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# Nerve Injury and Repair

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**DELLON INSTITUTES FOR PERIPHERAL NERVE SURGERY®**

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#### YOUR COMPLAINTS ARE

Loss of sensory or motor function due to an INJURY to a *Peripheral Nerve*.

If the injury occurred in your HAND, then you are numb in one or more fingers, and the scar is probably painful.

If the injury occurred in your ARM, then you are numb and have lost motor function in your wrist and fingers.

If this happens to the MAIN MOTOR NERVE IN YOUR FACE, you have a facial palsy.

If this happens to the nerve at the OUTSIDE OF YOUR KNEE, you have a foot drop and numbness on the top of your foot. (See *Foot Drop* brochure.)

If this happens to the NERVE AT THE SIDE OF YOUR NECK, then you cannot lift your arm over your head.

#### WHAT CAUSES YOUR COMPLAINTS?

Whenever a nerve is divided, it loses its function.

A nerve may be partially divided, losing partial function, and cause burning pain.

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#### TREATMENT WITHOUT SURGERY

If a nerve has been *crushed*, and is not divided, then it may not become replaced by scar tissue. If this is your degree of injury, then the nerve can recover from the crush, and almost normal function may return within three to six weeks.

If a nerve has been *crushed more severely*, and is not divided, it may have varying degrees of scar within it. Sometimes it is so severely disorganized by the injury, that no function recovers, just as if the nerve were completely divided.

*While waiting to learn if function will recover after injury*, parts of the body without sensation must be **PROTECTED** so they are not burned or cut without your knowledge, and parts of the body without motor function must be **SPLINTED** to preserve joint and muscle function.

At present, there is no medical treatment to help a nerve recover from injury, or to help it regenerate sooner, more completely, or faster.

If there is pain related to the nerve injury, traditional narcotic **PAIN MEDICATION**, or non-narcotic neuropathic pain medication is needed.

*If a nerve is completely divided, it will not recover function. Knowing if the nerve is completely divided cannot be determined with certainty without directly looking at the nerve.*

### WHEN SHOULD I HAVE SURGERY?

When it is clear that nerve regeneration is not occurring sufficiently well to restore the desired function, then it is time for nerve reconstruction.

If it is not clear the degree to which function is or will recover after your nerve injury, electrodiagnostic or neurosensory testing should be considered (see the *Neurosensory Testing* brochure for more information).

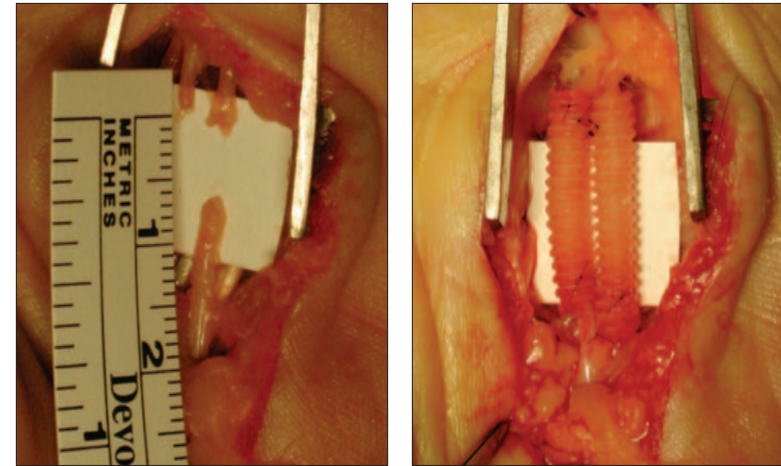
### WHAT IS NERVE RECONSTRUCTION?

During the first part of the surgery, it must be determined if the nerve is still intact, if the nerve still can transmit electricity, and, if not intact, or intact but without the ability to transmit electricity, then how big a length of the damaged nerve must be replaced.

*If any nerve length needs to be reconstructed, it should be replaced, rather than connecting its two damaged ends tightly.*

If the nerve length to be replaced is less than three cm, an absorbable conduit (**Neurotube™**) is used. But if the length is longer, nerve segments (**grafts**) are taken from some other part of your body, either from your arm or from your leg. If a very large length of nerve is needed, nerve from a donor (**nerve transplantation**) is possible, but requires prolonged immunosuppression.

### NEUROTUBE RECONSTRUCTION



LEFT  
Nerves in the palm are damaged and two Neurotubes™ are put in place.

BELOW Full finger movement and excellent functional sensation recovered one year after Neurotube reconstruction of nerve to outside of the little finger.



LEFT  
Injury to the right spinal accessory nerve occurred during a surgical biopsy (at thick line below the ear), causing inability to raise the right arm.

RIGHT  
Neurotube reconstruction.



LEFT  
Before surgery, right arm cannot be lifted.

RIGHT  
Six months after reconstruction, right arm function restored.

**WHAT ARE THE RISKS OF SURGERY?**

The published outcomes of the Dellon-approach to nerve reconstruction offer the best chance for success for recovery of your lost function. There are risks associated with every surgical procedure, such as the risk of anesthesia, bleeding and infection. Complications unique to nerve reconstruction are:

- Unpredictable nature of the healing process (scar formation).
- Pain during the nerve regeneration process.
- Incomplete recovery of motor function.
- Waiting two to three years to learn the full degree of recovery.
- Further surgery to reconstruct sensory or motor function may be required.

**WHO SHOULD DO THIS SURGERY?**

Surgeons from the *Dellon Institutes for Peripheral Nerve Surgery*® have the most advanced training and experience doing this surgery, which offers you the best chance for success.

**BEING ACADEMIC IN PRIVATE PRACTICE<sup>SM</sup>**

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**BROCHURES  
IN THIS SERIES:**

- Carpal Tunnel Syndrome
- Cubital Tunnel Syndrome
- Foot Drop
- Groin Pain
- Heel Pain
- Joint Pain
- Nerve Injury and Repair
- Neuropathy
- Neurosensory Testing With The Pressure-Specified Sensory Device™
- Radial Nerve Entrapments
- Tarsal Tunnels Syndrome
- Thoracic Outlet Syndrome

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