Carpal Tunnel Syndrome

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En Español (Spanish Version)
More InDepth Information on This Condition

Definition

Carpal tunnel syndrome is a nerve disorder of the hand caused by compression of the median nerve. The median nerve gets squeezed inside a narrow passage in the wrist called the carpal tunnel. This nerve provides feeling to the thumb, index and middle fingers, and half the ring finger.

Carpal Tunnel Syndrome

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Causes

Carpal tunnel syndrome is created by pressure on the median nerve caused by the narrowing of the carpal tunnel. The narrowing can be caused by many factors including:

- Swelling of tissue in carpal tunnel due to injury or fluid changes in the body
- Hereditary narrow carpal tunnel
- Tumors (rare)

Risk Factors

A risk factor is something that increases your chance of getting a disease or condition.

Risk factors for carpal tunnel syndrome include:

- Sex: female
- Advancing age
- Obesity
Excessive alcohol consumption

Smoking

Activities with repetitive hand motions:
- Certain sports
- Sewing
- Playing musical instruments
- Typing
- Assembly tasks

Water retention from:
- Heart failure
- Kidney problems

Wrist injury:
- Burns
- Broken bones
- Compression or crush injuries

Arthritis

Diabetes

Raynaud's disease which impairs blood flow in the hands

Hormone-related conditions:
- Pregnancy
- Breast-feeding
- Menopause
- Hypothyroidism
- Cushing's disease
- Excess growth hormone

Medications:
- Birth control pills
- Cortisone pills or shots
- Some high blood pressure drugs

Symptoms

Carpal tunnel syndrome causes symptoms in one or both hands or wrists. Symptoms may include:

- Tingling, burning, or numbness, especially in the thumb and index or middle fingers
- Pain or numbness that worsens with:
  - Wrist, hand, or finger movement
  - Sleep (symptoms may wake you)
- Hand stiffness or cramping that gets better after:
  - Shaking the hand
  - Waking up in the morning
- Weakness or clumsiness of the hand
  - Loss of grip strength
  - Difficulty making a fist
  - Frequently dropping things
- Pain that moves up the arm

Diagnosis

The doctor will ask about your symptoms and medical history. The doctor will also examine your arms, wrists, and hands. The physical exam will include tests of strength, sensation, and signs of nerve irritation or damage.

Other tests may include:
Electrodiagnostic exam (EMG)—includes nerve conduction
MRI scan—a test that uses magnetic waves to make pictures of structures inside the body, in this case the neck (cervical spine)
X-ray—a test that uses radiation to take a picture of structures inside the body, especially bones

Treatment

It is important to correct whatever is causing the carpal tunnel syndrome. Sometimes making simple changes in your workplace or home may help relieve symptoms.

Treatment may also include:

Rest, Ice, Elevation, and Exercises

- Rest the wrist by keeping it straight and decreasing activities that worsen pain.
- Gently apply ice packs to the area.
- Elevate the hand above the heart to reduce swelling.
- Do exercises as directed by your healthcare provider.

A Wrist Splint

A splint will prevent extreme movements of the wrist. It is most effective when worn at night and can help avoid waking up with symptoms.

Medications

- Pain relievers like aspirin or ibuprofen
- Injection of cortisone into the carpal tunnel

Surgery

Surgery may be needed if symptoms are severe or continue after trying other treatments. The most common procedure is the carpal tunnel release.

If you are diagnosed with carpal tunnel syndrome, follow your doctor's instructions.

Prevention

You may reduce your chances of getting carpal tunnel syndrome by taking these steps:

- Minimize repetitive hand movements when possible.
- Alternate between activities or tasks to reduce the strain on your body.
- When using your wrists, keep them straight and let your arms and shoulders share the stress.
- Use your whole hand or both hands to pick up an item.
- Avoid holding an object the same way for a long time.
- If you work in an office, adjust your desk, chair, and keyboard so you are in the best possible position:
  - Back straight
  - Feet flat on the floor or resting on a footrest
  - Knees level with or slightly lower than your hips
  - Shoulders in a neutral position, not forward or back
  - Elbows bent at a 90 degree angle
Forearms parallel to the floor and wrists straight
Take breaks at least once an hour to:
- Rest or shake your hands
- Massage the palms and backs of your hands
Get regular aerobic exercise such as walking or swimming.
Cut down on caffeine and smoking, which may reduce blood flow to your hands.

RESOURCES:
American Academy of Orthopedic Surgeons
http://www.aaos.org/
American Association of Neurological Surgeons
http://www.aans.org/

CANADIAN RESOURCES:
Canadian Centre for Occupational Health and Safety
http://www.ccohs.ca/
Physical Therapy.ca
http://www.physicaltherapy.ca/

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