

## **Cervical Spinal Cord Injuries – Treatment Options – by Justin Brown, MD**

Hi. My name is Justin Brown. I'm an associate professor of neurosurgery at the Massachusetts General Hospital and the co-director of the Massachusetts General Paralysis Center.

One of the injuries that we treat and focus on at the Massachusetts General Paralysis Center is cervical spinal cord injury. We work in conjunction with the spinal cord injury specialists at Spaulding Hospital where we have a combined clinic, and we evaluate patients together to determine who would be the best candidate to restoring function in their bodies after a spinal cord injury.

One of the primary focuses is after a cervical spinal cord injury, restoring the ability to grasp and release, use the triceps and arms in a more functional way.

For years, many patients have been told after a cervical spinal cord injury that you need to learn to make do with the function that you have. Sometimes it's just the ability to extend the wrist will cause the fingers to come in and create what's called a tenodesis grasp, while these patients can learn to get along with just this minimal function.

If they have that much, our center is able to restore quite a bit of function, usually active finger extension, active finger flexion, and active triceps function enable them to accomplish many more tasks than this tenodesis alone.

The modalities we have at our center are the traditional tendon transfers that have been done probably for the past 30 years and really offer a lot of options for patients.

But the other category we have is called nerve transfers. This has more recently been applied to spinal cord injury because people didn't believe that this was applicable with this population, previously, but we found that it very much is.

In fact, many patients in which the tendon transfers aren't an option, it turns out that nerve transfers may be an option. We're able to take nerves from above the elbow and reroute them if you will graft down to accomplish individual thumb and finger flexion below the elbow to patients who have higher injuries and are not amenable to tendon transfers.

Frequently, it's both nerve and tendon transfers together which accomplish the very best result for these patients. If you've had an injury of a family member who's had an injury like this, we'd like to look into restoring function.

It would be ideal to see us within the first year of injury, but even if you haven't been able to do that, we frequently have many options available many years out as long as the patients have maintained good range of motion in the therapy in their hands.

In addition to hand function, if a patient has the ability to stand and take steps, albeit, with a walker or significant assistance, we can often apply procedures to reduce spasticity and allow walking and ambulation to become much simpler.

These are simple procedures. One of these is called the selective peripheral neurotomy. In this procedure, we can open up the leg and find a nerve that's causing the most

dysfunctional spasticity. Usually, this causes the toes to curl and the ankle to turn in so the patient almost walks on the side of the foot. But we can cut branches to reduce this and allow the foot to come out. The patient can often walk with a normal gait, walk faster, easier, and with less effort.

So this is among a number of procedures we have to restore function of patients who've suffered a spinal cord injury, and if you're interested in learning more, please call us at our office at 617-643-5687. Thank you very much.