Nerve transfers for spinal cord injury

As part of a comprehensive program to treat patients with acute and chronic spinal cord injuries, Dr. Wilson Ray, Washington University neurosurgeon, offers nerve transfer procedures to provide improved upper extremity and hand function tailored to each patient’s level of initial injury and preserved motor and sensory function.

Nerve transfers involve rerouting, or “transferring,” working nerves above the level of injury (Musculocutaneous nerve – figure right) to restore function in a crucial nerve below the level of injury (Median nerve – hand function). Nerve transfers for spinal cord injury take a nerve connected to the spinal cord above the region of injury and attach it to a working nerve in the arm or hand below the level of injury.

More than 50% of spinal cord injuries occur in the cervical spine — causing tetraplegia, or paralysis in all four limbs — and result in some loss of arm and/or hand function. Persons with tetraplegia are dependent on use of the upper extremities for mobility and activities of daily living including self-catheterization, writing, feeding and other functions. Hand function is consistently rated as the most desired function for persons with tetraplegia, above bowel and bladder function, sexual function, standing and pain control. Recovering even partial arm and hand function can have an enormous impact on independence and quality of life.

Prior to your appointment with Dr. Ray you will need to undergo special testing (EMG/Nerve conduction studies) of the muscles and nerves in the arms and hands to determine which muscles are suitable for reanimation/reinnervation.

These procedures can provide meaningful improvements in patient quality of life and long-term functional independence. Dr. Wilson Ray sees all patients with a history of a cervical spinal cord injury and works with neurologists, hand surgeons, and therapists on an operative plan that is developed for each patient’s unique circumstances.
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