

The Cause and Treatment of Common Hand Problems

By Carl B. Weiss, M.D.



Many people are familiar with common hand conditions. They may even know the symptoms and certain ways to treat the problems. However, I find that very few people actually understand what is happening inside their body to produce a given problem or set of symptoms. Hopefully, this article will give you a clearer picture of the anatomy and pathophysiology involved, while briefly discussing causes and treatment options.

First of all, carpal tunnel syndrome (CTS) is a very common condition that is often attributed to overuse of the hands or wrist, although this has never been conclusively proven for repetitive tasks such as typing. Vibration injury (such as from using a jackhammer) has been shown to predispose someone to the development of CTS. Diabetes, hypothyroidism, and pregnancy are also associated with CTS.

The symptoms of carpal tunnel syndrome are tingling, numbness, and burning in the thumb, index finger, long finger, and one-half of the ring finger. An individual patient may have any combination of these symptoms in any or all of the fingers listed. The burning feeling can occasionally run up to a patient's elbow or shoulder. As the condition progresses, there is a tendency

to drop small objects, and there may be difficulty performing certain activities of daily living such as buttoning a shirt.

What causes these uncomfortable symptoms, which often cause people to lose sleep at night while they try to stop their fingers from tingling and burning? Carpal tunnel syndrome describes the compression of the median nerve as it passes through a tunnel from your forearm to your hand. This compression can be caused by anything that causes the contents of the tunnel to become larger, such as the swelling and water retention associated with pregnancy. The nerve is the softest structure in the carpal canal, so it is squeezed the most if any other structure swells.

The median nerve supplies sensation to the above-mentioned fingers, and it also controls some of the small muscles that move your thumb. People with severe, longstanding carpal tunnel syndrome can sustain irreversible damage to the nerve, thereby permanently losing function of the structures it supplies.

Treatment options for CTS include night splinting, stretching exercises, corticosteroid administration (orally or by injection directly into the carpal tunnel),

and surgical release of the transverse carpal ligament, which forms the "roof" of the tunnel. Vitamin B6 has been shown to be helpful for those who have a deficiency of this essential vitamin.

Another common problem found in the wrist is a painful condition called deQuervain's Tendonitis. This inflammation of the tendons (located in a tight compartment on the same side of the wrist as the thumb) is very common in new mothers, probably due to the stress on the area from repeatedly picking up their newborn. The pain can be excruciating, and it can severely limit the use of the sufferer's hand.

Treatment options include splinting and oral anti-inflammatory agents, but the quickest pain alleviation and return to normal functioning are often achieved by injecting the painful compartment with cortisone. If up to three injections fail to give lasting relief, surgical release of the offending compartments gives the tendons the room they need to function without pain.

The next hand problem I would like to discuss concerns people who complain that their fingers get stuck in a bent position, and then snap when they are straightened. This is called "trigger finger," and is a tendon problem. Tendons are the rope-like structures that connect muscle to bone. Many of the muscles that move your fingers are located in your forearm and are connected to your fingers by tendons.

Trigger finger occurs when a tendon that bends the finger has trouble fitting through the tight sheath that holds it to the bone near the base of your finger in the palm. Symptoms may be most pronounced in the morning. No one really knows why trigger finger develops in one person and not in another, or in one finger and not in

another. However, as with carpal tunnel syndrome, conditions such as diabetes and thyroid disease increase your likelihood of getting one or more trigger fingers.

Treatment consists of cortisone injection, which works well in the majority of patients. However, diabetics tend not to respond as well as others. For those who do not respond to non-surgical treatment, operative treatment is available. This treatment involves dividing the tight pulley, which is not needed when all other pulleys are intact.

Patients frequently come to me complaining of a vague pain at the base of the thumb, which they say is occasionally quite sharp. It is aggravated by activities such as attempting to open a jar or by pinching problems, such as difficulty turning a key in a lock. These symptoms usually point to basal joint arthritis, a wearing out of the smooth articular cartilage at the base of the thumb metacarpal. This condition often affects women in their 50s, but it is not

that unusual in younger patients or men. The cause of basal joint arthritis (as with osteoarthritis in most areas of the body) is multifactorial. Genetics almost certainly play a large role. Injury to the thumb can also cause or aggravate this problem.

The diagnosis of basal joint arthritis is made by clinical evaluation and x-ray. Treatment options follow a now-familiar range of choices: splinting and medication, cortisone injection, and surgical intervention if all else fails.

I have covered a few of the most common hand problems seen in my practice. Of course, there are many other causes of hand, wrist, and forearm pain that we cannot cover here. If you are having a problem with your hand or wrist, see your doctor for evaluation. If his treatment doesn't help, or if he feels that you need the services of a specialist, ask for a referral to a hand specialist. Alternatively, you can find a hand surgeon near you, as well as information on many hand conditions, by

going to www.assh.org, the official website of the American Society for Surgery of the Hand.



Dr Carl Weiss received his orthopaedic training at the State University of New York at Stony Brook. He then completed the Joseph Boyes hand surgery fellowship in Los Angeles, California. After practicing hand and ortho-

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