



HAND AND WRIST SURGERY

A guide for patients

A wide range of problems can occur in the hand and wrist. These may be due to disease, trauma, malformations or previous surgery. In many cases, surgery may be the recommended treatment because it can relieve pain and improve function. Many disorders of the hand and wrist can be treated by surgery. The most common reasons for hand surgery are:

- to control the symptoms of carpal tunnel syndrome
- to remove non-cancerous lumps called ganglia
- injury (trauma).

Carpal Tunnel Syndrome

The carpal tunnel is the narrow passage that runs between the wrist and hand, as shown in the figure. The median nerve and nine tendons pass through the carpal tunnel.

These tendons and the nerve are responsible for movement and sensation in the fingers, thumb and palm. Bones of the wrist (carpal bones) form the back wall of the carpal tunnel.

Although the exact cause of carpal tunnel syndrome is often not clear, carpal tunnel syndrome may occur when the tendons become inflamed and put pressure on the median nerve. People who require treatment are usually between the ages of 20 and 60 years. This condition occurs more often in women and can be aggravated by pregnancy.

Forceful, repetitive activities may worsen carpal tunnel syndrome, particularly in cold weather. Swelling associated with other hand problems such as arthritis or wrist fracture can cause or aggravate it.

Common symptoms of carpal tunnel syndrome

- Tingling sensation and numbness in the hand (mainly tips of thumb,

index finger and middle finger)

- Sharp pains through the arm and sometimes up to the shoulder
- Pain associated with gripping
- A tendency to drop objects
- Difficulty with activities requiring precise hand motor skills.

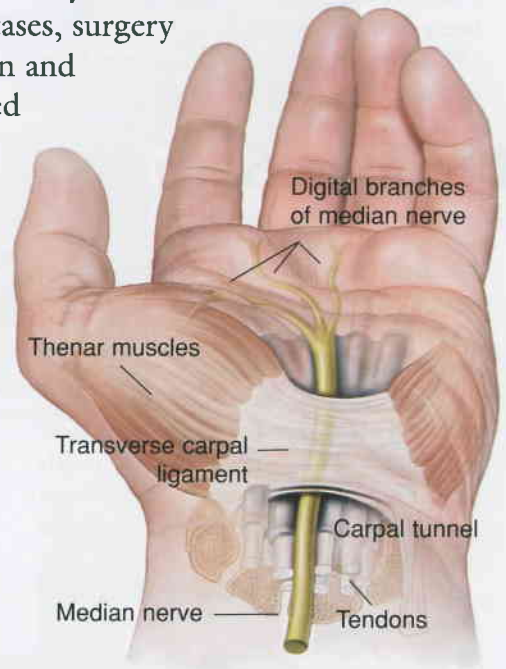
Initially, symptoms often occur at night or on waking, and may worsen during the day. Surgery can open the carpal tunnel and relieve pressure on the median nerve.

Ganglion of the Wrist or Hand

A ganglion is a lump filled with jelly-like material that appears next to a joint or tendon. It is formed when lubricating fluid leaks from a joint capsule or tendon sheath.

These leaks are worsened by normal use of the hand, which acts like a pump to squeeze more fluid out. The surrounding tissue tries to absorb this thick fluid, but only water is absorbed, leaving a jelly-like residue.

A ganglion is the result of the body's natural reaction to form a balloon-like capsule to contain the substance. A ganglion is the most common lump to occur in the hand and is not cancerous. Not every ganglion is painful.



Common sites for a ganglion

- Back of the wrist – it usually comes from ligaments in the wrist joint and may be small or large
- Palm of the hand at the base of a finger – it usually comes from a tendon sheath and can be painful
- Base of the fingernail – it comes from the finger joint, is usually associated with injury or arthritis, and can be painful
- Front of the wrist.

Ganglia occur more frequently in women and appear to be unrelated to occupation or repetitive activities.

(Note: The term “ganglion” sometimes refers to groups of nerve cells. However, in this context, “ganglion” does not refer to nerves in the hand, only to a non-cancerous lump.)

To the Surgeon: When you discuss this pamphlet with your patient, remove this sticker and put it on the patient's medical history or card. This will remind you and the patient that this pamphlet has been provided. Some surgeons ask their patients to sign the sticker to confirm receipt of the pamphlet.

TREATMENT INFORMATION PAMPHLET

PROCEDURE:.....

PATIENT'S NAME:.....

DOCTOR'S NAME:.....

EDITION NUMBER:.....DATE: (day).....(month).....(year).....

The Decision to Have Treatment

The decision to have surgery should only be made after discussion with your surgeon. The decision is yours and should not be made in a rush. Make the decision only when you are satisfied with the information you have received and believe you have been well informed.

Your surgeon will be pleased to discuss the benefits and risks of

treatment. Keep in mind that your surgeon cannot guarantee that the surgery will meet all of your expectations or that the surgery has no risks. Read about the risks of surgery on page 4.

We encourage you to seek the opinion of another surgeon if you are uncertain about your surgeon's advice.

Realistic expectations: Patients who

are healthy and have realistic expectations about what the surgery can achieve are suitable for hand surgery. Not everyone will get the same results.

Consent form: If you decide to have treatment, your surgeon will ask you to sign a consent form. Read it carefully. If you have any questions, ask your surgeon.

Before Surgery

Your surgeon might recommend that you have nerve-conduction studies (electromyography or EMG) to confirm the diagnosis (in the case of carpal tunnel syndrome).

Your surgeon needs to know your medical history to plan the best treatment. Fully disclose any health problems you may have had. Some may interfere with surgery, anaesthesia or aftercare.

Before surgery, tell your surgeon if you have had:

- an allergy or bad reaction to antibiotics, anaesthetic drugs or other medicines, surgical tapes or dressings
- prolonged bleeding or excessive bruising when injured
- previous problems with blood clots in the legs or lungs
- recent or long-term illness
- psychological or psychiatric illness
- keloid scars or poor healing of scars after previous surgery.

Give the surgeon a list of ALL medicines you are taking or have recently taken. Include medicines prescribed by your family doctor and those bought "over the counter", without prescription. Include medicines (such as insulin, warfarin and contraceptive pills) that are taken for long-term treatments.

Do not take aspirin, medicines containing aspirin (such as some

cough syrups), large amounts of vitamins (particularly vitamin E), or anti-inflammatory medicines for at least 10 days before surgery. These may increase the risk of excessive bleeding during and after surgery.

Some doctors recommend stopping the contraceptive pill for a time before surgery to reduce the risk of blood clot problems. Also, if you take any medication, it could affect or reduce the efficacy of the contraceptive pill. Check with your surgeon or general practitioner.

Your surgeon may prescribe drugs, such as antibiotics and small doses of blood-thinning agents, to be administered prior to surgery.

Smoking: Stop smoking at least two weeks before surgery. Smoking increases surgical and anaesthetic risk and impairs healing.

Anaesthesia

Hand and wrist surgery can be performed under general anaesthesia or local anaesthesia, depending on the particular treatment.

Most modern anaesthesia is safe and effective, but it does have risks. Rarely, side effects from an anaesthetic can be life threatening. You can ask your anaesthetist for more information.

tions or you choose other options, extra costs are likely to apply. You should discuss costs before treatment rather than afterwards. If complications occur, more surgery may be needed. This may lead to more costs and inconvenience.

TALK TO YOUR SURGEON

This pamphlet is intended to provide you with information.

It is not a substitute for advice from your surgeon and does not contain all the known facts about hand and wrist surgery or every possible side effect.

It is important that you have enough information about surgery to enable you to compare the benefits and risks. If you are not sure about the benefits, risks and limitations of treatment, the terms used in this pamphlet, or anything else, ask your surgeon.

Be sure to read all of the information in this pamphlet. Some technical terms are used, but don't let that stop you from reading it. Write down questions that you want to ask, and discuss them with your surgeon.

You are encouraged to fully discuss with your surgeon:

- the results you want
- the surgery to be done and why
- the outcome you can expect.

This pamphlet should only be used in consultation with your surgeon.

Costs of Treatment

Ask your surgeon to provide an estimate of the surgical, anaesthetic and hospital fees that may apply. This can only be an estimate because the actual treatment may differ from the proposed treatment. If further treatment is needed due to complica-

YOUR SURGEON

The Surgical Procedures

Endoscopic Carpal Tunnel Release

Two small incisions are usually made. Each is about one centimetre in length. One is made in the palm and the other in the wrist. A small slotted tube (cannula) is inserted through the incision in the wrist and comes out through the incision in the palm. An endoscope (a miniature video camera used for inspecting internal parts of the body) is inserted into the cannula. This enables the surgeon to perform the procedure while looking at a video monitor. Working through the other end of the cannula, the surgeon cuts the transverse carpal ligament using special instruments. The two incisions may be taped or sutured, and a dressing is applied.

Sometimes the procedure may be carried out through a single, small incision in the wrist, with the surgeon using a special blade attached to the tip of the endoscope. The procedure usually takes about 30 to 45 minutes. Endoscopic carpal tunnel release can be done under local or general anaesthesia.

Your hand will be covered with a soft dressing. If you have had a local anaesthetic, you will probably feel numbness and tingling in your hand for eight to 10 hours after surgery. You may have pain in the palm of the hand and some discomfort with fingers, but you will probably be able to resume most light activities within a few days of surgery.

Open Carpal Tunnel Release

An incision of about five centimetres is made in the palm and then deepened into underlying tissues until the surgeon can see the transverse carpal ligament. Making sure that the median nerve is out of the way, the surgeon cuts the ligament with a scalpel or scissors. This immediately relieves the pressure on the nerve by providing more space in the carpal tunnel. The surgeon also removes any other soft tissue that is causing pressure on the nerve. The skin is sutured, and a firm bandage applied. Open carpal tunnel release is performed under local or general anaesthesia and takes about 30 to 45 minutes.

A firm bandage will cover your hand to restrict wrist movement. Your hand will be elevated, either in a sling or on pillows, to help minimise swelling and bleeding. It is important to keep the dressing and the stitches dry. During a shower or bath, the hand must be kept dry; tape a large plastic bag over the hand and arm, and keep the hand elevated. Remove the plastic bag after your hand and arm are dry.

Stitches and dressings are removed 10 to 14 days after the surgery. Some bruising of the hand and wrist is common. You can immediately use your hand for light activities, such as eating and dressing. Heavy lifting can usually be performed about three months after surgery.

Carpal tunnel release corrects the symptoms of nerve irritation, such as numbness, tingling and "pins-and-needles". However, if there is an underlying painful cause for the nerve compression, such as wrist arthritis or inflammation of the tendons, then the underlying discomfort will not be altered.

Removal of a Ganglion

An incision is made to expose the entire ganglion. It is surgically removed at its base with a small amount of surrounding tissue (tendon sheath or joint lining) to reduce the risk of recurrence. With a wrist ganglion, the "stalk" or connection to the wrist joint is also removed.

Nail ganglia are cut out along with damaged skin. The wound is either sutured and a dressing applied, or if the defect is large, it is repaired with a skin graft or a local rotation flap.

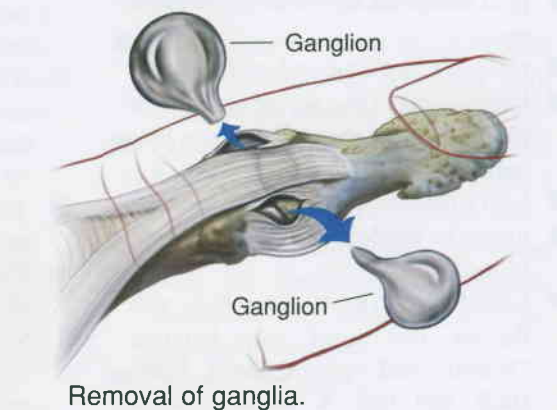
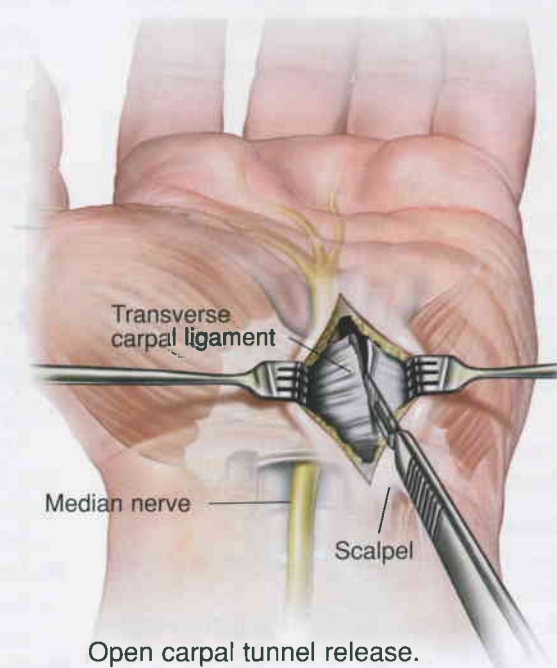
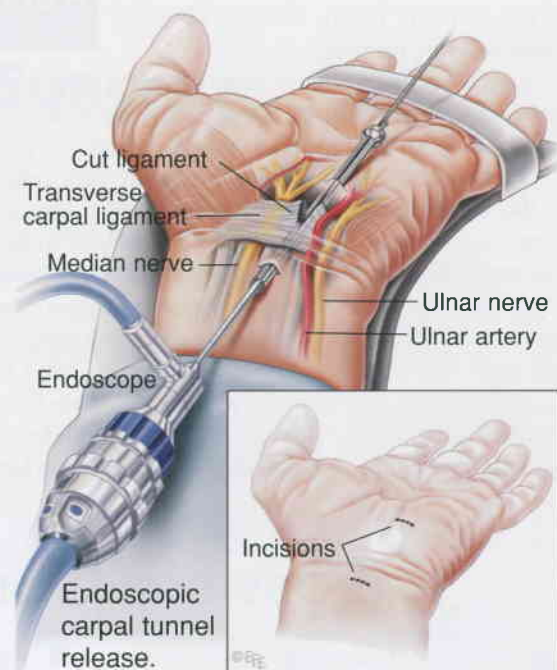
After the surgery, a dressing is applied to the area for seven to 10 days. You may be able to perform normal light duties after 10 days, but full hand function may not return for several weeks or months. Expect some swelling and bruising. Stitches are removed in one to two weeks.

Surgery For Other Common Hand Problems

Dupuytren's contracture: Tissue deep within the palm of the hand shrinks and thickens, drawing the fingers into a bent position. Surgery removes the abnormal tissue under the skin, and the wound is closed.

Stenosing tenosynovitis (trigger finger): This involves the tendons that bend the fingers. The tendon lining develops a nodule (knot) or swelling. This pinches the tendon and prevents it from gliding smoothly. Surgery is carried out to allow the tendon to glide more freely.

Arthritic conditions: Some damaged joints can be replaced with artificial joints. Other joints may need to be surgically fused; this will completely stiffen the joint, a procedure called arthrodesis.



Immediately after surgery, you will be transferred from the operating theatre to the recovery room. Nursing staff will monitor your recovery.

Carpal tunnel release and ganglion removal are often done as day procedures. Depending on how you feel, you may be able to go home after a few hours.

You will be given a prescription for pain relief. Tingling in the fingers may persist for some weeks. You may have to wear a splint until the tissues are healed and muscle strength has returned. During healing, the hand and wrist may be tender and sensitive to direct pressure for some weeks. Your grip will be weaker and probably slightly painful, although it will gradually improve with time and with hand therapy.

Avoid heavy lifting and repetitive activities for six to eight weeks after surgery. Your return to work will depend on your occupation. Your surgeon will advise you when you can

Recovery after Surgery

resume driving.

If you have plaster, a bandage or splint, the following suggestions may be helpful in assisting recovery.

- Using pillows, always keep your entire arm elevated above shoulder level when sitting or lying down. Keep the arm elevated in a sling while standing or walking.
- To help prevent shoulder stiffness, raise the healing hand high above your head at least five times daily.
- Move all unsplinted joints every hour by stretching the arms and legs.

Be certain to keep your follow-up appointments.

Hand therapy: Physiotherapy or occupational therapy is often required after hand and wrist surgery. Treatment may include exercises, heat and massage therapy, nerve stimulation, and splinting or wrappings to control swelling. Hand therapy is arranged in consultation with your surgeon.

Possible Complications of Surgery

As with all surgical procedures, hand surgery does have risks, despite the highest standards of practice. While your surgeon makes every attempt to minimise risks, complications can occur that may have permanent effects.

It is not usual for a surgeon to outline every possible side effect or rare complication of a surgical procedure. However, it is important that you have enough information about possible complications to fully weigh up the benefits and risks of surgery.

The following possible complications are listed to inform and not to alarm you.

General Risks of Surgery

Possible complications of any surgery include:

- wound infection (treatment with antibiotics may be needed)
- pain and discomfort in the treated areas
- excessive swelling and stiffness
- haematoma (an accumulation of blood around the surgical site that may require drainage)
- heavy bleeding from an incision
- injury to tendons, bones, nerves or blood vessels
- keloid scars (most scars fade and flatten, but some may become "keloid" and remain raised, itchy, thick and red. A keloid can be annoying but is not a threat to health. Additional surgery or chemical treatment may be needed to try to improve the scar.)
- slow healing (most likely to occur in smokers and people with diabetes)

- separation of wound edges
- nausea (typically from the anaesthetic; this usually settles down quickly)
- allergies to anaesthetic agents, anti-septic solutions, suture material or dressings
- long-term disability of the hand, requiring hand therapy
- the original problem with the hand may persist or return, requiring further surgery.

Specific Risks of Carpal Tunnel Release

- The scar on the palm can be slow to heal thoroughly. This may delay a return to normal work activities.
- Damage to a nerve, leading to further weakness and numbness.
- Failure to completely free the nerve from compression, so symptoms may persist.
- Nerve damage that occurred before surgery may lead to an incomplete recovery.
- A small number of patients may develop excessive swelling and hand stiffness. This may be corrected with prolonged hand therapy.
- There may be some permanent numbness at the base of the palm.
- Risk of Complex Regional Pain Syndrome (also called Reflex Sympathetic Dystrophy). This is the development of a burning sensation and sharp pain that becomes much worse than normally expected for the degree of surgery. If it occurs, the syndrome usually settles down in a few days or weeks; in some cases, it may persist and require pain management.

Specific Risks of Ganglion Removal

- Nerve damage is rare but could lead to numbness in part of the hand or a sensitive area in the scar (neuroma). A further operation may be required if this condition does not settle.
- Of every 100 patients having a ganglion, five to 10 may have recurrence of another ganglion at the same site.
- A nail ganglion often causes a groove in the nail. Occasionally this can persist after, or even result from, the surgery.

REPORT TO YOUR SURGEON

Tell your surgeon at once if you develop any of the following:

- temperature higher than 38°C or chills
- severe pain, tenderness or increased swelling
- unusual amount of drainage on the dressing, or a foul odour at the dressing site
- a dressing or plaster that is uncomfortable, tight, wet or broken
- any definite change in movement, colour, warmth or sensation in the fingertips
- nausea or vomiting
- if you need more than six tablets per day for pain relief
- any concerns you have regarding your surgery.