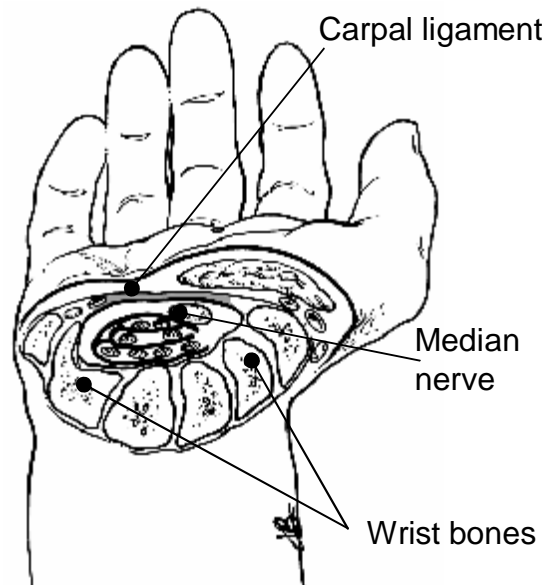


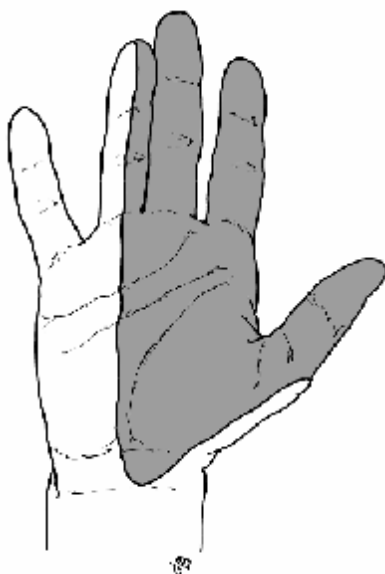
**CARPAL TUNNEL SYNDROME** is a condition that occurs when pressure is put on the median nerve in the wrist, causing numbness in the hand and fingers. The median nerve passes through a firm tunnel in the wrist, called the carpal tunnel, made up of the wrist bones and a tough ligament that forms the top of the tunnel (Fig. 1). After it exits the tunnel, the nerve goes into the hand and fingers. Several tendons – the structures that connect muscle to bone – also pass through the carpal tunnel. Anything that increases the pressure inside this tunnel can pinch the median nerve, causing altered feeling in the hand and fingers and causing wrist pain.

**Causes.** Many conditions can cause pressure to build up in the carpal tunnel and pinch the median nerve. For example, the nerve can be pinched when tendons in the carpal tunnel become inflamed and swollen. Medical conditions such as hypothyroidism, rheumatoid arthritis, gout, and diabetes also can play a role. Fluid that builds up in the wrists during pregnancy can cause carpal tunnel syndrome as well. Often, the ligament is simply too tight, and we do not know the reason.



**Fig. 1** The median nerve passes between the wrist bones and carpal ligament, which form the carpal tunnel.

**Symptoms.** Carpal tunnel syndrome causes pain, burning, or numbness in the thumb and index, middle, and ring fingers of the affected hand (Fig. 2). These symptoms are frequently worse at night. You might lose fine hand control or grip strength and begin to drop things more easily. If you have an advanced case, you might completely lose the feeling in the hand or fingers. Your hand or fingers may feel swollen.

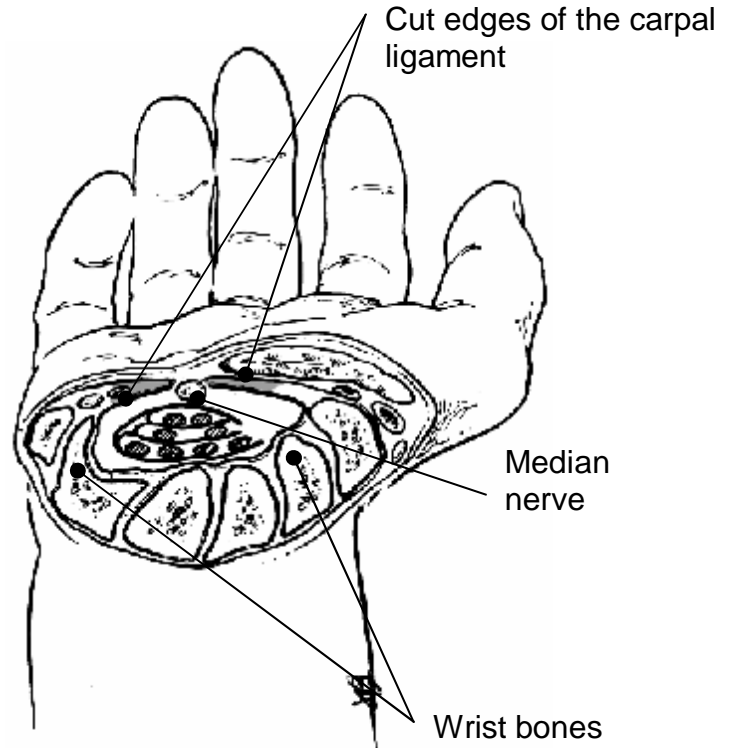


**Fig. 2** Area of pain, numbness and burning

**Diagnosis.** The doctor will ask you to explain your symptoms and will examine you. X-rays will usually be helpful in your evaluation. Electrodiagnostic studies, including nerve conduction study (NCS) and electromyogram (EMG), are essential in establishing the diagnosis and treating carpal tunnel syndrome. With these tests, the doctor can find out if the median nerve is being pinched or determine if the nerve is being affected at another location, for example the neck. These tests can also determine the severity and can check to see if other nerves are involved. However, it is possible to have carpal tunnel syndrome even if your nerve studies are normal.

**Treatment.** Except in the most severe cases, non-surgical therapy usually is indicated first. Wearing a splint on the wrist, taking anti-inflammatory medicines such as aspirin or ibuprofen, or having an injection of anti-inflammatory medicine into the carpal tunnel may relieve the symptoms in most people. Taking vitamin B6 also may help.

Sometimes surgery is needed to correct the problem. During surgery, the ligament on top of the carpal tunnel is released to relieve pressure on the median nerve (Fig. 3). This can usually be done on an outpatient basis, which means you do not have to spend the night in the hospital. After surgery, you wear a splint on the operated wrist for 1 to 2 weeks. The time needed for the symptoms of carpal tunnel syndrome to go away and the hand and wrist to return to normal differs for each person. Surgery is fairly predictable at relieving symptoms of numbness and tingling as well as nighttime pain.



**Fig. 3** Surgical release of the carpal ligament

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