

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

### **What is CTS?**

Carpal Tunnel Syndrome (CTS) occurs when the Median nerve becomes pressed or squeezed as it passes over the wrist and runs into the hand. The Median nerve controls the sensation to the palm side of the thumb and all fingers except the little finger. It also controls the movement of some of the small muscles in the hand. The Carpal Tunnel is a narrow passage way that has the median nerve and tendons passing through it.

### **Causes**

There are a number of factors that can cause CTS, these include:- trauma or injury to the wrist which causes swelling, such as a sprain or fracture, over-activity of the pituitary gland, hypothyroidism, rheumatoid arthritis, mechanical problems of the wrist joint, repetitive use, and fluid retention during pregnancy or menopause.

### **Signs and Symptoms**

Symptoms usually start gradually with frequent burning, tingling or numbness in the palm of the hand and fingers, especially the thumb, index and middle fingers. The symptoms are usually more apparent at night time in one or both hands as people sleep with their wrists bent. As the symptoms worsen tingling maybe experienced during the day and also decreased grip strength. In more chronic cases muscle wasting may occur especially around the thumb.

### **Who's at risk?**

Women are 3 times more likely to develop the condition as it is thought that Women's carpal tunnel is smaller than Men's. It is also thought that jobs involving a repetitive motion can contribute to symptoms however there is little evidence to support this. Medical conditions which can make you more susceptible to developing carpal tunnel syndrome are diabetes and metabolic disorders. It is also more likely that your dominant hand is affected first.

### **Causes**

There is a combination of factors that can cause carpal tunnel syndrome. Many people believe that there is an actual problem with the nerve itself although this isn't the case. Instead it's pressure on the nerve which causes the symptoms. Another cause of the condition can be swelling within the canal and the surrounding tendons which causes compression to the median nerve. An important factor to exclude is that the symptoms aren't originating from the neck, this can be ruled out by your physiotherapist.

### **Diagnosis**

Firstly it is important to examine the wrist for tenderness, swelling, warmth and discolouration. Each finger should be tested for sensation and the muscles at the base of the hand should be examined for strength and signs of wasting. Specific tests can also be used, these include:-

- Phalen's: This is performed by flexing the wrist gently as far as possible, then holding this position and awaiting any symptoms. A positive test is one that results in numbness/tingling in the median distribution within 60 seconds. The quicker the symptoms start the more advanced the condition.
- Tinels: This test is less sensitive than Phalens. It is performed by lightly tapping the skin over the carpal tunnel to elicit a sensation of tingling/pins and needles in the distribution of the nerve.
- Often it is necessary to diagnose Carpal Tunnel Syndrome by carrying out nerve conduction tests. Electrodes are placed on the hand and wrist and small electric shocks are applied to test the speed that the nerve transmit impulses are measured.

### **Treatment**

As night pain tends to be the most troubling time splints can be very useful in controlling the numbness/tingling sensation experienced. Medication such as anti-inflammatories can also help control the swelling and inflammation. Physiotherapy can also be helpful with the use of electrotherapy, strengthening/stretching and nerve exercises. If symptoms are resilient to treatment then steroid injections can be administered. The last resort would be surgery. Carpal tunnel release is one of the most common surgical procedures. It is usually done under local anaesthetic and the nerve is released by severing the tissue surrounding the nerve.

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For more details on Carpal Tunnel or to book an appointment please call 0115 9455232 or contact us via our website at [www.advance-physiotherapy.com](http://www.advance-physiotherapy.com).