

## Carpal Tunnel Syndrome

### **What is it?**

The carpal tunnel is a narrow passageway originating in the wrist and extends through to the hand; it is surrounded by wrist bones (carpals) and the transverse carpal ligament. The median nerve runs through the carpal tunnel and is responsible for providing sensation to the thumb, forefinger, middle finger and half of the ring finger.

Flexor tendons, amongst others, pass through this carpal tunnel and if any swelling or inflammation occurs, the median nerve can often become compressed causing pain, numbness, tingling or weakness; this is known as carpal tunnel syndrome.

### **What causes it?**

Carpal tunnel syndrome typically occurs due to damage of the flexor tendons within the carpal tunnel. It is commonly caused by repetitive stress placed on the flexor tendons. Other etiologies include:

- Wrist arthritis - in particular rheumatoid arthritis.
- Pregnancy - hormones associated with pregnancy cause a general fluid build up.
- Wrist fractures - bony fragments can damage/irritate the flexor tendon.
- Congenital factors - some people are born with smaller carpal tunnels.

### **Who is at risk?**

As previously mentioned, repetitive stress through the flexor tendons leads to carpal tunnel syndrome. Activities that can put you at high risk include:

- Keyboard typing
- Driving
- Playing sports such as gymnastics, cycling golf or tennis
- Using tools (especially hand tools that vibrate and screwdrivers)
- Writing
- Repetitive heavy lifting

### **How is it fixed?**

In most cases, carpal tunnel syndrome will heal following rest and appropriate physiotherapy treatment. It is important to note that you cannot 'work through' carpal tunnel syndrome. Initially, it might present as mild pain or stiffness but as the condition progresses, it will lead to constant pain and nerve damage that can become permanent.

Non-surgical treatment options include:

- R.I.C.E – rest, ice, compression and elevation

- Physiotherapy – soft tissue massage, joint mobilisation, dry needling, anti-inflammatory medication
- Ergonomic assessment and correction
- Splints for the affected hand
- Diuretic medication to reduce your body's fluid retention
- Corticosteroid injections into the affected area can reduce swelling

Surgical treatment is an option for carpal tunnel syndrome; however, it is secondary to conservative treatment. Surgery involves an incision in your palm (~5cm long) to expose the transverse carpal ligament. The surgeon then cuts this ligament to reduce pressure on the underlying median nerve. The incision is then sutured (closed). 4 weeks rest is advised post surgery.

### **Simple exercises to reduce carpal tunnel syndrome**

#### **A. Wrist extensor stretch**

Keeping your elbow straight with palm facing the ground, use your non-affected hand to curl your fingers around to your forearm. Hold for 15 seconds and repeat 4 times.

Do not continue if there is any excessive pain.

#### **B. Wrist flexor stretch**

Keeping your elbow straight with palm facing the ground, use your non-affected hand to gently pull your towards the roof. Hold for 15 second and repeat 4 times. You should feel a mild to moderate (pain-free) stretch in your forearm.



A. Wrist extensor stretch    B. Wrist flexor stretch