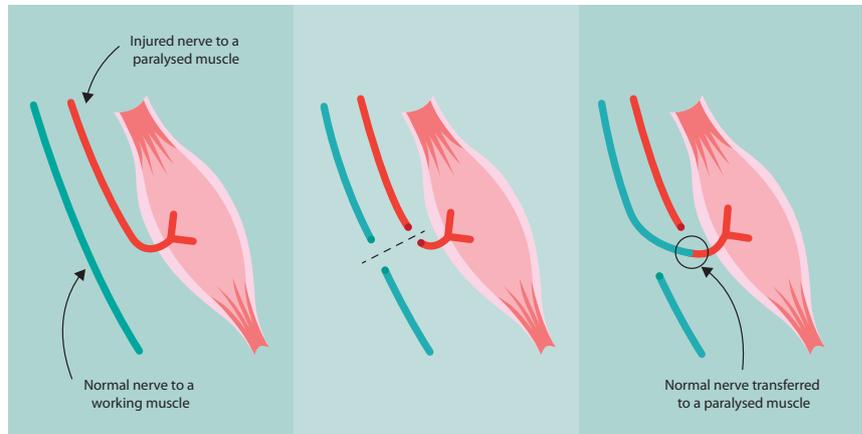


Nerve Transfers Following Cervical Spinal Cord Injury

Information Sheet

What is a nerve transfer?

A nerve transfer is when you take a nerve to a working muscle (donor nerve), cut it, and use it to re-animate a nerve that supplies a paralysed muscle (recipient nerve).



Who can have the surgery?

To be suitable for nerve transfer surgery, you need to have one or more suitable donor nerves. You are likely to have suitable donors if you have a C5 – C7 complete or incomplete spinal cord injury. This level of injury means that pre-surgery you have movement in your shoulder muscles, you can bend your elbow up to your mouth and you can possibly extend your wrist upwards.

If you do not have all these functions, you may still be a candidate for surgery but you will need further assessment. Ideally, you should be within 12 months of injury and in good health. Depending on the pattern of injury to the nerves it may be possible to do nerve transfers many years after injury, but you will require testing to confirm that you are a candidate. You should be motivated to do a home exercise program and have family or carers available to assist you with it.

What movements will I be able to do?

Movements that can be restored include:

- straightening your elbow to reach (elbow extension)
- pulling your wrist up (wrist extension)
- opening your hand to place it around an object (finger and thumb extension)
- closing your fingers around an object to allow you to grip or hold it (finger flexion)
- closing your thumb against your index finger to pinch (thumb flexion).

The success of surgery will depend on your injury level, the type and extent of nerve damage, the time since injury, the flexibility of your joints, your health and your participation in exercises/therapy.

Will my hand work like it did before my spinal cord injury?

No, there are not enough donor nerves to power all the paralysed muscles of the hand. However, successful nerve transfers should improve your hand and arm function.

What does the surgery involve?

Surgery occurs under a general anaesthetic and takes two to six hours. Nerve transfers are often combined with tendon transfers to maximise the number of functions that can be restored. The surgeons may recommend that you have one or more tendon transfers combined with your nerve transfers. Most people are in hospital for two to three nights following surgery.

What happens after surgery?

After surgery, you will wear an arm sling and possibly a splint for around 10 days. During this time your elbow, hands and shoulder movement will be restricted. You may need extra attendant care, a power wheelchair and/or a hoist.

In the 3-4 weeks after surgery, you will need to be reviewed by the surgeons and also by the hand therapists, who will manage your post surgery exercises. International patients will need to stay in Melbourne either in the hospital's rehabilitation ward or, in some cases, in wheelchair accessible accommodation nearby for approximately 3-4 weeks after surgery.

You will start returning to your normal function in two to three weeks after surgery. When the wounds are healed you will be given new exercises to complete three to five times a day until the nerve grows into the muscle.

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Once you return home your local therapist may be able to assist with some of the rehabilitation. Telehealth (Skype or Facetime) reviews with the surgeons and therapists will also be organised to keep track of your recovery and progress.

Recovery is slow as nerves take time to grow. Depending on which nerve transfers were performed it is likely to be 4 – 9 months before you see any flickers of new movement in previously paralysed muscles. It will take another 12 months or more for you to reach the maximum strength possible from nerve transfer. Exercises will be adjusted by your occupational therapist as you improve.

You may need further operations in the future to maximise your hand function.

How do I organise an assessment?

Once you have contacted Melbourne TetraHand you will be asked to complete an assessment form to provide details about your spinal cord injury and general health. This assessment form is available on this website. The practice manager will then contact you to make an appointment to meet the surgeons and therapists either in person or, if you are overseas or interstate, via Telehealth.

At your appointment they will assess your current upper limb function, talk with you about your functional goals, answer your questions and discuss what procedures may be best for you. If possible, it is always useful to have your hand therapist or physiotherapist with you for the consultation.

How much does surgery cost?

If you are eligible for health care under the public health care system in Australia (Medicare), you can be placed on the waiting list for surgery at Austin Health and managed through the Austin Health's Upper Limb Program. If you would like to be assessed through Austin Health please contact the Upper Limb Program at upper.limb.program@austin.org.au or by phone on +61 3 9490 7285.

Those not insured for surgery within Australia will need to be self-funded. Once you have been assessed as being suitable for surgery then you will be provided with an estimate for surgery and post surgery rehabilitation.

Where will the surgery take place?

If nerve transfers are appropriate, you will need to attend the Neuroscience Laboratory at Epworth Richmond or Austin Health for nerve conduction studies. These test results assist in planning your surgery. Surgery for private patients is performed at Epworth Richmond Hospital in Richmond. Rehabilitation will take place at Bethesda ward, which is an inpatient rehabilitation ward at Epworth Richmond.

For those having treatment through Austin Health, your surgery will be performed at the Austin Hospital and your rehabilitation will be managed as an outpatient by therapists affiliated with the Royal Talbot Hospital.

Where do I find out more information?

You can get more information by contacting Melbourne TetraHand with your questions. You can also talk to your spinal rehabilitation physician and therapists. Links to articles published by the Melbourne TetraHand team are available on this website as well as links to media coverage of the surgery and patient videos.

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