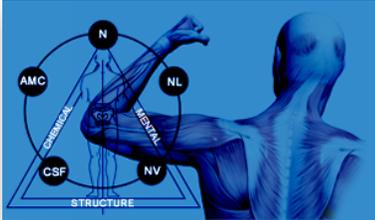


# Pathways To Health



A Healthcare and Selfcare Newsletter From The International College of Applied Kinesiology - USA Chapter

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Your doctor of applied kinesiology is uniquely trained and qualified to provide care for the health issues covered in this newsletter.

Please share this newsletter with friends and family!

\*The information in this newsletter is not intended to diagnose or treat the individual.

Soft tissue nerve entrapment may underlie many cases of pain unresponsive to care

## Nerve Entrapment: A Hidden Source Of Pain

Nerve entrapment can be painful and debilitating. Problems with nerves can occur not only in the spine but also along the path the nerve takes through the torso and extremities. Nerves can be trapped between bones, muscles, and other tissues in any given area. An applied kinesiology specialist is trained to identify the cause of soft tissue nerve entrapment, isolate and treat the key issues, and teach selfcare to maintain correction.

These types of injuries are very common in sports or repetitive stress activities on the job. Nerve injuries can cause pain, weakness or numbing sensations. In this manner, they mimic spinal problems and are many times misdiagnosed. For example, when there is weakness in the hand or you wake up and your hand is stiff and has "fallen asleep," you think it is a problem with your wrist or hand. The problem may very well be that the nerves are trapped under a muscle that is too short and tight where the nerve exits your chest going into your arm.

Many examples of nerve entrapment exist: a golfer or tennis player gets a pain in the elbow, or wakes up at night with a numb hand. Reaching overhead causes shoulder pain. Removing a wallet out of the back pocket or fastening a bra creates pain in the arm. The symptom may actually be related to another area where the nerves are being stretched or entrapped.

The elbow problem could be tendinitis or it could be the entrapment of a nerve under a muscle that's being used. Reaching over head could be a problem

with the rotator cuff or the stretching of a nerve in the vicinity of an unstable shoulder blade.

Carpal tunnel syndrome is often identified as weakness and atrophy of the muscles of the thumb. The nerve to this area of the hand can be involved and entrapped in six different areas as it leaves the spine and travels down the arm. It is rare to find the nerve is entrapped in only one place. Similarly, nerves that travel to the foot can be trapped or stretched in six different places from the pelvis to the ankle. Again, it is common to find that a person with lower leg symptoms like ache or weakness has more than one place that the nerve has been entrapped. For example, Dr. Janet Travell, who was President John Kennedy's medical doctor, has written that more nerve entrapments in the pelvis caused by the piriformis muscle exist than there are disc protrusions related to symptoms in the leg.

An accurate history with your applied kinesiology practitioner is the first key. Does the ache, pain or weakness occur during a specific movement? Does it occur after you do the same motion many times? Is there a position that makes it better? The answers to these questions can help determine the potential areas or area where the nerve can be adversely affected and help to determine what tests need to be done to isolate the problem.

Accurate muscle testing performed by an applied kinesiologist with extremities in different positions can help to diagnose the problem.

For example, the muscles of your hand may test strong in a relaxed position. But, by putting your hand in a functional position, like pushing up from a chair, the muscles may weaken. Specific testing gets specific results. A hidden problem in the wrist where the nerves are trapped can be revealed by the slightest adjustment to testing. In other words, rotating your forearm may uncover a problem at the elbow that is trapping the same nerve, and reaching behind you causing the hand to go weak indicates yet another area of nerve entrapment.

To correct these problems, you first have to isolate and identify each of the areas where the nerve is entrapped. The nerve could be stretched or impinged upon by a short or a weak muscle. To treat these conditions, an accurate diagnosis is the key to effective treatment.

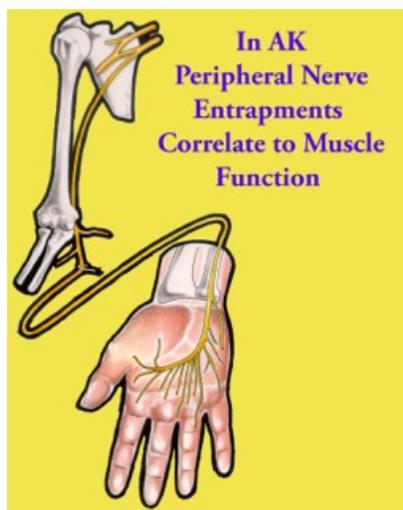
Trouble opening a jar indicates weak hand muscles. When pulling the shoulders back and raising the chest cage results in the hand becoming stronger, it indicates the nerves are trapped in the outer portion of the chest under one of the pectoral muscles.

To correct this condition, two things must be done. First, the shortened muscle must be stretched and, second, the inhibited muscles of the upper back and shoulder that would normally oppose the action of the shortened pectoral muscle must be strengthened by restoring muscle tone with applied kinesiology methods.

One mistake commonly made is exercising muscles that do not function properly. Often this further injures the

muscles, which only become weaker. Here the cause of the under functioning muscle must be addressed. This might be due to trauma to the muscle itself or possibly a problem with the spine that results in the muscle inhibition. After correction, exercise of the muscle may be needed with muscle testing used to determine the optimal exercise for the muscle and to monitor your progress.

In all of these cases, the stretching or the entrapment of the nerve leads to inflammation. There are both positive and negative factors that can affect the healing rate of the nerve. Your diet can contain both pro-inflammatory and anti-inflammatory elements and the ratios of the nutrients may need to be addressed.



The tools of Applied Kinesiology allow us to examine and find the the location of entrapment and its' cause, test for both positive and negative factors in the diet to include possible nutritional supplementation to speed healing.

Finally, some lifestyle changes may be needed.

These could include things like the types of shoes you wear in foot entrapments, sleep positions, pillow height, or postural changes as in how you sit at work, at home, or driving the car.

#### References

David Leaf, DC is a diplomate and certified teacher for the ICAK, past Chairman of the Board for the ICAKUSA chapter, and has written reference manuals for doctors to learn applied kinesiology. Dr. Leaf has done extensive work with professional athletes and athletic teams and practices in Plymouth, Massachusetts.

## AK and Carpal Tunnel Syndrome

Carpal tunnel syndrome (CTS) is the most common compression neuropathy (~ 5% of general population). Because CTS can disable our patients, many AK doctors have evaluated the treatment of this condition.

Dr. James Hogg and an AK colleague presented results of 65 severe cases of CTS in an effectiveness trial. Each case had inhibition of the opponens pollicis muscle on MMT, measurable loss of grip strength, pain, numbness and tingling in the wrist and median nerve sensory area of the hand, atrophy of the thenar eminence, or sleep disturbance caused by hand pain. Treatment as indicated by AK methods included soft tissue therapies and spinal manipulation to the cervical and thoracic spine. If a radius/ulna separation was present, a non-elastic brace was used after manipulation to prevent re-separation. Treatment to the shoulder and nutritional support (usually vitamin B6) were given if indicated.

An average of approximately 6.7 visits to eliminate CTS symptoms, with an average cost of approximately \$165.00. (1994) The overall success rate (patients who remained symptom free for at least 6 months) was 84%.

The risks and complication rates of CTS surgery are low, but possible problems from endoscopic carpal release surgery include permanent injury to nerves, blood vessels, and tendons, and the average cost is \$2,445. Many studies also suggest vitamin B6 in treating carpal tunnel syndrome.

#### References

Scott Cuthbert DC practices in Pueblo, CO. He has published two textbooks on AK; one on the upper body, cervical spine, cranium and TMJ is pending.



*Carpal Tunnel Syndrome = nerve entrapment  
May show numbness, tingling, and weakness  
Chronic or severe cases may cause atrophy  
of the muscles of the hand*



## Carpal Tunnel Syndrome: A Common Cause of Wrist and Hand Pain

The carpal tunnel of the wrist, is composed of eight small bones forming 2 rows in an arch, and a ligament stretching from one end to the other like a roof. The space between the roof and the arch is forms the tunnel through which travels arteries, veins, lymphatic vessels, nine tendons coated in a specialized synovial sheath, and the median nerve.

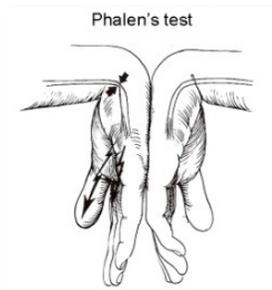
Carpal tunnel syndrome (CTS) is a painful condition due to chronic entrapment of the median nerve at the wrist that leads to neuropathy. The condition can refer pain to the hand and fingers, the wrist itself or up the arm. It has been categorized variously as repetitive stress injury (RSI), cumulative trauma disorder (CTD) and repetitive use injury (RUI). Your applied kinesiology practitioner is skilled in testing each of the muscles surrounding the wrist and hand, as well as the muscles up the arm and into the shoulder and neck. All muscles in the region connect through soft tissue fascial planes. An imbalance anywhere along this chain can cause carpal tunnel symptoms.

Symptoms usually start gradually, with frequent burning, tingling, or itching numbness in the palm of the hand and the fingers, especially the thumb and the index and middle fingers. Some carpal tunnel sufferers say their fingers feel useless and swollen, even though little or no swelling is apparent. The symptoms often first appear in one or both hands during the night, since many people sleep with flexed wrists. A person with carpal tunnel syndrome

may wake up feeling the need to "shake out" the hand or wrist. As symptoms worsen, people might feel tingling during the day. Decreased grip strength may make it difficult to form a fist, grasp small objects, or perform other manual tasks.

Predisposing factors include: diabetes, obesity, pregnancy, hypothyroidism, and heavy manual work or work with vibrating tools. Falling forward landing on the hands is another common cause.

In chronic and/or untreated cases, the muscles at the base of the thumb may waste away. Some people are unable to tell between hot and cold by touch."



Conservative medical treatment of carpal tunnel syndrome consists of splinting and immobilizing the wrist, anti-inflammatory or steroid medications to reduce inflammation and swelling that compresses the nerve and massage or stretching exercises.

Applied kinesiology looks broadly at many inter-related factors called the five factors of the IVF. Acupuncture meridian points, nerve pathways, lymphatics, craniosacral and nutrition may play a part in the normal healing of these structures.

In some cases, vitamin B6 may have a role in causing chronic pain according to the NIH. Doses of up to 100 to 200mg per day may alleviate the condition. Vitamin B6 may raise pain threshold levels and this may make the pain associated with carpal tunnel syndrome seem less severe. Excessive intake of vitamin B-6 from supplements can have damaging effects, resulting in peripheral neuropathy, so please have this evaluated by your AK specialist.

Try these screening tests at home:

**Tinel's Sign:** Tap wrist.

**Phalen's Sign:** Bend wrist 90 degrees: hold for three minutes. These tests are positive for carpal tunnel syndrome if they result in tingling or pain.

If either of these test elicit the symptoms described, seek further testing and appropriate treatment. When these tests are positive, carpal tunnel syndrome typically responds rapidly to the applied kinesiology approach. Nerve entrapment can have many causes; x-rays, MRI, or blood tests may be necessary for an exact diagnosis. Even if these tests are not positive and you have wrist discomfort or weakness, call for an appointment with your local AK practitioner.

### References

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# Q&A

*What is the role of computer use in causing carpal tunnel syndrome (CTS)?*

Although it is not the only factor, using a mouse has been shown to increase the pressure in the wrist joint. This limits the blood supply to the nerve and can contribute to carpal tunnel syndrome. Any consistent restriction of blood supply can enhance the pain related to CTS. An ergonomic keyboard or support pad can also be useful in maintaining proper blood flow during typing.

In healthy individuals, the intra-CT pressure is about 3-5 mmHg when the wrist is in a neutral position. Median Nerve (MN) blood flow was found to be impaired when the CT pressure approached or exceeded 20-30 mmHg. Common functional positions of the wrist, e.g., flexion, extension or even using a computer mouse, might result in an increase of tunnel compression pressures to levels high enough to impair MN blood flow. For example, placing the hand on a computer mouse increase the CT pressure to 16-21 mmHg, while using the mouse to point and click increased the CT pressure up to 28 to 33 mmHg. [References](#)

*How can I prevent carpal tunnel and other entrapment syndromes?*

When it comes to joint health "motion is lotion". Getting regular movement to all joints in the body on a regular basis enhances blood flow and muscle range of motion. Swimming, yoga, and functional movement exercises train the body to function optimally. It is also advised to regularly visit your AK doctor so they can evaluate your spine and joints to prevent these issues as well.

*Is carpal tunnel surgery in my best interest?*

It is important to understand that open carpal tunnel release surgery has a long-term consequence of wrist instability. The tendon that wraps around our wrist bones is necessary for strength and stability of the wrist and this tendon is cut during surgery. This can impair wrist stability in ways that can impede performance and enjoyment of many activities in work, hobbies, and sports that require wrist strength and stability. Consider a trial of conservative, non-surgical therapies first.

*Other than surgery what treatments are available for CTS?*

Non-surgical therapies include manual therapies like chiropractic and massage. These help to open up the space in the joint and relieve the pressure that causes pain. Other treatments to consider are diuretics, including B-6, acupuncture and various anti-inflammatory therapies. AK treatment is very effective for treating carpal tunnel syndrome successfully and referral for surgery due to AK-directed therapy being ineffective is very rare.

*How do I know for sure if my symptoms are related to an entrapment syndrome?*

Nerve conduction studies test how fast the signals pass through the nerve. These are considered the gold standard for diagnosing entrapment syndromes including CTS. These tests are very useful in seeing if the nerve signal is being impeded in any way. They can test before and after major joints (where the compression is most likely) to determine where the problem is. Your doctor skilled in applied kinesiology has the advantage of manually testing the muscles that are before and after these joints. This gives you the upper hand because they can determine the best way to treat your specific issue by asking your body.