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Carpal Tunnel Syndrome and Carpal Tunnel Syndrome Treatment

Discover the causes behind Carpal Tunnel Syndrome plus the

correct treatment and prevention strategies.

Carpal tunnel syndrome (CTS) is a relatively common complaint in individuals who perform constant and repetitive motions of the hand and wrist. Any athlete who plays a sport that requires them to repeatedly grasp something, while the wrist joint is twisting and turning, is at a high risk of developing carpal tunnel syndrome.

Anatomy of the Wrist Causes of Carpal Tunnel Syndrome Signs and Symptoms Prevention Treatment

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What is Carpal Tunnel Syndrome?

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In This Article....

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If you suffer from carpal tunnel syndrome or are seeking to prevent its occurrence it is important to follow the information in this article. In addition, adding a few simple stretches to your fitness program will also help. To get started on a safe and effective stretching routine learn

more about The Stretching Handbook and how it can improve your fitness.

Sports that have a high incidence of carpal tunnel syndrome include most racquet sports, handball, swimming, body building, rowing, golf, archery and rock climbing, although any sport that involves prolonged use of the wrist and hand can cause the condition.

What is Carpal Tunnel Syndrome?

forearm to the hand where it branches to supply innervations to the thumb and the first two fingers.

Carpal tunnel syndrome is a compression neuropathy in which the median nerve that runs from the forearm to the hand becomes entrapped in the region of the wrist. This entrapment means that the thumb and the first three fingers, as well as the majority of the palm can, and often

do, become numb. The median nerve also supplies limited movement to the thumb through the "Thenar" muscles (the lump at the base of the thumb) and so the condition normally causes partial paralysis of the thumb.

Anatomy of the Wrist As already mentioned carpal tunnel syndrome is caused by the entrapment and compression of the median nerve. This nerve runs from the

Carpal Tunnel Syndrome picture used from "Principles of Anatomy and Physiology" - Sixth Edition. By G.J. Tortora and N.P. Anagnostakos. Published by Harper & Row - 1990

> Carpal Tunnel Syndrome image from Principles of Anatomy and Physiology by G.J. Tortora and N.P. Anagnostakos.

As it traverses the wrist area, the nerve passes through the carpal tunnel, which is composed of the carpal bones and the transverse carpal ligament. The carpal bones make up the base and sides of the tunnel so that a semicircular shape or valley is formed. Stretched across this, much like a bridge that crosses the valley is the tough transverse ligament.

The median nerve, along with nine tendons that give the thumb and fingers movement, pass through the tunnel and into the hand. The carpal tunnel is a rigid structure and the inner space is fixed and very confined.

Causes of Carpal Tunnel Syndrome

Carpal tunnel syndrome is ultimately an inflammatory disease and so any sport or pastime that is repetitive in its actions can cause either the muscles or the tendons of the wrist to become irritated and inflamed.

In addition to the median nerve, a set of nine tendons also run through the carpal tunnel. When the protective linings, or synovial sheaths, of these tendons become swollen and inflamed this puts excessive pressure firstly on the tendons but also on the median nerve because of the limited amount of space within the tunnel. Other ways in which the pressure becomes increased is when the tough transverse carpal ligament becomes swollen and when a bone fracture or break causes oedema or the build up of fluids.

When the median nerve becomes compressed because of the excess pressure in the carpal tunnel, the nerve signals that are normally transmitted through the nerve become slowed which ultimately results in abnormal sensations in the affected hand i.e. numbness, pins and needles or a tingling, burning feeling.

Signs and Symptoms

The majority of the symptoms felt by sufferers of carpal tunnel syndrome are ultimately due to the entrapment of the median nerve. Common symptoms include:

- Weakness in the affected hand which affects grip. Many sufferers find that picking up a bag or opening a door becomes difficult because they can no longer grip with enough force.
- A feeling of numbness in the thumb, fingers (not the little finger) and the thumb-side of the palm. Alternatively some individuals may have a tingling sensation instead.
- Impaired coordination of the thumb and forefingers so that fine movements become difficult. ■ Pain in the wrist and hand that can stretch up as far as the elbow. The pain that is associated with carpal tunnel syndrome is not
- actually caused by the nerve compression; rather it is caused by inflammation or by a bone fracture which in turn causes the nerve compression. Most cases of CTS cause absolutely no damage to the nerve itself and so when the pressure is relieved the symptoms ■ Tinel's sign - this is a diagnostic test which involves tapping the carpal tunnel area lightly to see if a sharp pain is felt. If pain is felt
- then a diagnosis of CTS is generally given.

Carpal Tunnel Syndrome Prevention

It is important for athletes to warm up the wrist area before they engage in any serious training so that the risk of developing carpal tunnel syndrome is reduced.

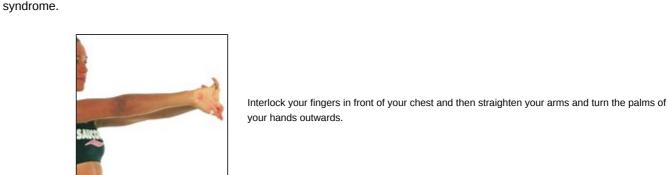
Isometric strength exercises (these are exercises where the muscles are contracted, but the limbs do not move) not only warm the wrists and nearby areas up but they also strengthen the muscles and improve blood flow. Below are a few exercises that will help to strengthen the wrist and reduce irritation.

- 1. Make a fist with the right hand, palm face up. Using the left hand gently push down on the fisted hand while keeping the right wrist straight. 2. Turn the fisted hand over and again push down gently on the knuckles. Remember to keep the wrist straight.
- 3. Turn the fisted hand so that the thumb is pointing up and repeat the exercise.
- 4. Next hold the first two fingers up (like the "peace" sign but with the fingers closed). Draw 5 clockwise circles and then 5 anticlockwise circles in the air.

avoid though is extreme flexion and extension because extreme flexion doubles the pressure that is applied to the median nerve whereas extreme extension virtually triples it. Only perform warm up and strength exercises as far as feels comfortable; pushing things too far can result in the condition you're trying to prevent. Because it is often inflammation of the tendon sheaths that cause carpal tunnel syndrome, flexibility exercises that reduce pressure on the

tendons should also be practiced. A number of the sports mentioned in the introduction cause the muscles of the forearms to tighten, which can then cause pressure on the tendons. Thus stretching exercises that reduce the tension in the forearms will help to prevent carpal tunnel

These simple exercises should be practiced each day, especially if one of the sports mentioned above are regularly performed. One thing to



Use your other hand to further rotate your hand upwards.

tunnel syndrome stretching for your wrist

wrist stretches, carpal

Place one arm straight out in front, parallel to the ground. Rotate your wrist down and outward.

you include a wider range of exercises. So to improve your performance, reduce injuries and really take advantage of all the stretching exercises on offer, grab a copy of the updated 2011 edition of the Stretching Handbook and accompanying DVD. Together, they include 135 clear photographs and 44 video demonstrations of unique stretching exercises for every major muscle group in your body. The DVD also included 3 customized stretching routines (8 minutes each) for the Upper Body; the

Lower Body; and the Neck, Back & Core, plus a bonus DVD-ROM feature that allows you to print out

over 80 stretching routines that you can take with you where ever you go.

Elevation, and Referral to an appropriate professional for an accurate diagnosis.

so that there is a much lower chance of further aggravating the injury.

While the recommendations on this page are a good starting point, you'll get a lot more benefit when

The Handbook and DVD will show you, step-by-step, how to perform each stretch correctly. Plus, you'll also learn the 7 critical rules for safe stretching; the benefits of flexibility; and how to stretch properly. Check out the Stretching Handbook & DVD for yourself. Another form of prevention is by using a wrist brace which helps to stabilize the wrist and stop possible overextension and flexion.

Carpal Tunnel Syndrome Treatment CTS is a soft tissue injury of the muscles and tendons around the wrist joint and therefore should be treated like any other soft tissue injury. Immediately following an injury, or at the onset of pain, the R.I.C.E.R. regime should be employed. This involves Rest, Ice, Compression,

a complete and full recovery. As part of the R.I.C.E.R. regime a night splint that provides support to the wrist and keeps it in a straight line (i.e. the position that applies least pressure to the median nerve can be useful). If the symptoms persist, it may be worth while keeping the wrist splint on during the day

It is critical that the R.I.C.E.R. regime be implemented for at least the first 48 to 72 hours. Doing this will give you the best possible chance of

The next phase of treatment (after the first 48 to 72 hours) involves a number of physiotherapy techniques. The application of heat and massage is one of the most effective treatments for speeding up the healing process of the muscles and tendons.

Once most of the pain has been reduced, it is time to move onto the rehabilitation phase of your treatment. The main aim of this phase is to

Medication is also commonly prescribed in cases where the pain in the wrist and hand is quite severe. The most widely prescribed family of drugs for carpal tunnel syndrome is the non-steroidal anti-inflammatory such as ibuprofen. These work by reducing the pain and also acting on the underlying cause of the condition, the inflammation. Occasionally this type of drug is not enough and so a corticosteroid can be

regain the strength, power, endurance and flexibility of the muscles and tendons that have been injured.

injected directly into the carpal tunnel. This provides virtually instant relief from the common symptoms. Article by Brad Walker and The Stretching Institute™ Copyright © 2012. All rights reserved. Terms of Use

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About the Author: Brad is often referred to as the Stretch Coach and has even been called the Stretching Guru. Magazines such as Runners

World, Bicycling, Triathlete, Swimming & Fitness, and Triathlon Sports have all featured his work, Amazon has listed his books on five Best-Se lists. Google cites over 100,000 references to him and his work on the internet. And satisfied customers from 42 countries have sent 100's of testimonials. If you want to know about stretching and flexibility, Brad Walker is the go-to-guy. Please don't post questions below. If you have a question, please review our help section.

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Liz Edwards i am going to keep doing yoga despite the extreme flexion, have heard it

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Contact Information

• The Stretching Institute ®

47-47 36th Street, Suite # 3208

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