

# ***Protecting Your Arms will keep You Moving***

(Part 2 of a 2 part series)

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Our arms are the keys to our ability to remain as mobile and independent as possible. This is part 2 of a 2 part series on how to prevent injuries in the arms and how to treat them once they do occur. Part 1 covered tendon injuries and focused specifically on tendinitis at the shoulder and elbow. This article will cover nerve injuries and will focus on 2 specific nerve injuries—carpal tunnel syndrome and ulnar nerve injuries at the elbow.

## **Nerve Injuries**

There are several nerve injuries that commonly affect the arms. Two of these are discussed below. Keep in mind that the symptoms of nerve injuries often present with pain (similar to tendinitis) but are generally in a different location and frequently have associated symptoms of numbness and tingling or an electrical or “hot” feeling.

## **Nerve Injury at the Wrist**

The most common nerve injury at the wrist is compression of the *median nerve* in the carpal tunnel (hence the name *Carpal Tunnel Syndrome*). The carpal tunnel is a band of tissue that surrounds the end of the wrist underneath the skin. Through the carpal tunnel run a number of tendons that control the hand and one nerve—the median nerve. It is the median nerve that becomes compressed and causes carpal tunnel syndrome in some individuals.

The symptoms of carpal tunnel syndrome may include pain, numbness and a tingling or electrical feeling in the thumb, index finger, long finger and sometimes the ring finger. Often the symptoms are worse at night. Untreated, prolonged compression of the median nerve can lead to permanent hand weakness and loss of sensation.

## **Nerve Injury at the Elbow**

The ulnar nerve is very vulnerable to injury from pressure at the elbow when it becomes superficial as it passes through a groove called the cubital tunnel. This injury is common in the general population because of the pressure people place on the insides of their elbows when they sit and rest their elbows on armrests. For individuals with disabilities who spend a lot of time seated, particularly in wheelchairs, ulnar nerve injuries can easily occur and may be quite severe.

Symptoms of an ulnar nerve injury are similar to those found in carpal tunnel syndrome except that it is usually the little and ring fingers involved.

## **Medical Treatment for Nerve Compression Injuries**

The medical treatment for both median and ulnar neuropathies as described above is first and foremost to try and relieve pressure on the nerves. The pressure can be direct, such as with resting the elbow on an armrest or wearing a watchband too tight around the wrist, or may be indirect generally involving repetitive movements of the wrist or elbow (e.g., typing, knitting, working with tools, etc.). Activities that produce either direct or indirect pressure on the involved nerve should be avoided.

Using ice on the elbow or wrist can be useful (once again, no more than 20 minutes at a time for 2-3 times each day). A physician may recommend anti-inflammatory medications. Injections of local steroid are sometimes done for carpal tunnel syndrome, but not for cubital tunnel syndrome. Finally, surgical release of the nerve may be the best way to heal the injury—depending on its severity and the response to more conservative measures.

## **Rehabilitation Management of Nerve Compression Injuries**

The rehabilitation management of nerve injuries first and foremost involves protecting vulnerable nerves from further injury. Physical and occupational therapists who treat these injuries are experts in teaching people how to prevent further injury by protecting the vulnerable nerves. Therapists are also experts in providing assistance with pain management as well as recommending appropriate stretching and strengthening exercises.

Although nerve injuries are treated differently than tendon injuries, many of the same principles apply. These include avoiding aggravating activities (i.e., anything that causes pain or other symptoms such as numbness and tingling).

Also similar to tendinitis, the rehabilitation management of nerve injuries may include prescribing splints to reduce pressure and relieve pain. Typically, for carpal tunnel syndrome wrist splints are worn at night. Elbow pads can be worn during the day to minimize direct pressure on the ulnar nerve and to provide a reminder to avoid leaning on the elbow.

Treatment modalities such as ice, heat or electrical stimulation may be used to decrease inflammation and pain. Once pain is reduced, the therapist will generally recommend strengthening exercises.

If symptoms continue despite treatment, surgery may be recommended. After surgery, the treating physician prescribes a specific rehabilitation program that generally includes wearing a splint, pain management techniques, and gentle range of motion exercises. Stretching and strengthening exercises are gradually incorporated into the rehabilitation program as healing progresses.

## **Conclusion**

All of our arms are susceptible to injuries, because of the demands we place on them. For individuals with disabilities, these demands may be unusually high due to compensating for weakness elsewhere. Although not all injuries can be prevented, many can with a little knowledge and forethought. For those unavoidable injuries, an appropriate diagnosis and early treatment can be the key to a complete recovery.

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