

Carpal Tunnel Syndrome

Repetitive strain injuries, of which carpal tunnel syndrome (CTS) and tennis elbow are the best known, afflict athletes, musicians, computer users, and workers who perform the same motion for extended periods of time. Unfortunately, some common nursery tasks, such as extracting container seedlings or grading bareroot seedlings, have led to an outbreak of repetitive strain incidents in forest and conservation nurseries in recent years. CTS in particular has been the cause for many injuries and resultant Worker's Compensation Claims. In fact, these claims have been so numerous and costly that some nurseries have had to convert from salaried employees to contract workers in the packing shed.

Exactly what is carpal tunnel syndrome? The carpal tunnel is a 2-3 cm long canal through the wrist through which 9 finger tendons and the median nerve pass (**Figure N**). CTS is a repetitive strain injury caused by compression of the median nerve. Symptoms include a numbness and/or burning pain in the hand and wrist, as well as the thumb and first three fingers. These symptoms are most noticeable at night. In extreme cases, permanent nerve damage occurs, causing irreversible muscular weakness and wasting.

Everyone seems to agree on what the symptoms for CTS are, and what causes them; but that's where the agreement ends. Specialists disagree on the best way to diagnose CTS, what causes it, and how to treat it.

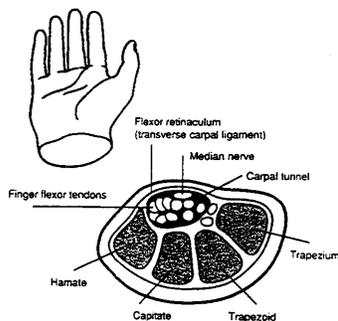


Figure N: Carpal tunnel syndrome results from pressure on the median nerve which passes through the wrist (from Oliver and Rickards)

Diagnosis—Diagnosis of CTS is made by a combination of symptoms, patient history, and diagnostic testing. Nerve conduction studies (NCS) can detect a slowing of the sensory conduction velocity through the median nerve, and these tests are considered by many specialists to be the best single diagnostic factor. Unfortunately, the National Institute for Occupational Safety and Health (NIOSH) of the US Department of Health and Human Services does not require an abnormal NCS for a compensable diagnosis, and some researchers have concluded that many CTS cases have been misdiagnosed in the past. They point out that many doctors rely too much on subjective symptoms, rather than objective test results, and therefore misdiagnose transient musculoskeletal aches and pains as CTS. In studies of Workers' Compensation Claims, they found a major discrepancy between subjective CTS symptoms and NCS tests—50% of the patients in one study did not have an abnormal NCS.

Causes and Risk Factors—There is also controversy over the causes of CTS and the associated risk factors. One study found that up to 47% of all CTS cases could be attributed to workplace factors. Some of these risk factors include doing tasks involving hand and wrist movement which have high repetition and force, those that require awkward wrist positions or exposure to vibration. Other researchers conclude that starting a new job or using hands vigorously can cause CTS symptoms, but question whether the occupation actually causes the compression of the median nerve. They have found that individual patient factors, such as body mass index (obesity), lack of avocational physical exercise, age, and the wrist depth-to-width ratio are the strongest predictors of who will develop CTS.

Prevention and Treatment—Finally, CTS specialists and researchers disagree over how to prevent and treat this disorder. Many doctors traditionally have recommended workplace modification programs and splinting of the arm or wrist. For example, work stations should be adjusted so that the elbows aren't elevated above mid-torso height, and the shoulders should not be flexed or abducted more than 60 degrees. Workers also are told to use a power grip instead of a pinch grip when performing tasks. Other specialists state that

"there is no electrophysiologic evidence indicating that these ergonomic interventions reverse the disease process which leads to CTS". They have concluded that the most effective way to prevent CTS is to encourage workers to reduce their risk factors by health education and workplace wellness programs. In particular, they recommend regular aerobic exercise, weight loss, and good nutrition.

Sources:

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Follow-Up:

Both of these health and safety concerns will be addressed at the Western Forest and Conservation Nursery Association meeting in Kearney, Nebraska, this coming August. Dr. Arvind Padhye, a mycologist at the Centers for Disease Control in Atlanta, Georgia, will talk about sporotrichosis; and Dr. Deborah Mowry, a local physiatrist, will present the very latest information on CTS and other repetitive motion injuries. See page three of this issue for meeting contacts. For those unable to attend, the presentations will be captured in the National Nursery Proceedings.

Editorial

Making Meetings Efficient

Meetings are a valuable management tool for improving work productivity and increasing networking between nursery workers. Like everything, however, you can have too much of a good thing, and meetings must be managed or they can quickly get out of hand. Kehoe (1993) states that meetings are "the most abused form of company communications".

Here are a few tips from the pros:

☞ **Scheduling**—Keep meetings as short as possible. Weekly staff meetings should take only 15-30 minutes, and single topics at decision-making meetings can be solved in less than an hour. In general, meetings are most effective when they are no more than 1.5 hours in length.

☞ **Purpose**—Every meeting should have a well-stated purpose, or maybe you don't need one. There are many good reasons for meetings, such as information exchange, plans for the next crop,

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"What's this about your refusing to attend another meeting today because you want to "get some work done" ??

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