

# Carpal Tunnel Syndrome Educational Pamphlet



SOUTH SOUND  
PAIN RELIEF  
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**Relieving Pain and Restoring Health  
Through Manual Methods**

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# Carpal Tunnel Syndrome

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## **Basics of Carpal Tunnel Syndrome (CTS)**

Carpal tunnel syndrome is a type of nerve entrapment syndrome, (also called compressive neuropathy) where the median nerve becomes compressed in the carpal tunnel. There are a large number of nerve entrapment syndromes which can result in continuous or intermittent compression of a particular nerve. These types of syndromes are often classified together with various types of over-use tendinitis/tendinopathy syndromes as well, where enlargement and irritation of the tendons are thought to contribute to nerve compression.

Carpal Tunnel Syndrome and Thoracic Outlet Syndrome (TOS) are the most common of the nerve entrapment syndromes, however TOS is not always just a nerve compression syndrome alone. (More in the thoracic outlet syndrome pamphlet) Other common nerve entrapment syndromes include tarsal tunnel syndrome (foot), cubital tunnel syndrome (elbow), and lateral femoral cutaneous nerve entrapment or meralgia paresthetica. (side of leg) There are many more.

Previously, carpal tunnel syndrome was thought to be primarily an inflammatory condition, so typical treatment approaches included ice, rest, anti-inflammatory medications, and/ or cortisone shots. While there is an inflammatory response initially in the acute phase and during acute flare-ups, it has been known for 25 years that inflammation is not significantly present once the condition passes into the non-acute stage.<sup>1</sup> The primary issue with subacute and particularly chronic CTS is enlargement, weakening, and degeneration of the tendons running through the carpal tunnel. These enlarged tendons lead to compression of the median nerve, as well as adhesions in the connective tissue throughout the carpal tunnel.

## **Carpal Tunnel Syndrome Symptoms**

Symptoms of CTS can include:

- Hand and/or wrist pain with/ or without:
- Numbness and/ or tingling in the thumb, fore finger, middle finger, and/ or the middle half of the ring finger along the median nerve sensory distribution. (palm side thumb, fore finger, middle finger, and middle half of the ring finger, as well as the full tips of the fore finger to half of the tip of the ring finger)
- Weakness of the thenar muscles. (thumb pad in the palm)
- Increased symptoms with use/ overuse
- Sometimes increased symptoms at night

## **Confounding Factors in Carpal Tunnel Syndrome Diagnosis**

Carpal tunnel syndrome regularly overlaps with other conditions that affect the elbow, shoulder, and neck. As mentioned above, CTS only affects the median nerve in the carpal tunnel. Therefore symptoms that involve the whole hand and/ or are at/ or extend above the elbow and even into the neck are not CTS. Some of the more common conditions that overlap or can be confused with CTS include pronator teres syndrome, thoracic outlet syndrome, cervical (neck) nerve root compression, and/ or cervical spinal cord compression.

## **Risks of Some of the Current Standards of Care**

As noted in the introduction, some of the current standard approaches to care for carpal tunnel syndrome are not in sync with what the research tells us about the nature and cause of carpal tunnel syndrome. With that, there are risks associated with some of these currently accepted standards of care for CTS. These risks are generally low, but can either prolong care or worsen the condition over time. These risks include:

- **Splinting** - Except perhaps in the acute phase, continuous splinting for CTS will likely worsen the condition in the long run. It can contribute to the shortening of the associated muscles and connective tissue, worsening of connective tissue adhesions, and progressive weakening of the wrist flexors and the associated tendons. However, if aggravating activities are unavoidable, such as work, splinting during the activity only may provide positive therapeutic support. Night splinting also is likely effective for maintaining a non-flexed/ shortened position of the wrist while sleeping.
- **Anti-inflammatory medications (over-the-counter or prescription)** - Given the inflammatory response is only present in the acute phase of CTS, prolonged anti-inflammatory medication use has little clinical rationale in the treatment of CTS. The risks of long-term anti-inflammatory use (NSAID class of drugs) are well documented throughout the literature, which can include: <sup>2-4</sup>
  - 3,000-16,000 attributable deaths/year
  - Gastrointestinal and cardiovascular risks
  - Renal risks

The probability of such complications arising is dependant the dosage of medication, the length of time taking the medication, and the patient's general health.

- **Corticosteroid injections** - Corticosteroid injections can be helpful in the management of carpal tunnel syndrome, however the research shows little support for repeat injections.<sup>5</sup> In particular, repeat injections in the same region over a period of time are known to cause weakening of the connective tissue, weakening of the ligaments and tendons, thinning of the joint cartilage, and increased risk of secondary joint infection.

## **Best Practices for the Treatment of Carpal Tunnel Syndrome**

Given what the evidence tells us about carpal tunnel syndrome and other compressive neuropathies, the following treatment options hold the strongest clinical rationale. Generally speaking, treatments should begin with conservative, non-invasive treatments first, progressing up to invasive surgical treatments if needed.

Treatment options can include:

- Self administered care, such as stretching, over-the-counter pain medications, relative rest, (staying away from activities that generate/ aggravate the pain) appropriate exercise, ice and/or heat, work/ night splinting if necessary.
- Physical medicine procedures, such as: manual and instrument assisted soft tissue and myofascial release,<sup>6</sup> stretching and appropriate exercise instruction, as well as a variety of other conservative interventions.

- Medical care with prescription drugs (e.g. anti-inflammatory medications, acute phase), corticosteroid injection.
- Surgery

The best treatment plan may involve several of the above choices to achieve the best results.

### **On Carpal Tunnel Surgery**

When conservative measures fail to manage or cure CTS, surgery can be very successful in relieving symptoms and restoring normal function. The primary goal during the surgery is to separate the adhered connective tissues with a blunt instrument, remove a portion of the thickened transverse carpal ligament, and debride any other thickened tissues possible. Post-surgical outcomes generally show good symptomatic relief over time, (90% at 18 months recovery) with modest functional improvements over time. (patient perceive functional use of their hands over time) <sup>5</sup>

### **Treatment Approach at South Sound Pain Relief Clinic**

At SSPRC, accurate diagnosis of the condition is the first and most important issue to address. Many times patients present to our clinic with an impression or diagnosis of carpal tunnel syndrome, when they have symptoms that are clearly not related to the carpal tunnel. Therefore, an examination from the wrist through the cervical spine is conducted to be certain which region or regions specifically are causing the condition and need to be treated.

Once an accurate diagnosis of CTS is confirmed, we use a spectrum of conservative physical medicine procedures for treatment. Graston Technique, (GT) a form of instrument assisted soft tissue manipulation, is one of the primary treatment modalities we use. This is coupled with a variety of other manual (hands-on) deep tissue release techniques, work place ergonomic recommendations, development of a home care stretching and exercise regimen, and other interventions as may be needed for individual cases. We also often work in conjunction with other providers who are co-treating particular patients.

### **The Goal of Our Treatment Protocol is to:**

- Isolate CTS symptoms and rule out other similar conditions
- Alleviate pain, numbness, tingling, and other symptoms
- Improve tissue and joint mobility
- Decrease muscle hypertonicity
- Reduce muscle spasm
- Restore optimal joint function

### **What Should I Do After Being Treated?**

- Remain active. Use hands normally, unless symptoms flare.
- Try to use your full range of motion
- Although you feel better, you may not be fully recovered. Do not jump into strenuous activities too early.
- Do your home exercises and stretches as recommended.

### **The Risks Attendant to Remaining Untreated:**

Remaining untreated, particularly without changing specific activities that worsen the CTS symptoms, will likely lead to progressive worsening of the condition over time. As the CTS worsens, it becomes more complex and more difficult to treat conservatively, leading to more symptomatic and functional problems. (increased pain, numbness, tingling, burning, and weakness with and without use) The probability that surgical intervention will be needed in the future increases over time as the condition deteriorates.

***Please be sure to discuss each of these options with your provider before initiating care to evaluate your particular risk and benefits.***

### ***References***

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