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Carpal Tunnel Relief – Is Exercise The Solution?

By "Jeff P. Anliker, LMT"

Carpal tunnel Syndrome (CTS) is one of many musculoskeletal injuries listed under the broader

terms of Repetitive Strain Injury (RSI) or Cumulative Trauma Disorder (CTD). A number of other injuries listed under these terms, but that are not exclusively caused by a repetitive strain injury or cumulative trauma disorder include Guyon's Syndrome, Tendonitis, Cubital Tunnel Syndrome, Medial and Lateral Epicondylitis and Trigger Finger.

Carpal tunnel syndrome and other repetitive strain injuries are caused by excessive overuse of a muscle or group of muscles in a unidirectional movement pattern. Examples would include typing, wringing a washcloth and using a computer mouse. All of the movement patterns involve motion against resistance in one direction - flexion. This one-way motion does not actually have to involve "repetitive" movements as the term "repetitive strain injury" implies, as it is just as common for an individual to become afflicted with a repetitive strain injury while performing activities that involve no movement of the hands at all. Examples of this would include holding onto a steering wheel, gripping a pen or a tool such as a hammer all day. With these types of activities, no repetitive type motion is involved at all, but instead, "static flexion" is utilized, which involves the overuse of these muscles, but in a manner that is stationary.

Since Repetitive strain injuries are most often caused by unidirectional patterns, the best way to counteract each specific overused motion is the implementation of an exercise program that involves the implementation of resistance exercises to the opposing muscle or group of muscles that is being overused. An example training program for carpal tunnel syndrome would include resistance exercises for the muscles that open (extension) the hands in order to counteract the overuse of the muscles that close the hands (flexion). This principal of "balancing" muscles groups so that there is a more natural equality of strength between muscles that surround a specific joint, whether it is the wrist, elbow, shoulder or neck, is basic common sense and integrated into training programs by the top practitioners and therapists in the industry today. Here are a few examples of practitioner responses regarding the implementation of restoring balance between muscle groups in order to prevent and rehabilitate repetitive strain injuries including Carpal tunnel syndrome.

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"Muscle balance must be restored with specific exercises. Otherwise, the already strong and overused muscles get stronger, and the weak and underused muscles remain weak. Individuals get good at using the overused muscles and must be trained specifically to recruit and strengthen the weak underused muscles." Philip E. Higgs, M.D. and Susan E. Mackinnon, M.D. Department of Surgery, Washington University School of Medicine, St. Louis, Missouri. *Annu. Rev. Med.* 1995. 46:1–16

"If certain muscle groups are underused, opposing muscle groups will be overused. Muscles in either a lengthened or shortened position will be at a mechanical disadvantage and weak. The overused group will hypertrophy, and the underused group will continue to be weak. This combination produces a self-perpetuating condition that maintains the abnormal posture and muscle imbalance." Philip E. Higgs, M.D. and Susan E. Mackinnon, M.D. Department of Surgery, Washington University School of Medicine, St. Louis, Missouri. *Annu. Rev. Med.* 1995. 46:1–16

A strong example of how important it is to properly balance muscle groups is seen in the following statement regarding the balancing of the in the hands and forearms.

"All of the extrinsic hand muscles become involved in a power grip, in proportion to the strength of the grip."..... "Strong agonist–antagonist interactions are needed between the flexors and extensors of the hand and fingers to produce forceful hand–grip. Powerful flexion of the distal phalanges requires strong activity also of the finger extensors." Janet G. Travell, M.D. and David G. Simons, M.D. *Myofascial Pain and Dysfunction–The Trigger Point Manual. Volume 1 Upper Extremities, Ch:35, pg. 501.* Copyright 1983.

Performing corrective exercises in order to prevent and rehabilitate carpal tunnel syndrome and repetitive strain injuries is of the utmost importance. In 95% of most cases, there is no need for invasive techniques like cortisone injections or surgery in order to eliminate carpal tunnel or other repetitive strain injuries. It is one thing if you have an actual structural anomaly that needs to be corrected, but since most cases of carpal tunnel and repetitive strain injury occur in later years, it is quite obvious that a physical anomaly does not exist as this would be experienced by the individual in their younger years. Instead a structural or joint imbalance exists that has developed due to long–term overuse, or sudden trauma due to overuse, and is a result of overly strong muscles pulling one direction while the opposing weak muscles try unsuccessfully to counteract and pull the other direction.

Muscle imbalances can be corrected with simple exercises. By performing a sensible, active stretch / exercise program that focuses on keeping muscles balanced, individuals can stay healthy and symptom–free!

NOTE: Be sure to be aware of any pain that is experienced 'while' performing stretches or exercises. If pain is experienced while performing any particular motion, stop immediately. Post exercise soreness is normal. Always be sure to consult a physician before beginning any stretch / exercise program.

Jeff P. Anliker, LMT, is a Therapist and Inventor of Therapeutic Exercise Products that are utilized by Corporations, Consumers and Medical Facilities around the world. Balance Systems, Inc.

<http://www.repetitive–strain.com>

Carpal Tunnel Syndrome – A Secondary Effect

By Jeff P. Anliker, LMT

What causes carpal tunnel syndrome to develop? Although there are many professional opinions out there regarding the subject, most do not provide an accurate description of how carpal tunnel syndrome actually occurs. What is agreed upon is the fact that the flexor tendons and median nerve are operating in a much smaller space than they were prior to the onset of symptoms. Many professionals state that it is the swelling of the involved tissues that is diminishing the space and others say that is caused by a muscle imbalance between the flexor and extensor muscles that is causing the carpal bones to shift into the carpal tunnel, making the carpal tunnel much smaller.

After much research, my opinion is that the swelling is a "secondary effect" of the nine flexor tendons and median nerve having to glide through the carpal tunnel which has decreased in size due to a muscle imbalance*.

How does the carpal tunnel decrease in size? The carpal tunnel decreases in size because the flexor muscles that `close' the hands are exercised on a daily basis with virtually every activity we perform, and they become stronger, shorter and tighter than the extensor muscles that `open' the hands, thus causing the carpal bones to shift inward, collapsing the carpal tunnel and making it smaller. As the tendons and median nerve slide back and forth in the much smaller space, friction between the tissues occurs.

What does friction in the carpal tunnel cause? Friction between flexor tendons and median nerve within the carpal tunnel causes inflammation and swelling, which puts pressure on the median nerve, resulting in carpal tunnel syndrome. This is the reason that surgeons sever the carpal ligament, making more room for the flexor tendons and median nerve to move around in. If the carpal tunnel is returned back to its original size, prior to the onset of symptoms, the friction and swelling is eliminated and the symptoms disappear.

Continually performing repetitive wrist and finger flexion while symptoms are already present will ultimately aggravate the existing condition even more and lead to possible irreversible damage of the flexor tendons, blood vessels and median nerve within the carpal tunnel.

How can the carpal tunnel syndrome be eliminated? By stretching and lengthening the overly restrictive flexor muscles that `close' the hands and strengthening and shortening the extensor muscles that `open' the hands, the carpal tunnel can return to its normal size, decreasing impingement of the tendons and median nerve, which also eliminates friction and causes the carpal tunnel symptoms to disappear.

Now is the time to take the steps to prevent and/or eliminate carpal tunnel syndrome by starting a stretch / exercise program for your hands. Speak with your doctor or contact a certified therapist today to implement a good stretch and exercise program to keep you strong, healthy and injury-free!

Jeff P. Anliker is a Therapist and Inventor of FlexTend and other therapeutic products that are utilized by Corporations, Consumers and Medical Facilities around the world for prevention, rehabilitation and

performance enhancement.

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