



Carpal Tunnel Syndrome

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Topic Overview

What is carpal tunnel syndrome?

Carpal tunnel syndrome is numbness, tingling, weakness, and other problems in your hand because of pressure on the [median nerve](#) in your wrist.



The median nerve and several [tendons](#) run from your forearm to your hand through a [small space in your wrist called the carpal tunnel](#). The median nerve controls movement and [feeling](#) in your thumb and first three fingers (not your little finger).

What causes carpal tunnel syndrome?

Pressure on the median nerve causes carpal tunnel syndrome. This pressure can come from swelling or anything that makes the carpal tunnel smaller. Many things can cause this swelling, including:

- Illnesses such as [hypothyroidism](#), [rheumatoid arthritis](#), and [diabetes](#).
- Making the same hand movements over and over, especially if the wrist is bent down (your hands lower than your wrists), or making the same wrist movements over and over.
- Pregnancy.

What are the symptoms?

Carpal tunnel syndrome can cause tingling, numbness, weakness, or pain in the fingers or hand. Some people may have pain in their arm between their hand and their elbow.

Symptoms most often occur in the thumb, index finger, middle finger, and half of the ring finger. If you have problems with your other fingers but your little finger is fine, this may be a sign that you have carpal tunnel syndrome. A different nerve gives feeling to the little finger.

You may first notice symptoms at night. You may be able to get relief by shaking your hand.

How is carpal tunnel syndrome diagnosed?

Your doctor will ask if you have any health problems—such as arthritis, hypothyroidism, or diabetes—or if you are pregnant. He or she will ask if you recently hurt your wrist, arm, or neck. Your doctor will want to know about your daily routine and any recent activities that could have hurt your wrist.

During the examination, your doctor will check the feeling, strength, and appearance of your neck, shoulders, arms, wrists, and hands. Your doctor may suggest tests, such as blood tests or nerve tests.

How is it treated?

Mild symptoms usually can be treated with home care. You can:

- Stop activities that cause numbness and pain. Rest your wrist longer between activities.
- Ice your wrist for 10 to 15 minutes 1 or 2 times an hour.
- Talk to your doctor about trying [non-steroidal anti-inflammatory drugs \(NSAIDs\)](#). They can help relieve pain and reduce swelling. Be safe with medicines. Read and follow all instructions on the label.
- Wear a wrist splint at night. This takes pressure off your median nerve.

The sooner you start treatment, the better your chances of stopping symptoms and preventing long-term damage to the nerve.

You also may need medicine for carpal tunnel syndrome or for a health problem that made you likely to get carpal tunnel syndrome.

How can you keep carpal tunnel syndrome from coming back?

To keep carpal tunnel syndrome from coming back, take care of your basic health. Stay at a healthy weight. Don't smoke. Exercise to stay strong and flexible. If you have a long-term health problem, such as arthritis or diabetes, follow your doctor's advice for keeping your condition under control.

You can also try to take good care of your wrists and hands:

- Try to keep your wrist in a neutral position.
- Use your whole hand—not just your fingers—to hold objects.
- When you type, keep your wrists straight, with your hands a little higher than your wrists. Relax your shoulders when your arms are at your sides.
- If you can, switch hands often when you repeat movements.

Health Tools

Health Tools help you make wise health decisions or take action to improve your health.

Decision Points focus on key medical care decisions that are important to many health problems.

- [Carpal Tunnel Syndrome: Should I Have Surgery?](#)

Actionsets are designed to help people take an active role in managing a health condition.

- [Wrist Care: Preventing Carpal Tunnel Syndrome](#)

Cause

Carpal tunnel syndrome occurs when a combination of health conditions and activities puts pressure on the [median nerve](#) as it passes through the [carpal tunnel](#) in your wrist. This pressure leads to symptoms. Anything that decreases the amount of space in the carpal tunnel, increases the amount of tissue in the tunnel, or increases the sensitivity of the median nerve can lead to carpal tunnel syndrome.

Things that help cause carpal tunnel syndrome include:

- Conditions or illnesses that can cause or contribute to arm pain or swelling in the joints and soft tissues in the arm, or to reduced blood flow to the hands. These include obesity, [rheumatoid arthritis](#), [gout](#), [diabetes](#), [lupus](#), and [hypothyroidism](#).
- [Repeated hand and wrist movements](#). They can cause the membranes surrounding the tendons to swell (tenosynovitis).
- Broken wrist bones, dislocated bones, new bone growth from healing bones, or bone spurs. These can take up space in the carpal tunnel and put more pressure on the median nerve.

Carpal tunnel syndrome is a common work-related condition. It can be caused by work that requires:

- Forceful or repetitive hand movements.
- Hand-arm vibration.
- Working for long periods in the same or awkward positions.

Carpal tunnel syndrome is even more likely if you have these work-related issues along with other health conditions.

In some cases the cause of carpal tunnel syndrome cannot be found.

Symptoms

Mild carpal tunnel symptoms most often affect the hand and sometimes the forearm, but they can spread up to the shoulder. Symptoms include:

- Numbness or pain in your hand, forearm, or wrist that awakens you at night. (Shaking or moving your fingers may ease this numbness and pain.)
- Occasional tingling, numbness, "pins-and-needles" sensation, or pain. The feeling is similar to your hand "falling asleep."
- Numbness or pain that gets worse while you are using your hand or wrist. You are most likely to feel it when you grip an object with your hand or bend (flex) your wrist.
- Occasional aching pain in your forearm between your elbow and wrist.
- Stiffness in your fingers when you get up in the morning.

With moderate or severe carpal tunnel symptoms, you may have numbness or reduced strength and grip in your fingers, thumb, or hand. It may be hard to:

- Do simple hand movements, such as brushing your hair or holding a fork. You may accidentally drop objects.
- Pinch an object between your thumb and first finger. (This is called loss of pinch strength.)
- Use your thumb while doing simple tasks such as opening a jar or using a screwdriver. With long-term carpal tunnel syndrome, the thumb muscles can get smaller and weaker (atrophy).



Symptoms often occur in both hands, but they are usually worse in one hand than the other. You may first notice symptoms at night. People with carpal tunnel syndrome can usually fall asleep, but pain or numbness may wake them up.

Not all pain in the wrist or hand is caused by carpal tunnel syndrome. There are many other conditions with similar symptoms, such as:

- An injury to the muscles, [ligaments](#), [tendons](#), or bones.
- Nerve problems in the fingers, elbow, or neck.
- [Arthritis](#) in the thumb joint or wrist.

What Happens

The symptoms of carpal tunnel syndrome usually develop gradually. Symptoms often improve if you stop or change an activity that is helping to cause the condition.

Most mild cases of carpal tunnel syndrome get better with treatment. Usually there is no permanent damage to the [median nerve](#). Your symptoms may improve by themselves when:

- Fluid buildup decreases, such as after pregnancy.
- You change or stop the activity that has caused your carpal tunnel syndrome.
- Other health problems that cause or contribute to your carpal tunnel symptoms improve.

Long-term carpal tunnel syndrome can cause:

- A loss of feeling and coordination in the fingers and hand. The thumb muscles can become weak and waste away (atrophy). This can make it hard to grip or hold objects.
- Permanent damage to the median nerve. You may have trouble using the hand.

Carpal tunnel syndrome is one of the most common causes of absence from work.

What Increases Your Risk

Things that put you at risk for carpal tunnel syndrome include:

- Health problems or illnesses that can cause arm pain or swelling in the joints and soft tissues in the arm, or reduce the blood flow to the hands. These include obesity, [rheumatoid arthritis](#), [diabetes](#), [lupus](#), [hypothyroidism](#), and [multiple sclerosis](#).
- Being female. Women between the ages of 40 and 60 have the highest risk. Pregnant women near the end of their pregnancies often have short-term symptoms. Women taking birth control pills, going through menopause, or taking estrogen are also thought to be at risk.
- [Hand and wrist movements](#) and activities that require repeated motions, especially in awkward positions.
- Smoking. It may contribute to carpal tunnel syndrome by affecting the blood flow to the median nerve.
- Broken wrist bones, dislocated bones, new bone growth from healing bones, or bone spurs. These can take up space in the carpal tunnel and put more pressure on the median nerve.
- Tumours and other growths (such as [ganglions](#)). These uncommon causes of carpal tunnel syndrome are usually benign.
- Normal wear and tear of the tissues in the hand and wrist caused by aging.

When should you call your doctor?

Call

911

or go to an emergency room immediately if you notice sudden loss of feeling in your arm.

Call your doctor if you:

- Have tingling, numbness, weakness, or pain in your fingers or hand that keeps coming back or that has not gone away after 2 weeks of home treatment.
- Have gradually developed little or no feeling in your fingers or hand.
- Cannot do simple hand movements, or you drop things.
- Cannot pinch your thumb and index finger together, or your pinch is weak.
- Cannot use your thumb normally (diminished thumb strength).
- Have problems with daily activities because of pain in your fingers or hand.



HealthLinkBC

You can treat mild symptoms of wrist and hand pain or numbness at home. You may try home treatment for 1 to 2 weeks before calling your doctor.

Examinations and Tests

Carpal tunnel syndrome is usually diagnosed using:

- Medical history. The doctor will ask about any medical problems or illnesses, prior injuries, current symptoms, or daily activities that may be causing your symptoms.
- Hand diagram. You may be asked to help fill in a diagram of your hand to show where you have numbness, tingling, or pain.
- Physical examination, including comparing the strength of both hands.

More testing

If your symptoms are severe, if non-surgical treatment has not improved symptoms, or if your symptoms aren't clearly caused by carpal tunnel syndrome, your doctor may recommend:

- Nerve testing, which checks the median nerve.
- [X-rays](#). These can check for bone problems caused by past injury, [arthritis](#), recently broken or dislocated bones, or tumours. X-rays aren't used to diagnose carpal tunnel syndrome. But they can be helpful for finding signs of arthritis or an old or new wrist or neck injury that may be adding to your symptoms.
- [Ultrasound](#), to look at the size of the median nerve. It is inexpensive, comfortable, and quick. But its use for carpal tunnel syndrome diagnosis is still unproven and fairly uncommon.
- [MRI](#). This imaging test can find swelling of the median nerve, narrowing of the carpal tunnel, or problems with circulation of blood through the carpal tunnel.
- Blood tests. These are sometimes done to check for a [thyroid problem](#), [rheumatoid arthritis](#), or another medical problem.

Treatment Overview

The goal of treatment for carpal tunnel syndrome is to allow you to return to your normal function and activities and to prevent nerve damage and loss of muscle strength in your fingers and hand.

Treatment options include:

- **Home treatment**, such as changing or avoiding activities that may be causing symptoms and wearing a [wrist splint](#).
- [Physiotherapy](#) or [occupational therapy](#). This includes [ultrasound](#), stretching, and range-of-motion exercises.
- **Medicines**, such as [non-steroidal anti-inflammatory drugs \(NSAIDs\)](#) to relieve pain and reduce inflammation. In some cases, oral corticosteroids or corticosteroid injections into the carpal tunnel may be considered.
- **Surgery**. Surgery is sometimes recommended when other treatment hasn't helped, if you've had carpal tunnel syndrome for a long time, or if there is nerve damage or the risk of nerve damage.
- [Carpal Tunnel Syndrome: Should I Have Surgery?](#)

What to think about

Treatment for carpal tunnel syndrome is based on the seriousness of the condition, whether there is any nerve damage, and whether other treatment has helped. If your symptoms are mild, 1 to 2 weeks of home treatment are likely to relieve your symptoms.

Prevention

To help prevent carpal tunnel syndrome:

- Take good care of your general health. This includes staying at a healthy weight, not smoking, and getting regular exercise.
- Keep your arm, hand, and finger muscles [strong and flexible](#).
- Stop any activity that you think may be causing finger, hand, or wrist numbness or pain.
- Use [hand and wrist movements](#) that spread the pressure and motion evenly throughout your hand and wrist. For example, keep your wrists straight or only slightly bent. Avoid activities that bend or twist the wrists for long periods of time.
- Switch hands and change positions often when you are doing repeated motions. Take breaks, and rest your hands.
- Use correct [posture](#).
- Restrict your salt intake if you tend to retain fluid.



- [Wrist Care: Preventing Carpal Tunnel Syndrome](#)

If you feel that certain work activities are causing finger, hand, or wrist numbness or pain, talk to your human resources department. Ask about different ways of doing your job, changes in your equipment, other job assignments, or the possibility of an ergonomics evaluation of your work space and procedures. For more information, see the topic [Office Ergonomics](#).

In daily routines at home or while doing hobbies, think about changing activities in which you make repeated finger, hand, or wrist movements. Train yourself to use other positions or techniques that won't stress your hand or wrist.

Home Treatment

Home treatment for carpal tunnel syndrome:

- Can ease pain and prevent further or permanent damage to your median nerve.
- May completely relieve your symptoms if you start treatment when symptoms first occur.

If you have mild symptoms, such as occasional tingling, numbness, weakness, or pain in your fingers or hand, follow these steps to reduce [inflammation](#):

- Rest your fingers, hand, and wrist. Stop activities that you think may be causing numbness and pain. When your symptoms improve, resume the activity gradually. As you do, keep your wrists straight or only slightly bent.
- Ice your wrist for 10 to 15 minutes at a time, once or twice an hour.
- Consider taking non-steroidal anti-inflammatory drugs (NSAIDs) to relieve pain and reduce swelling. Studies haven't shown NSAIDs to be effective for carpal tunnel syndrome, but they may help relieve your symptoms. Be safe with medicines. Read and follow all instructions on the label.
- Wear a [wrist splint](#) at night to keep your wrist in a neutral position and relieve pressure on your median nerve.
- [Wrist Care: Preventing Carpal Tunnel Syndrome](#)

When your pain is gone, begin [exercises for flexibility and strength](#) for your arm and wrist. Learn the best positions and posture for hand and wrist movements.

Medications

Medicine may relieve swelling, inflammation, and pain in the wrist or hand related to carpal tunnel syndrome. Reducing swelling in the wrist will relieve pressure on the [median nerve](#) in the carpal tunnel and relieve your symptoms.

Medicine choices

[Non-steroidal anti-inflammatory drugs \(NSAIDs\)](#) may relieve pain and inflammation and are available with or without a prescription. They work best if your tendon is inflamed. NSAIDs don't relieve pressure on the median nerve, but they may make you feel better.

Corticosteroids may be a treatment option when NSAIDs don't effectively relieve pain and inflammation. But these are powerful anti-inflammatory medicines. They have side effects that should be considered. Corticosteroids can be taken in pill form or injected into the wrist by a doctor.

What to think about

Medicine should be used with other measures (such as ice, rest, and splints) to reduce pain and inflammation.

Corticosteroids:

- Usually aren't used until non-surgical treatments (such as rest, ice, splints, or anti-inflammatory medicines) have been tried for several weeks with no improvement.
- Often provide temporary relief (for several weeks or more). Injected corticosteroids usually provide longer-lasting results than those taken by mouth (oral). But oral or injected medicines rarely provide permanent relief from carpal tunnel symptoms.

Surgery

Most people with carpal tunnel syndrome are treated without surgery. Surgery is considered only when:

- Symptoms haven't improved after several weeks to months of non-surgical treatment. This assumes that you are having ongoing symptoms but no sign of nerve damage. Nerve damage would make surgery more urgent.
- Severe symptoms restrict normal daily activities, such as when:
 - There is a persistent loss of feeling or coordination in the fingers or hand.
 - There is decreased strength in the thumb.
 - Sleep is severely disturbed by pain.
- There is damage to the [median nerve](#) (shown by nerve test results and loss of hand, thumb, or finger function) or a risk of damage to the nerve.
- [Carpal Tunnel Syndrome: Should I Have Surgery?](#)



The most common surgery for relieving carpal tunnel symptoms involves [cutting the transverse carpal ligament](#) to relieve pressure on the median nerve in the wrist. Two approaches for this surgery are:

- [Open carpal tunnel release surgery](#). Open surgery requires a longer recovery period and leaves a larger scar than endoscopic surgery. But there may be less chance of other complications.
- [Endoscopic carpal tunnel release surgery](#). Recovery is quicker than with open surgery. The scars heal more quickly, are smaller, and tend to be less painful at 3 months after surgery. But there may be a slightly higher chance of needing another surgery later.

Some surgeons are now doing small- or mini-open release surgery. This requires a smaller incision than standard open carpal tunnel release surgery. It may reduce healing time and scarring. But it also allows the surgeon to view the ligament directly during the surgery to minimize danger to the nerve itself. This procedure may be promising. But there are few studies comparing it to the open carpal tunnel or endoscopic procedures at this time.

What to think about

Nerve tests (nerve conduction velocity test and electromyogram) are often completed before surgery is done. Surgery is more likely to be successful if the results from nerve testing point to carpal tunnel syndrome.

Your decision about whether to use open or endoscopic surgery depends on your doctor's experience with the procedures. Endoscopic carpal tunnel surgery uses very technical equipment and is most successful when the doctor has done the procedure many times.

After surgery, it is important to avoid any activities that may have caused carpal tunnel syndrome. Or you can change the way you do them.

Other Treatment

Other treatments for carpal tunnel syndrome include:

- [Physiotherapy](#) or [occupational therapy](#). This includes [ultrasound](#), stretching, and range-of-motion exercises.
- [Wrist splints](#).
- [Manual therapies](#), such as mobilization.
- Retraining (learning new ways of doing things), and ergonomic considerations (such as having your body in the correct posture and position and using equipment that is right for your strength and ability).
- [Wrist Care: Preventing Carpal Tunnel Syndrome](#)

Complementary medicine

Some people try [complementary medicine](#) to help with the symptoms of tingling, numbness, weakness, or pain felt in the fingers or hand. There is not strong evidence that they help.¹ Some of these treatments include:

- [Acupuncture](#).
- [Yoga](#).
- [Natural health products](#), such as vitamin B6 (pyridoxine). High doses of vitamin B6 can cause nerve problems (neuropathy).

Talk with your doctor about any complementary health practice that you would like to try or are already using. Your doctor can help you manage your health better if he or she knows about all of your health practices.

Related Information

- [Office Ergonomics](#)

References

Citations

1. American Academy of Orthopaedic Surgeons (2016). Management of carpal tunnel syndrome evidence-based clinical practice guideline. <http://www.orthoguidelines.org/topic?id=1020>. Accessed July 1, 2016.

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⚠ IS IT AN EMERGENCY?

If you or someone in your care has chest pains, difficulty breathing, or severe bleeding, it could be a **life-threatening emergency**. Call **9-1-1** or the local emergency number immediately.

If you are concerned about a possible poisoning or exposure to a toxic substance, call **Poison Control** now at **1-800-567-8911**.

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