

# Orthopedic NEWS

From the Hand Service, Department of Orthopedic Surgery at Beth Israel Medical Center

*Orthopedic News* is a public service initiative sponsored by the Department of Orthopedic Surgery at Beth Israel Medical Center, to provide information regarding prevention and treatment of musculoskeletal injuries.

Each newsletter will cover a specific topic written by the experts in that particular field on our faculty here at the Phillips Ambulatory Care Center. For your convenience, our team of physicians with their area of specialty is listed on the back page of this newsletter.

We hope that you find *Orthopedic News* interesting and helpful. This issue will cover carpal tunnel syndrome and its treatment. For more information on carpal tunnel syndrome, visit the American Academy of Orthopedics Web site at <http://orthoinfo.aaos.org>

## Content provided by:



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## Carpal Tunnel Syndrome

Carpal tunnel syndrome (CTS) is a condition which effects up to 10% of the general population but is often misunderstood. People who develop wrist pain from computer usage often believe that they have carpal tunnel syndrome. But **most wrist pain from computer usage is caused by tendonitis, not carpal tunnel syndrome**, and many patients who develop carpal tunnel syndrome do not work with computers. In fact, construction workers, dental hygienists, meat cutters, and cashiers are more likely to develop carpal tunnel syndrome than computer operators. Other factors such as obesity, female gender, increasing age, and smoking may also place a patient at risk for developing carpal tunnel syndrome.

Carpal tunnel syndrome is caused by increased pressure on the **median nerve**. The median nerve crosses the wrist joint and then branches in the palm of the hand to the provide sensation to the fingers. The median nerve also sends electrical signals to one of the muscles in the hand which helps move the thumb.

At the wrist, the median nerve travels through a tight space called the carpal tunnel. Nine tendons that pass from the forearm to the hand (allowing for finger motion) also pass through the carpal tunnel. Carpal tunnel syndrome occurs when there is increased pressure in the carpal tunnel. The increased pressure on the nerve interferes with the way it works, resulting in numbness, tingling and pain felt in the hand and the fingers.

The exact cause of carpal tunnel syndrome is usually unknown. Increased pressure in the carpal tunnel may be due to either swelling of the lining of the tendons that pass through the carpal tunnel with the nerve, or increased fluid within the carpal tunnel itself. **Carpal tunnel syndrome is very common during pregnancy** because the expectant mother retains fluid. After delivery, when the mother's fluid balance returns to normal, the symptoms of carpal tunnel resolve. Other factors which can increase the pressure in the carpal tunnel include wrist fractures, dislocations, and arthritis. Keeping the wrist bent for long periods of time can also increase the pressure on the nerve. People often sleep with their wrist in a flexed position which is why they wake up with numbness, tingling, and pain at night. Diabetes, thyroid disorders and rheumatoid arthritis are also associated conditions that may contribute to the development of carpal tunnel symptoms.

Symptoms of carpal tunnel syndrome include **numbness, tingling and/or pain in the hand**. Some patients with carpal tunnel syndrome will also complain of wrist pain or pain that travels up the arm to the shoulder. Numbness and pain at night or upon waking is a common complaint. Patients may notice a weaker grip and/or the tendency to drop things. In severe cases, patients will have permanent loss of sensation and the muscle at the base of the hand will shrink resulting in significant hand weakness.

Carpal tunnel symptoms may be relieved by reducing the pressure on the median nerve. This may be accomplished by treating associated medical

conditions, modifying activity, or keeping the wrist splinted in a straight position. Wearing splints at night often relieves pain that interferes with sleep. Oral anti-inflammatories (such as ibuprofen) or steroid injections may be used to decrease the swelling of the tendons, thereby decreasing pressure on the nerve. If symptoms are severe, or do not improve, surgery may be needed to make more room for the nerve.

In severe cases, or in patients who have had symptoms for a long period of time, the symptoms of carpal tunnel may not resolve completely even after surgery. Therefore **it is important to be diagnosed early** and followed closely by a qualified physician.

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