Carpal Tunnel Syndrome

Carpal tunnel syndrome (CTS) is a common problem affecting the hand and wrist. Symptoms begin when the median nerve gets squeezed inside the carpal tunnel of the wrist, a medical condition known as nerve entrapment.

This syndrome has received a lot of attention in recent years because of suggestions that it may be linked with occupations that require repeated use of the hands, such as typing on a computer keyboard or doing assembly work.

Actually, many people develop this condition regardless of the type of work they do.

It is more common in middle aged women.

When non-operative is not effective, surgical release is indicated.

Where is the carpal tunnel, and what does it do?

The carpal tunnel is an opening through the wrist to the hand that is formed by the bones of the wrist on one side and the transverse carpal ligament on the other.

The median nerve passes through the carpal tunnel into the hand. It gives sensation to the thumb, index finger, long finger, and half of the ring finger. It also sends a nerve branch to control the thenar muscles of the thumb [opposition].

The median nerve and flexor tendons pass through the carpal tunnel. The median nerve rests on top of the tendons, just below the transverse carpal ligament.

What causes CTS?

No cause: common
Inflamed tendon sheath
A traumatic wrist injury
Various types of arthritis
Pregnancy [retained extra fluid]
Diabetics [more prone to symptoms of CTS]
Low thyroid function (called hypothyroidism)
Occupation: are at more risk for problems of CTS
What does CTS feel like?
Tingling and numbness in the areas supplied
by the median nerve.
May begin to feel like it's asleep, especially in the
early morning hours after a night's rest.
Wakes up in the night with tingly feeling
Clumsiness in the hand; dropping things
Sometimes pain may even spread up the arm to the
shoulder.
Muscle weakness: The thenar muscles of the thumb
can weaken, causing the hand to be clumsy
Touching the pad of the thumb to the tips of the
other fingers becomes difficult
Making it hard to grasp items such as a steering wheel,
newspaper, or telephone.

How do doctors identify the condition?
Evaluation by obtaining a history of the problem,
A thorough physical examination.
Careful investigation usually shows that the little finger is unaffected.
If started after a traumatic wrist injury, X-rays may be needed
Electrical studies of the nerves in the wrist may be requested by your doctor.

What can be done for CTS?
Nonsurgical Treatment
Avoid activities that are causing your symptoms
Avoid repetitive hand motions, heavy grasping, holding onto vibrating tools, and positioning or
working with your wrist bent down and out.
If you smoke, talk to your doctor about ways to help you quit.
Lose weight if you are overweight. Reduce your caffeine intake.
A wrist brace will sometimes decrease the symptoms
Anti-inflammatory medications may also help
control the swelling and reduce symptoms of
CTS.
If these simple measures fail to control your
symptoms, an injection of cortisone into the
carpal tunnel may be suggested. This
medication is used to reduce the swelling in the
tunnel and may give temporary relief of
symptoms.

Surgery
If all attempts to control your symptoms fail, surgery may be suggested to reduce the pressure on the
median nerve.
By releasing the pressure on the nerve, the blood supply to the nerve improves, and most people
get relief of their symptoms. However, if the nerve pressure has been going on a long time, the median
nerve may have thickened and scarred to the point that recovery after surgery is much slower.

Open Release
The standard surgery for CTS is called open release under local anaesthesia
Open surgical procedures use a large skin incision.
In open release, an incision is made down the front of the wrist and palm
The transverse carpal ligament is divided to take pressure off the median nerve.
After dividing the transverse carpal ligament, the surgeon stitches just the skin together and leaves the loose ends of the transverse carpal ligament separated.

**What should I expect after treatment?**
It generally takes longer to recover after open carpal tunnel release than the endoscopic release. Pain and symptoms usually begin to improve, but you may have tenderness in the area of the incision for several months [3 months] after surgery.
After the skin is stitched together, your hand will be wrapped in a bulky dressing. The bulky dressing is reduced in 48 hours
Sutures were removed after 10 days.
Night pain should disappear early, Some pain around the wrist [pilla pain] may take 2 months to disappear

**What might go wrong?**
Some of the most common problems are
  - infection : <1%
  - incision pain : may persist for 3 months [Pillar pain]
  - scar tissue formation
  - nerve damage [Neuroma formation] or damage to Thenar branch
  - Chronic regional pain syndrome
  - Very rarely recurrence of symptoms