

# Carpal Tunnel Syndrome

Ignoring the symptoms  
can end your career



In my work with drummers and percussionists, and in my capacity as the PAS Health & Wellness Committee Chair, I have found



that Carpal Tunnel Syndrome (CTS) is one of the most predominant injuries drummers and percussionists face. Not only is it very widespread, but it is also one of the most difficult to heal because musicians deal with the pain much too long before getting care.

Even at the point at which proper healing is possible, the treatment is long and fairly painful. Most musicians (and people in general) don't have the patience to complete the treatment, and/or they will not make the changes needed to stop the continued irritation to the carpal tunnel.

This article should answer most of your questions on CTS. It contains material from *The Drummer/Percussionist Injury Book* (soon to be published) that will allow you to understand the basic concepts of CTS, and learn some simple ways to spot it and take care of it.

By Dr. Darin Workman

### How do you know if you have Carpal Tunnel Syndrome?

Most injuries get to the point of pain and eventually to the point of no return because the patient either ignores the symptoms or cannot recognize that something is wrong. The symptoms for Carpal Tunnel Syndrome begin far before the pain arrives. They usually manifest as minor tightness in the fingers and forearms, and later progress to fatigue in the wrist area.

Since these are common feelings in those areas, the patient usually ignores them, thinking that they will go away. If you rest for a while and stretch the forearm muscles, the symptoms most likely will relieve. However, most people continue the actions that irritate the injury and become callused to the pain. As the injury increases, so does the patient's ability to ignore the symptoms, until the body is unable to do the movement at all.

Although the more obvious symptoms of CTS are many, varied, and not always consistent, the usual appearance consists of numb, tingling, or achy feeling in the hand and/or wrist (usually thumb and first finger). In my experience, the symptoms appear stronger in the morning, during and/or shortly after use of the wrist. Many patients have told me that these pains go on for months at a time before they ever seek treatment.

### What is Carpal Tunnel Syndrome?

Carpal Tunnel Syndrome is named for the part of the body that becomes injured. The wrist area has a great amount

of movement. This is possible because it consists of eight bones arranged in two rows that move freely in relation to each other. These bones are called "carpals" and are about the size of peanuts (but they have varying shapes).

On the palm side of the wrist are a series of tunnels through which run the tendons of the fingers and thumb. The tunnels provide direction, security, and lubrication for the tendons as they make their way around whatever angle the wrist is operating at during that time. They are very important to the smooth and solid operation of the fingers.

The tendons are attached at one end to the tips of the fingers and thumb, and at the other end to a bone near the elbow (the side closest to the body). The forearm muscles contract and relax in order to move the tendons, which move the fingers.

### What happens in Carpal Tunnel Syndrome?

CTS occurs when there is any irritation of the median nerve (or other nerves) as it goes through the carpal tunnel. This can happen for a myriad of reasons, but the most common is movement of the wrist or tendons through the wrist area in a way that causes increased resistance or rubbing on the tendon and/or wall of the tunnel.

The body's response to the irritation of the carpal tunnel area is to send more fluids there—which causes increased swelling. Of course, the swelling of the carpal tunnel area leaves less and less room for the median nerve to squeeze through the tunnel, causing uncommon pressure on the nerve. When a nerve has pressure applied to it, it gets irritated and screams out in pain. The pain is a sign to us that something is wrong and needs to be corrected.

By stopping the activity, the swelling subsides in conjunction with the pain. However, the movement that caused the irritation and swelling must be changed, or the injury will return when the movement returns.

Usually the cause is tied to positions of the wrist that cause the tendons to rub against the tunnel, and/or tightness in the muscles causing the tendons to rub harder against the tunnel when it operates. Constant, repetitive movements in that way increase the chances and speed of the occurrence of Carpal Tunnel Syn-

drome. Overactive or inefficient tendon movement through the tunnels causes heat, swelling, and increased pressure. This will further increase the irritation and injury.

### What am I doing to cause CTS?

Most people that approach me with this problem are more concerned with alleviating the pain than they are with alleviating the cause of the pain. It seems to me that anyone considering a lengthy career in music would want to eliminate anything that could stop him or her from playing. Why spend all of those years practicing just to find that when you are hitting your musical peak, a physical ailment (one that could have been easily prevented) will end your career?

Make no mistake about it; this injury can be a true career ender. I am constantly getting e-mails from frustrated musicians who cannot play any more because the hands and fingers will no longer operate.

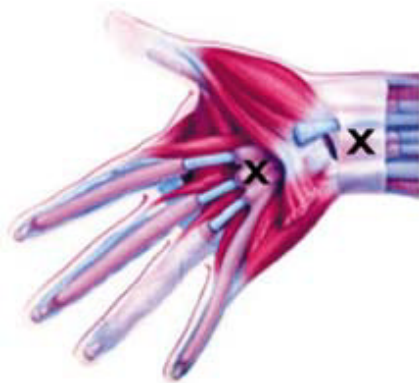
Almost always, the problem causing CTS stems from improper playing technique. I strongly believe that anyone who listens carefully to his or her body will end up playing with good technique. However, that technique can be learned more quickly and smoothly when musicians listen to those who are further down the road than they are. This is the purpose of a good teacher.

Commonly, players can get by with glitches in their technique for some time, but when there is a sudden increase in intensity (hitting harder, faster, etc.), duration (long practice sessions or sudden increase in play time per week), or frequency (playing without enough down time between sessions) of playing, the weaknesses become magnified, and the injury sets in fast.

In other words, this injury, as most others, comes from long-term misuse (microtrauma) of the body area for a period of weeks or months. Other causes are sudden increase in speed, stick/mallet size, tighter heads, change in instrument setup, etc. There are many factors; that is why a good teacher is paramount.

### Can I treat this injury myself?

Almost all injuries percussionists and drummers encounter can be resolved with a little self-help. However, problems that go unattended for a long time require treatment from a doctor. If we



Tendons that operate the fingers go across the wrist on the palm side through tendon sheaths ("X" on the left) and "carpal tunnels" ("X" on the right).

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catch the symptoms early, quick and complete resolution is possible.

Most people are concerned with immediate relief. The danger is that once you remove the reminder that there is an injury (i.e., the pain), the musician sees no need to correct the problem. At the risk of encouraging the patient to avoid the problem, following are a couple of easy ways to alleviate the pain temporarily. This will allow you to play while the problem is being resolved.

- Ice the wrist (on the skin) for 15 minutes on and 15 minutes off in an elevated position (above the heart).
- Take aspirin or ibuprofen as directed on the package.
- When practicing, rest 10 minutes of each hour.
- Massage may be done on the wrist flexor muscles to lengthen them, decreasing pressure on the tendons and the tunnel.

Prevention is the best way to treat any injury, for it is better to have never injured the body than to have to heal damage. Any damage done to the body will leave its mark, usually in the form of a scar. This mark is a sign of weakness and possible damage in the future.

As mentioned above, for percussionists, improper technique is at the root of almost every injury. For this specific injury, I have noticed that most percussionists use too much wrist movement and forget to incorporate the fingers, elbows, and arms in movement of the mallet or stick.

Try using more finger and arm movement with less wrist movement. Also consider using more wrist rotation. Do half of your speed, and half your length of playing for three days in order to rest the wrist and allow the swelling to reduce and the healing to get a good start.

Finally, let the sticks do more of the work; don't try to control them throughout the entire stroke. Flip the stick or mallet at the top of the stroke and let it

swing, bouncing independent of your hand (like dribbling a basketball). You should not be gripping the stick or mallet tightly at the instant that it strikes the instrument.

## STRETCHES

Stretches are very important to relieving an injury, but they must not be done too early. So much emphasis has been put on stretching in the past few years that some have begun to see stretching as a cure rather than the prevention measure that it is.

Stretching must be done in the proper frame of mind. It is not something you do *to* the body; it is something you *allow* the body to do. All stretches must be done by relaxing and allowing the muscles to stretch.

If you try to force the muscles to stretch, their immediate reaction is to protect themselves from tearing by pulling back. This can quickly turn into a tug-of-war between you and your muscles, and they will not stretch. This is why many people stretch and stretch without any positive results, and sometimes even injure themselves as a result.

Stretches are most effective when the body is warmed up. This means you should first do some mild exercise of the area to be stretched prior to beginning. For example, if you are stretching the hands, do some general movements of the hands, arms, and shoulders until the muscles get warm and loose (usually just before you begin to perspire). Try some basic rudiments; singles and doubles are best.

If you are paying attention to the body, you will notice the area warming up as the blood is pumped into it. Taking a shower or sitting in hot water prior to stretching is not as effective, but still good.

If you suffer from CTS, the following stretches may help. Do the stretches outlined below four times per day.

## CARPAL TUNNEL SYNDROME QUICK REFERENCE

### SYMPTOMS

Numb, tingling or achy feeling in the hand and/or wrist (usually thumb and first finger), worse over weeks or months and during or shortly after repeated stressful motions of the hand or wrist.

### DESCRIPTION

Irritation of the median nerve as it goes through the carpal tunnel. Overactive or inefficient tendon movement through the tunnels causes heat, swelling, and increased pressure.

### CAUSE

Commonly from long-term misuse (microtrauma) of the wrist for a period of weeks or months. Other causes are: sudden increase in speed, practice time, stick size, tighter heads, change in instrument setup.

### IMMEDIATE RELIEF

Ice the wrist for 15 minutes on and 15 minutes off in an elevated position (above the heart). Take aspirin or ibuprofen as directed on the package. When practicing, rest 10 minutes of each hour. Soft tissue work may be done on the wrist flexor muscles to lengthen them, decreasing pressure on the tendons and the tunnel.

### PREVENTION

More finger and arm movement with less wrist movement. Also consider using more wrist rotation. Let the sticks do more of the work; don't try to control them. Flip the stick and let it swing, bouncing independent of your hand (like bouncing a basketball). Do stretches four times per day; also try shoulder shrugs.

### IF NO RELIEF

If you are not feeling relief within two weeks of the above treatment, see your doctor for evaluation.

### PROGNOSIS

If you catch the injury early (within four weeks), the prognosis is excellent, but by 12 weeks and after, the chances for full recovery decrease.

### OTHER POSSIBILITIES

Carpal Tunnel Tendonitis (pain when wrist is straight during resisted flexion); Ulnar Nerve Entrapment (tingle/numbness, mostly in the pinkie finger).

### **“Hands over head” wrist stretches**

This set of stretches is for general loosening of the muscles of the arms. If done correctly, they will loosen and warm up the muscles that operate the wrists and fingers. By positioning the hands above the head, you get a better stretch in the arms and hands.

With both of the following stretches, you can reach other muscles by moving the hands out to each side slightly and repeating the stretch in the same manner as above.



Rotate the arms and wrists (20 rotations at one per second) in a relaxed way.



Bend wrist forward and backward without forcing it (20 times, one way per second). Repeat each wrist.



Rotate wrist clockwise and counterclockwise in a relaxed way (20 rotations, one per second).

### **Hand flexors**

Continue to lower the hands with each repetition until the hands feel limber and comfortable. As your hands go lower, the palm gets further from the wall; this allows better stretching of the finger muscles. If you feel pain in the wrist, back off or stop.



Place palms on the wall about chest height, gradually leaning on them while relaxing. Hold 20 seconds (should feel stretch).



Drop hands to the sides and lightly shake them to relax the muscles.



Place hands on the wall six inches lower than previous position and repeat the stretch.



### Hand extensors

Raise the hands with each repetition of this stretch until the hands feel limber and comfortable. Do not push hard on the hands or you may injure the wrist. Just relax the wrists and allow enough pressure to stretch the muscles. If you feel pain in the wrist, back off or stop.



Place back of hands on the wall about chest height, gradually leaning on them while relaxing. Hold 20 seconds (should feel stretch).



Drop hands to the sides and lightly shake them to relax the muscles.



Place hands on the wall six inches higher than previous position and repeat the stretch.

### EXERCISES

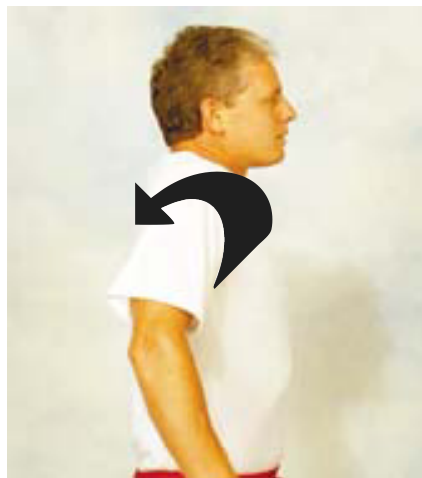
You may also want to try shoulder shrugs as shown below.

#### Shoulder shrugs

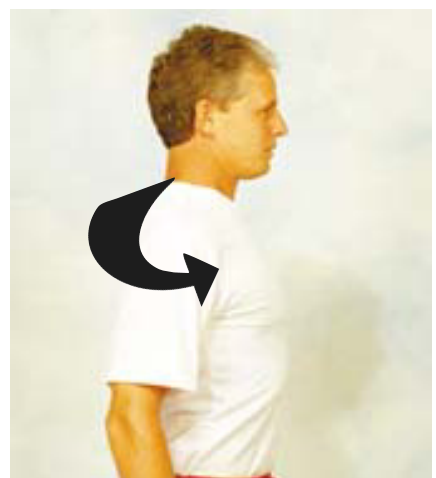
The muscles in the shoulders and neck are important in securing the arms to the body so that the hands can pull, push, move, etc. If they are not operating properly, the arms and hands lose a great amount of strength, coordination, and endurance. These stretches are designed to restore circulation and movement to the stabilizers of the arms and shoulders.



Pull both shoulders to the ears, hold tight for seven seconds, then relax for 30 seconds while shoulders are dropped.



Drop and relax the shoulders completely, then roll them up and back slowly for 30 seconds (one roll per two seconds).



Rolling of the shoulders should be done slowly and smoothly, without forcing them.

### What if the injury doesn't get better, or gets worse?

It is common for an injury to be more painful prior to getting better for this reason: If something is hurt, it doesn't want to be touched. But if you don't make changes in it, it will not change. Carpal Tunnel Syndrome usually takes a little while to begin to improve, so be patient for a week or two. However, if you do not feel some relief within two weeks after starting the above treatment, see your doctor for evaluation. If it is going to improve from the above treatment, you will feel a difference within two weeks.

If you catch the injury early (within four weeks) the prognosis is excellent, but by twelve weeks and after, the chances for full recovery decrease because (like concrete) the longer muscles stay tight, the more solid and immovable they get.

### Other possibilities

Different injuries can sometimes be confused with each other. What we think is Carpal Tunnel Syndrome may in fact

be something else. So, I thought I would include a couple of injuries that closely resemble Carpal Tunnel Syndrome:

**Carpal Tunnel Tendonitis:** This usually manifests pain when the wrist is straight and pressure is applied to the back of the hand to try to bend it. The typical Carpal Tunnel Syndrome will not have pain in the above situation.

**Ulnar Nerve Entrapment:** Both this and Carpal Tunnel Syndrome have tingling in the fingers, but Carpal Tunnel Syndrome is usually in the fingers on the thumb side, and this one is usually mostly in the pinkie finger.

If you have questions or concerns you should ask your doctor. This article does not take the place of a doctor's advice.

*Illustrations by Dr. "Dutch" Workman.  
Carpal tunnel artwork used by permission of  
McNeil Pharmaceuticals.*

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ries. He holds a Bachelor of Human Biology degree and is a Certified Chiropractic Sports Physician. He has authored numerous injury and prevention articles and led workshops over the years, and is currently finishing a book on ergonomics, and prevention and treatment of drumming injuries. Workman is Chair of the PAS Health and Wellness Committee and is a member of the Performing Arts Medical Association. As a drummer/percussionist of over twenty-five years, he continues to be active in performing and teaching. He can be reached by e-mail at [drumminjuries@juno.com](mailto:drumminjuries@juno.com).

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Sitting from left to right: Martin Cohen - Chairman and Founder of Latin Percussion; Jim Panenszky - Professor of Percussion, Crane School of Music, SUNY, Potsdam, NY; Johnny Lee Lane - Professor, Eastern Illinois University, Charleston, IL; Dan Moore - Professor, University of Iowa, Iowa City, IA.



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