



YOUR GUIDE TO

CARPAL TUNNEL SYNDROME

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Introduction

Please take note of the following before starting any of the exercises in this guide:

- The information contained in this guide is intended to assist in managing your recovery.
- This guide is based on the latest medical research in the field and contains the best advice available to the best of our knowledge.
- This guide is complimentary to other medical services and is not intended as a substitute for a health care provider's consultation. Never disregard medical advice or delay in seeking advice because of something you have read in this guide.

● Many people have found quick and lasting relief from their pain by acting upon the information provided, but everyone decides for themselves what to do with this information. Should you doubt a particular exercise in your situation, please consult your health professional.

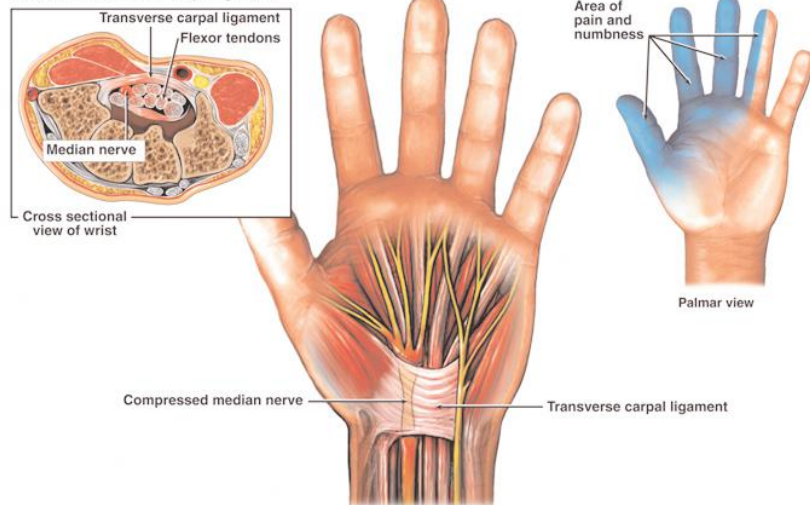
When consulting your health professional, it is wise to take this guide with you to show them.

What is Carpal Tunnel Syndrome?

The carpal tunnel is a channel in the palm side of the wrist through which a number of structures that are essential to the normal functioning of the hand run. The bones of the wrist are arranged in a semi-circle, with the tough transverse carpal ligament forming the roof over them. This ligament maintains the structure of the bones and creates a passageway known as the carpal tunnel. Running through the carpal tunnel are the tendons that we use to bend our

fingers and wrist, as well as the median nerve. The tunnel therefore provides protection for your median nerve, which is one of three nerves that supply the hand. The median nerve gives you feeling in your thumb, index finger, middle finger and the middle-finger side of your ring finger as well as controlling some of the muscles that move the fingers and thumb.

The carpal tunnel is the pathway of the flexor tendons and median nerve beneath the transverse carpal ligament.



What causes Carpal Tunnel Syndrome?

There is little room for expansion of any of the structures within the tunnel, so any swelling around it can compress the median nerve, causing the symptoms of carpal tunnel syndrome. Pressure on the nerve can stem from anything that reduces the space for it in the carpal tunnel. Causes might include anything from bone spurs to the most common cause, which is swelling or thickening of the lining and lubricating layer of the tendons inside the carpal tunnel.

There are a number of factors that can contribute to the symptoms of carpal tunnel syndrome:

- **Bone Conditions in the wrist:** such as Rheumatoid arthritis can cause thickening of the ligament that covers the carpal tunnel.
- **Hormonal changes:** such as an under-active thyroid gland (hypothyroidism) or an over-active thyroid gland (hyperthyroidism). Taking the combined oral contraceptive pill and menopause can also disrupt the hormone balance and lead to carpal tunnel syndrome

● **Other conditions:** pregnancy, obesity, and diabetes mellitus are also sometimes associated with this condition. These conditions can cause water retention (oedema) which can lead to swelling in the wrist and therefore narrowing of the tunnel)

● **Repetitive use or injury:** Repetitive flexing and/or extending of the tendons in the wrist and hand, especially when done forcefully or for prolonged periods of time without rest, can also increase the pressure within the carpal tunnel. Injury to your wrist e.g. dislocation or fracture, can also cause swelling that exerts pressure on the median nerve

● **Physical Characteristics:** It may just be that your carpal tunnel is narrower than average therefore providing less space for the tendons and nerve. Other less common causes include a generalised nerve problem or pressure on the median nerve at more than one location.

What Treatment can I receive?

Treatment for carpal tunnel syndrome is aimed at reducing the pressure on the median nerve. Some people with mild symptoms of carpal tunnel syndrome can ease their discomfort by taking more **frequent breaks** to rest their hands and applying **cold packs** to reduce occasional swelling. If these techniques don't offer relief, carpal tunnel syndrome treatment options include **wrist splinting, medications, wrist and finger exercises, ultrasound treatment** and **surgery**

- **Wrist Splinting:** A splint that holds your wrist in a position that maximises the space in the carpal tunnel. They are usually worn at night to relieve night time symptoms of numbness and tingling, but some people need to wear them during the day as well. The splints aid in the recovery process by restricting the movement in your wrist and preventing further damage or irritation. Your GP or physiotherapist may be able to provide you with wrist splints.

- **Non-steroidal or anti-inflammatory drugs:** NSAIDs may help to reduce inflammation and relieve pain, but it is important that you consult your GP or physiotherapist to ensure that there are no underlying factors that may be causing your pain/inflammation. If no inflammatory condition is involved then NSAIDs are unlikely to help relieve your symptoms

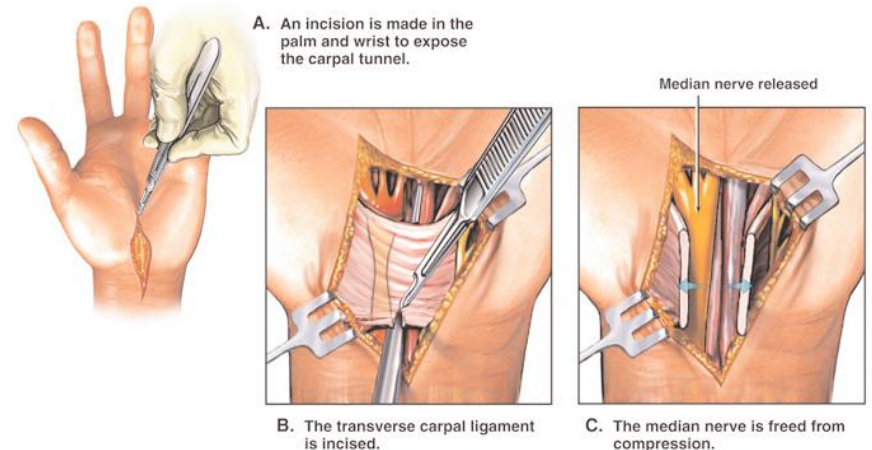
- **Corticosteroids:** These may be prescribed by your GP to reduce the inflammation and thus relieve the pressure on the median nerve. They are available on prescription and can be given both orally or in the form of an injection directly into the wrist. Corticosteroids may not always be suitable for people with diabetes, and long-term use is not recommended as side-effects can develop.

- **Ultrasound Treatment:** Ultrasound has been seen to relieve symptoms in some people. How it works is not fully understood, but it is thought to relieve inflammation therefore relieving the pressure on the median nerve. It is important to speak to your GP or physiotherapist regarding the benefits of this treatment for your condition.

- **Acupuncture:** The National Institute of Health has released a consensus statement acknowledging that acupuncture may also be useful for treating symptoms of carpal tunnel syndrome

- **Exercise:** Wrist and finger stretching and strengthening exercises may help to relieve the pressure on the median nerve. Some studies have indicated that nerve and tendon gliding exercise – exercises designed to relieve pressure on the median nerve – may also help to reduce symptoms, but the evidence is not conclusive. It is therefore important to consult with your physiotherapist before starting an exercise programme to ensure that the exercises are beneficial for your condition.

- **Surgery:** Surgery may be required if the symptoms of carpal tunnel syndrome persist, or are severe. The operation (carpal tunnel release) is performed under local anaesthetic and involves cutting the carpal ligament to make more space for the nerves and tendons in the carpal tunnel and therefore relieves the pressure on the median nerve.



What can I do to prevent future recurrences?

Carpal Tunnel syndrome can be difficult to prevent because it often occurs following a wrist injury, or due to a bone condition. There are therefore no proven strategies to prevent carpal tunnel syndrome, but to protect your hands from a variety of ailments, take the following precautions:

- **Reduce your force and relax your grip:** Most people use more force than needed to perform many tasks involving the hands.
- **Take frequent breaks:** every 15 to 20 minutes give your hands and wrists a break by gently stretching them. Alternate tasks where possible. If you are using equipment that vibrates or requires extra force, taking frequent breaks is even more important
- **Ergonomics and posture:** Incorrect posture can cause your shoulders to roll forwards, which results in your neck and shoulder muscles shortening and compressing the nerves in your neck. This can affect your wrists, fingers and hands. Posture can play a vital role in the treatment of carpal tunnel syndrome as the initial cause could be coming from poor postural positions during repetitive tasks. Ensuring that your

work station is set up correctly and that you maintain a neutral posture in your shoulders, elbows and wrists is also essential. The correct wrist and postural positions when gripping or performing repetitive tasks is important in the prevention of future episode of carpal tunnel. Extreme positions of flexion and extension should be avoided at all times. Smaller grip sizes tend to exacerbate the problem so try to increase the size of your grip to prevent future problems.

- **Obesity:** If you are overweight, adjusting your diet and losing a reasonable amount of weight will help to alleviate the symptoms of carpal tunnel syndrome, and prevent the condition from occurring in future. Your GP will be able to provide you with help and advice regarding diet and weight loss.

What exercises can I do?

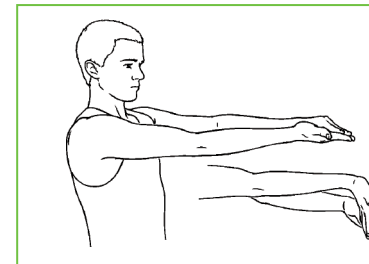
When starting an exercise programme it is important that you start slowly, and don't try to do too much too quickly. It is also important that throughout your exercise programme, you work in pain free ranges of movement. You will note that these pain-free ranges gradually increase as you get stronger. Trying to work in painful ranges will only prolong your recovery. The exercises

at this stage include both stretching and some strengthening exercises. It is important before starting this programme that you realise that this is a general exercise programme for carpal tunnel syndrome, which can be adjusted depending on the advice you have been given by your GP or allied health professional on assessment of your wrist. Try and perform all exercises twice daily.

Exercises phase 1

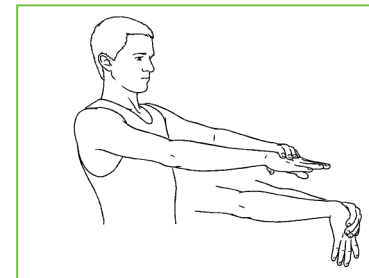
STRETCHES

- Hold each stretch for **30 seconds** and repeat **2-3 times** on each side
- Do not bounce the stretch and do not stretch into excessive pain



FLEXOR STRETCH

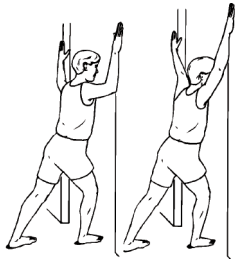
Keep the elbow straight and palm facing the ceiling. Using the other hand, slowly bend the wrist back until a stretch is felt.



EXTENSOR STRETCH

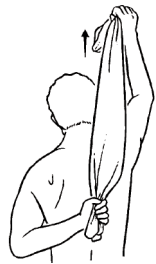
Keep the elbow straight and palm facing the floor. Use the uninvolved hand to grasp your hand and slowly bend the wrist down until a stretch is felt.

Exercises phase 1 (continued)



DOOR STRETCH

Stand in a walking position, side on to a doorway or corner. Bend your elbow and support the forearm against the doorframe. Gently rotate your upper trunk away from the arm until the stretching can be felt in the chest muscles

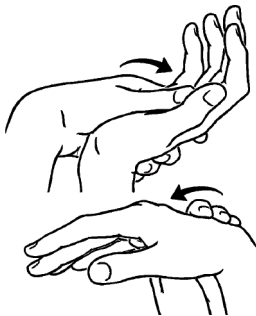


TOWEL STRETCH

Pull involved arm up behind back by pulling towel upward with uninvolvement arm.

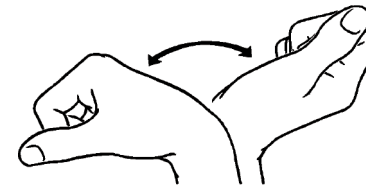
STABILITY AND ROM EXERCISES

- Complete these exercise in a controlled manner within a pain free range of movement.
- Perform 10 repetitions of each exercise on each hand and repeat at regular intervals throughout your day.



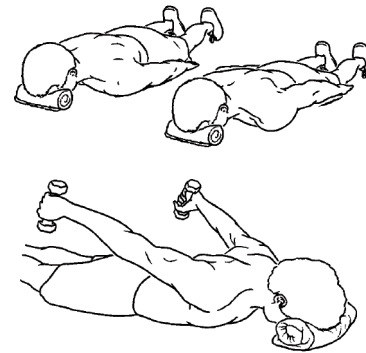
PASSIVE WRIST FLEXION / EXTENSION

Using other hand, grasp involved hand and slowly bend wrist until a stretch is felt. Relax. Then stretch as far as you can in the opposite direction. Be sure to keep elbow bent.



ACTIVE WRIST FLEXION / EXTENSION

Actively bend wrist forward then backward as far as you can.



PRONE FLIES 1

Lying face down, arms against your sides with your hands turned outwards, i.e. thumbs pointing upwards. Take your shoulder blades down your back and slightly in towards each other. Now lift your arms off the floor while maintaining your shoulder blade position. Look down at the floor while doing the exercise. Repeat 10 times. This can be progressed by holding small weights in your hands.

STRENGTHENING EXERCISES

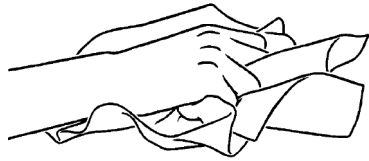
- With the paper crumpling perform 2-3 times on each hand
- With the isometric exercises, Hold each repetition for 10 seconds and repeat 5-10 times on each side



TOWEL ROLL SQUEEZE

With forearm resting on surface, gently squeeze towel.

Exercises phase 1 (continued)



PAPER CRUMPLING EXERCISE
Begin with palm down on a piece of paper. Maintaining contact to surface with heel of hand, crumple paper into a ball.



STATIC WRIST FLEXION
With involved forearm resting palm up on thigh, resist upward movement of hand with opposite hand as shown.



STATIC WRIST EXTENSION
With involved forearm resting palm down on thigh, resist upward movement of hand with opposite hand.



STATIC RADIAL DEVIATION
With involved forearm resting on thigh with thumb up, resist upward movement of hand with other hand.



STATIC ULNAR DEVIATION
With involved forearm resting on thigh with thumb up, resist downward movement of wrist with other hand.

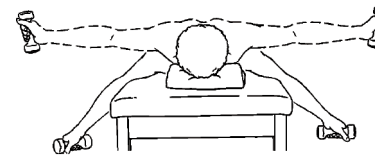
Exercises phase 2

Before starting phase 2 exercises, it is important that you are managing phase 1 exercises in a full pain free range of movement. If you progress on to phase 2 and find that you are not able to do all the exercises, don't be scared to go back to phase 1 or combine some of phase 1 and some of phase 2 exercises. It is important to continue to work in a pain free range of movement. The exercises in this

stage include some shoulder strengthening exercises, as it is important to strengthen the muscles in the shoulder and general arm, to provide support for movements of the wrist. These exercises will also enable you to progress to the more functional exercises of phase 3. Continue with the stretches of phase 1 before and after the exercise programme.

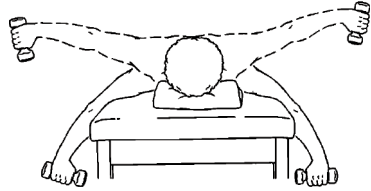
STABILITY AND ROM EXERCISES

- For the stability exercises, hold each position for 10 seconds and repeat 10 times
- For the ROM exercises, repeat 10-20 reps in each direction as stated
- Ensure that you are in the correct posture when doing all stability and ROM exercises



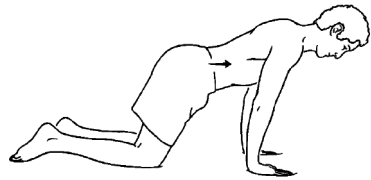
PRONE FLIES 2:
Lying on your stomach, bring your shoulder blades down your back and slightly in towards each other. Now raise arms straight out from side bringing shoulder blades closer together, and making sure you do not shrug your shoulders. Elbows straight, thumbs up. Hold for 10 seconds and repeat 10 times.

Exercises phase 2 (continued)



PRONE FLIES 3

In the above position, raise arms straight out from side bringing shoulder blades closer together. Elbows straight, thumbs down. Again hold for 10 seconds and repeat 10 times.



ALL FOURS ROCKING

Positioned comfortably on hands and knees gently lean forward, backward and side to side. Perform movements slowly, smoothly and without pain. Ensure that your back is flat, and your shoulder blades are down your back and slightly in towards each other.



SIDE TO SIDE PENDULUM

Gently move arm from side to side by rocking body weight from side to side. Let arm swing freely.



CLOCKWISE / COUNTER-CLOCKWISE PENDULUM

Let arm move in a circle clockwise, then counter-clockwise by rocking body weight in a circular pattern.

STABILITY AND ROM EXERCISES

- Repeat 10-12 reps on each side
- You should be able to get a piece of theraband from your physiotherapist.
- Ensure that you do not work into pain. Limit your range of motion if necessary so that you are working in a pain free range of movement.



RESISTED WRIST FLEXION

With tubing wrapped around fist and opposite end secured under foot, bend wrist up (palm up) as far as possible. Lower slowly, keeping forearm on thigh.



RESISTED WRIST EXTENSION

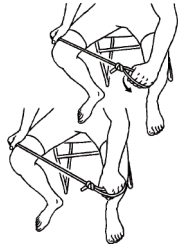
With tubing wrapped around fist and opposite end secured under foot, bend wrist down (palm down) as far as possible. Lower slowly, keeping forearm on thigh.



RESISTED RADIAL DEVIATION

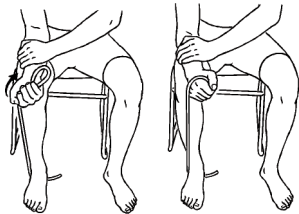
With tubing wrapped around fist and opposite end secured under foot, bend wrist up (thumb side up) as far as possible. Lower slowly, keeping forearm on thigh.

Exercises phase 2 (continued)



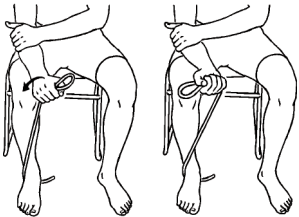
RESISTED ULNAR DEVIATION

With tubing wrapped around fist and opposite end secured under foot, bend wrist up (thumb side down) as far as possible. Lower slowly, keeping forearm braced on knee.



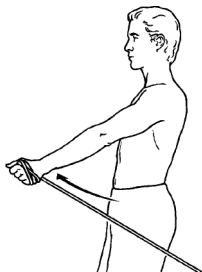
RESISTED FOREARM PRONATION

With palm up, stabilize forearm on thigh with opposite hand. Keep tubing to outside of hand and roll palm down as far as possible.



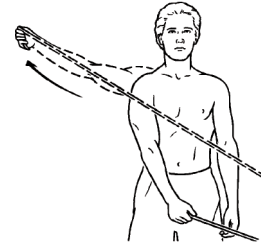
RESISTED FOREARM SUPINATION

With palm down, stabilize forearm on thigh with opposite hand. Keep tubing to the inside of hand and roll palm up as far as possible.



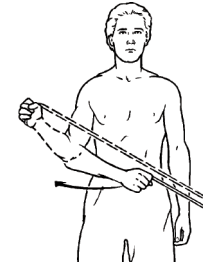
RESISTED SHOULDER FLEXION

Attach tubing to a doorway or place under your foot. Ensure that you are in a good posture i.e. shoulder blades down and towards each other. Start with arm at side and pull arm outward and upward. Move shoulder through pain free range of motion.



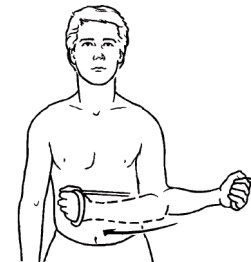
RESISTED SHOULDER ABDUCTION

In the above position, using tubing, start with arm across body and pull away from side. Move through pain free range of motion.



RESISTED SHOULDER EXTERNAL ROTATION

Using tubing, and keeping elbow in at side, rotate arm outward away from body. Be sure to keep forearm parallel to floor.



RESISTED SHOULDER INTERNAL ROTATION

Using tubing and keeping elbow in at side, rotate arm inward across body. Be sure to keep forearm parallel to floor.

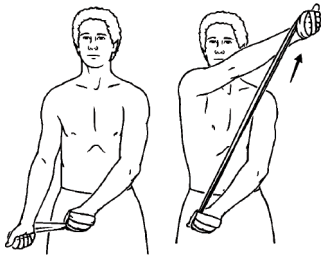
Exercises phase 3

Only progress to phase 3 when you are able to complete the exercises in phase 2 without pain. This phase is mostly focused on returning to function. The exercises included below combine some functional movements you will require in your everyday activities. It is important in

this phase to progress back to full function and functional activities that you normally perform in your day can be used as strengthening tools. An example of exercises that can be used in preparing for activities that you need to get back to are the tennis exercises.

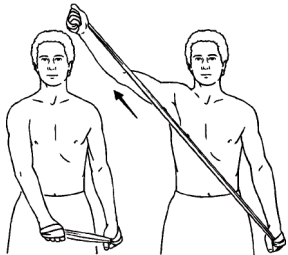
STRENGTHENING EXERCISES

● Repeat each exercise 10 times and ensure that you are working in a pain free range of movement.



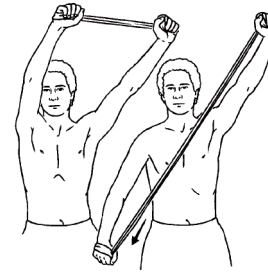
RESISTED DIAGONAL FLEXION 1

Using tubing, start with arm out from side, palm down. Pull arm up, out and across body, rotating arm as you move so thumb continues to point back.



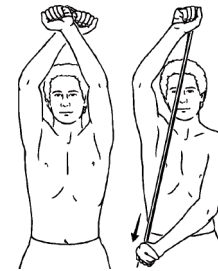
RESISTED DIAGONAL FLEXION 2

Attach tubing to a door way or secure bar or under your foot. Start with palm facing behind you. Pull arm out, up and across body rotating arm as you move so palm continues to face behind you.



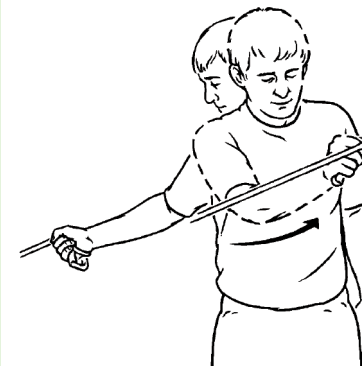
RESISTED DIAGONAL EXTENSION 1

Attach tubing to a higher position above your head. With arm reaching above shoulder and across body. Gently pull downward and away from your body. Return slowly to starting position.



RESISTED DIAGONAL EXTENSION 2

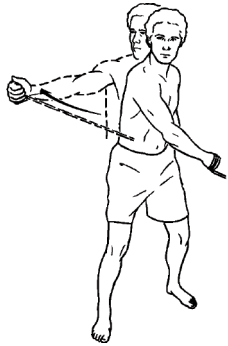
Grasp tubing with arm above and behind you. Bring arm downward and across body. Return slowly to starting position.



TENNIS FOREHAND

Using tubing, pull hand across body while pushing out with arm. This motion is identical to tennis forehand.

Exercises phase 3 (continued)



TENNIS BACKHAND

With feet perpendicular to tubing and arm across body toward tubing attachment, pull across body.

Contact us

This guide is designed to assist you in the self-management of your injury/condition.

We are here to assist your recovery in the shortest but safest possible time. If you have any uncertainties or queries regarding the information, please do not hesitate to contact us on:

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