



## CARPAL TUNNEL SYNDROME

The structure of the wrist is made up of the transverse carpal ligament and a line of small bones, which in combination form a ring. The carpal tunnel lies within the ring of bone and transverse carpal ligament. The median nerve runs through the carpal tunnel to give sensation to the thumb, forefinger, middle finger and half of the ring finger. Also within this space run the flexor tendons that allow hand movement. These tendons are covered by a smooth membrane, which can become inflamed and swollen, reducing the amount of space inside the carpal tunnel. After some time, the thickening membrane squashes the median nerve against the transverse carpal ligament until the nerve can't function properly. Numbness and pain are the result.

Carpal tunnel syndrome involves pressure upon the main nerve of the wrist leading to the symptoms of pain and numbness in the thumb and index finger. The tissues covering the tendons of the hand can become swollen by various conditions, including arthritis. These swollen tissues crush the central nerve until it can no longer function properly.

### CAUSE

Carpal tunnel syndrome can also be caused by repetitive hand movements performed over a long period of time. People who use their hands repetitively in their day-to-day activities - such as typists, bricklayers and musicians - are at increased risk of developing carpal tunnel syndrome. Many mothers experience carpal tunnel syndrome during pregnancy due to fluid retention, but this recovers following delivery. One or both hands can be affected.

### SIGNS AND SYMPTOMS

The symptoms most often reported with Carpal Tunnel Syndrome are:

- Pain
- Numbness
- Tingling
- Weakness

#### Pain

This is a burning pain radiating from the wrist to the thumb, index and middle fingers. It is often worse with movement, in hot weather or at night and may sometimes be relieved with shaking or elevating the hand.

#### Numbness

This may occur in specifically the pads of the thumb and index fingers with a portion of the middle finger. If severe, this can result in clumsiness of the hand resulting in constantly dropping things or difficulty grasping.

#### Tingling

This may occur in the thumb, index and middle fingers and feels very similar to pins and needles. It is often worse with movement, in hot weather or at night and may sometimes be relieved with shaking or elevating the hand.

#### Weakness

The muscles of the thumb, index finger and part of the palm may be weakened by constant pressure on the nerve. This is especially evident in movements involving the thumb. There may be obvious muscle wasting in the thenar muscles of the palm.

## INVESTIGATIONS

The diagnosis of Carpal Tunnel Syndrome is easily confirmed by a:

- Nerve conduction study - this measures the speed and the strength of the nerve impulse running through the median nerve at the wrist and can tell the severity of the compression of the median nerve.

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