you are first seen after the injury, it can be difficult to tell if the nerve has been cut or is just bruised. Therefore, in cases when you have some numbness or pins and needles at the tip of the finger/thumb, your surgeon will recommend an operation to look inside the wound. If the digital nerve has been cut, this can usually be repaired during the same operation.

How is a digital nerve repair performed?

The operation can be performed with you either asleep (general anaesthetic) or awake (local anaesthetic). When the operation is performed with you awake, the surgeon will inject some local anaesthetic at the base of your injured finger/thumb. This is often described as feeling like a bee-sting. After one to two minutes the entire injured finger/thumb will be numb to pain.

In the operation, the surgeon will look inside the cut on your finger/thumb. This may involve making the cut on your hand bigger to allow the surgeon to find the ends of the nerve. If the nerve is cut, the surgeon will stitch the two ends back together again. You will not be able to see these stitches and they do not need to be removed after the operation. The skin cut will then be stitched together and a bandage dressing placed around your finger/hand. Occasionally the surgeon may put a plaster of Paris splint on your hand to stop the repaired nerve from being pulled apart again by finger movements.

Before your procedure

When you are seen in our trauma clinic, you will be given written information on when and where to come for your operation. The surgeon will advise you on whether you will need to avoid food and drink for six hours before the surgery. This depends on whether your operation will be performed under local anaesthetic (with you awake) or general anaesthetic (with you asleep).

After your procedure

You are able to go home on the same day of your operation. After a general anaesthetic, you will need someone to take you home. After a regional anaesthetic (arm asleep), you must not drive yourself home, as your hand cannot grip the steering wheel and your insurance company will not cover you, but you can use public transport to travel home.

When at home

You will be provided with some painkillers to take home and it is important that you finish the course of antibiotics that were given to you when you first had the injury. When at home, keep the arm elevated above the level of your heart for the next week to reduce swelling and pain. When washing or showering, keep the dressing dry by covering the affected hand with a plastic bag taped around the wrist.

Follow-up

After three to five days, you will have an appointment to see the hand therapists who will check the skin wound is healing ok and change your dressings. They will then arrange to see you to

monitor the wound healing and the nerve recovery over the following weeks. If the stitches in the skin are the non-dissolving type, these will be removed two weeks after the operation.

The nerve fibres take approximately one month before they begin to grow across the gap. After this, they will then grow at a rate of 1mm per day towards the tip of the finger/thumb. Therefore, the nearer the tip of your finger/thumb the cut is, the sooner you should notice some return of normal feeling in the fingertip.

Using the hand

Straight after your operation it is important to continue moving the arm and the rest of the hand to prevent any of the joints becoming stiff. Unless your surgeon or hand therapist tell you otherwise, you should aim to complete the following exercises 10 times, once per hour:

- Lift your arm above your head to stop the shoulder becoming stiff.
- Fully bend and straighten your elbow.
- Move your wrist in all directions.
- Fully straighten the thumb and then touch the little finger with the tip of your thumb.
- Make a full fist and then completely straighten the fingers.

Main risks and side effects

Pain

Injuries and operations on the hand can be painful. The local anaesthetic injected at the time of the operation should keep you pain free for four to six hours after the operation. After this make sure you keep your arm elevated and take the painkillers provided.

Bleeding

A small amount of bleeding into the dressing after the operation is normal. In these circumstances, elevate the hand above heart level. Although uncommon, if bleeding persists and the dressing becomes soaked with blood, please return to the Royal Free Hospital's A&E department and inform the staff that you are a patient of the plastic surgery team and we will come to help you.

Infection

At the time of injury, dirt and bugs can get into the cut, which can cause an infection. It is important that the wound is cleaned properly and that you finish the course of the antibiotics we give you to avoid this. The risk of infection is approximately 2% when these measures are taken. If, however, you notice increasing pain, an unpleasant odour or yellow/green fluid coming through the dressing, you may still have developed an infection. Please contact the plastic dressing clinic to be seen as soon as possible if this happens.

Wound breakdown

The wound can open again after the operation and we may treat this with dressings or, very occasionally, we may need to operate again.

Failure of nerve recovery

The nerve fibres may not re-grow across the cut in the nerve. There is an increased risk of this after childhood. In these circumstances, you will find that the feeling at the tip of your finger does not return to normal. To minimise the risk of this occurring, it is important to follow the instructions given to you by the surgeon and hand therapists and to not smoke or use nicotine replacement therapies during the healing period.

Neuroma

Where the nerve is cut the fibres that can't find their way across the cut in the nerve can sprout out and form a bundle of unconnected nerve ends. This is called a neuroma. These endings are still connected to the end of the nerve traveling towards the brain and this means that a neuroma can produce a lot of unpleasant sensations if it is knocked or tapped. A painful neuroma may develop in approximately 5% of cases and this may require a further operation.

Cold intolerance

The affected finger/hand may become painfully cold in the winter months. This may settle with time and is best avoided by wearing appropriate clothing to keep the hands warm.

Complex regional pain syndrome

Around 5% of patients may experience complex regional pain syndrome of the affected finger or the whole hand after the injury. This is an unusual reaction to trauma and results in pain, swelling, stiffness and increased sensitivity in the hand and must be treated with special medication and intense therapy.

Do you have any further questions?

If you have any further questions or concerns regarding your injury or operation, you can contact our hand trauma clinic on 0207 794 0500 x 31312.

Other useful contacts:

Day surgery – 0207 794 0500 x 38586

Hand therapy – 0207 317 7703

Plastic surgery dressing clinic – 0207 794 0500 x 31312

If you would like a large print or audio version of this information, please ask a member of staff.

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