



KATARZYNA MACKENZIE

PLASTIC SURGEON

## Thumb Base Arthritis and Trapeziectomy

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The basilar joint of the thumb, or carpometacarpal (CMC) joint, is unique because it provides mobility and stability. However, years of use or injuries may cause dysfunction and pain in this joint. This problem occurs when the cartilage between the bones that permits pain-free movement is worn away and the bones rub against each other. This cartilage loss can result in bone-on-bone friction, and pain at the thumb base. Arthritis at the small joint at the thumb base is also referred to as "CMCJ arthritis" or "basal joint arthritis."

Treatment generally involves a combination of medication and splints. Severe thumb arthritis might require surgery.

Length of surgery	2 hours
Anaesthesia	General or regional anaesthetic
Hospital stay	Day case
Risks/complications of surgery	Frequent: Swelling, stiffness, discomfort on movement Infrequent: Infection, bleeding (haematoma), delayed wound healing, painful scar, damage to the nerve, incomplete relief of pain, incomplete resolution of symptoms, complex regional pain syndrome
Recovery	2 weeks of cast then splint on and off for 4 weeks 4-8 weeks until return to office work 4-6 months no heavy lifting 3-9 months until swelling disappears 3-9 months until final result
Driving	8-12 weeks
Hand position	Elevation above the heart level
Follow up	1 week, 6 weeks, 3 months, 6 months
Duration of results	Permanent

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## Thumb base arthritis information sheet

Any hand surgery procedure is a personal choice and understandably there are a number of questions that arise. This information sheet is a general guide for patients considering thumb base arthritis treatment under the care of Dr Mackenzie. It should provide the answers to some questions that you may have. There are many factors that can affect your individual operation, your recovery and the long-term result. Some of these factors include your overall health, previous surgery, any bleeding tendencies that you have and your healing capabilities, some of which will be affected by smoking, alcohol and various medications. Such issues that are specific to you need to be discussed with Dr Mackenzie and are not covered here. Please feel free to ask her any further questions before you sign the consent form.

### What is thumb base arthritis?

Thumb arthritis is common with aging and occurs when cartilage wears away from the ends of the bones that form the joint at the base of your thumb — also known as the carpometacarpal (CMC) joint.

Although there are several types of arthritis, the one that most often affects the joint at the base of the thumb (the basal joint) is osteoarthritis which is essentially “wear and tear” arthritis.

Thumb arthritis can cause severe pain, swelling, and decreased strength and range of motion, making it difficult to do simple tasks, such as turning doorknobs and opening jars. It also reduces the ability to be able to pinch.

Treatment generally involves a combination of medication and splints. Severe thumb arthritis might require surgery.

### What are the symptoms of thumb base arthritis?

Pain is the first and most common symptom of thumb arthritis. Pain can occur at the base of your thumb when you grip, grasp or pinch an object, or use your thumb to apply force.

Other signs and symptoms might include:

- Swelling, stiffness and tenderness at the base of your thumb
- Decreased strength when pinching or grasping objects
- Pain with activities that involve gripping or pinching, such as turning a key, opening a door, or snapping your fingers
- Aching discomfort after prolonged use

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- Decreased range of motion
- Enlarged or bony appearance of the joint at the base of your thumb

## What are the risk factors for thumb base arthritis?

The underlying cause for arthritis of the base of the thumb is not clear as it affects some more than others. Osteoarthritis is more common in women.

Typically, degenerative arthritis of the thumb occurs sometime after 40 years of age. There is a genetic predisposition in developing this arthritis condition. Additionally, any type of trauma to the thumb can predispose one to thumb arthritis. There are other conditions such as inflammatory arthritis (Lupus, Rheumatoid arthritis) that can affect the base of the thumb and cause the deterioration of that joint.

## How is the thumb base arthritis diagnosed?

Dr Mackenzie will take a detailed history including complete medical history, symptoms, how the hands have been used, any prior injuries, pain patterns, or activities that aggravate the condition.

That will be followed by examination of the hand. Dr Mackenzie will check the hand and thumb for stiffness, pain, tenderness over the base of thumb. One of the tests used during the examination involves holding the joint firmly while moving the thumb. If pain or a gritty feeling results, or if a grinding sound (crepitus) can be heard, the bones are rubbing directly against each other.

It is important to exclude other problems that could be causing the discomfort. Conditions such as trigger thumb, de Quervain's tenosynovitis and scaphotrapeziotrapezoidal (STT) arthritis can cause similar discomfort to thumb base arthritis. Many people with arthritis at the base of the thumb also have symptoms of carpal tunnel syndrome.

X-rays will be organised to confirm the diagnosis. An x-ray may show deterioration of the joint, bone spurs, loss of joint space or calcium deposits that have developed.

## Why do I need surgery?

Early symptoms of arthritis often respond to splinting, rest or steroid injection into the thumb base. Eventually, like other forms of arthritis, this degenerative disease will worsen over time. If the arthritis becomes so painful that it limits daily activities, surgery is the only option for definitive relief. Following surgery, most patients experience complete or near-complete pain relief along with the recovery of a satisfactory range of motion.

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## What is the treatment?

### Non-surgical treatment

Non-surgical treatments are usually tried first. Treatment begins with:

- Splint to rest the thumb and decrease pain
- Avoiding activities that cause pain and swelling
- Activity modification
- Exercise regimens to strengthen the thenar musculature and restore dynamic stability at thumb base joint
- Nonsteroidal anti-inflammatory drugs such as ibuprofen, to relieve pain and inflammation
- Corticosteroid can be injected into affected joint as it offers temporary pain relief and reduces inflammation

### Surgical treatment

When nonoperative treatment fails and when the patient is sufficiently symptomatic, surgery is an option. Surgery can involve removing the trapezium (one of the bones in the thumb joint) and cushioning or suspending the thumb joint with a variety of possible techniques. Fusing (making the two bones into one) the thumb joint is also an option. The complete recovery after a thumb surgery can take anywhere between 8 weeks and one year.

There are several operations that are used depending on the case, however trapeziectomy and joint fusion are the two main surgical options.

#### *Trapeziectomy and suspension*

The small bone, the trapezium, at the base of the thumb is removed. Sometimes the joint is then stabilized using a tendon. Removing the trapezium does weaken grip and pinch strength permanently, but gives the pain relief.

#### *Fusion of the joint*

The trapezium bone is fused to the bone next to it. This, however, will limit the movement and predispose you to arthritis between the other small bones of the wrist. This type of surgery is much less common. It is only suitable for certain people - for example, those who have developed arthritis under the age of 40, who need to do heavy manual work. It is only possible where the bones are sufficiently robust. However, this procedure sometimes fails to solve the problem and the trapezium still needs to be removed.

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## ***Denervation***

The small nerves surrounding the joint are carefully divided, so that they cannot cause pain. This operation involves removing the sensory nerve supply to the joint at the base of the thumb. This can be an effective means of treating pain caused by osteoarthritis, before the need for trapeziectomy or joint replacement arises. The nerves responsible for carrying sensory signals (and therefore pain) from the 1st CMC joint are divided via 3 short incisions around the wrist.

## ***Joint replacement***

The joint can be replaced with an artificial joint. Research into using implants placed in between the affected joint is ongoing. These prostheses have problems - subluxation and instability, fracture and fragmentation, prosthesis dislocation.

## ***Trapeziectomy***

The trapezium is a small bone at the base of the thumb which can be affected by arthritis. When this joint becomes arthritic, it can lead to pain, stiffness and weakness in the thumb. This can cause difficulty and pain when using your hand. In this operation, the trapezium is removed using an incision at the base of the thumb.

The aim of the surgery is to provide pain relief by removing the painful joint. Although it can cause some weakness in your thumb, it should help you to be able to use your hand more easily due to the reduction in pain.

## **What happens during trapeziectomy?**

Trapeziectomy is done as a day case. The anaesthetic may be regional (injected in the armpit to numb the entire arm) or general. Dr Mackenzie will make a small incision on the back of your hand at the base of your thumb and remove your trapezium. Sometimes a tendon from the wrist may be looped through the remaining gap where the bone has been removed to stabilize the thumb. The surrounding joints are inspected at the same time.

Dr Mackenzie will close your skin with stitches. You will have a bandage and plaster cast on your hand. To help reduce any swelling it is important to keep your hand elevated above your heart using a sling or pillow. Gentle movement of your fingers will prevent them from becoming stiff.

A trapeziectomy takes between 60 and 90 minutes.

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## What is the recovery after trapeziectomy?

It is very important to elevate your hand as often as possible, following your operation as it helps to reduce the swelling. You will be encouraged to move your fingers to reduce swelling and prevent stiffness.

You can expect some pain, swelling, and stiffness after your procedure. It may take from 4 to 12 months for swelling and stiffness in your hand and fingers or thumb to go away completely. If stiffness, swelling, or pain persist after surgery, hand physiotherapy will be recommended.

Although the scar may be red and tender for several weeks, it is seldom troublesome in the longer term.

You can have a bath or shower 48 hours after your operation, but keep your wounds dry until they have healed. It is helpful to wear a large plastic bag over your arm for showering or bathing.

Around two weeks after the operation, the dressing/cast will be changed by physiotherapist to a light plastic splint to be worn as protection as your thumb heals. At the six-week mark, you can begin to remove the splint during the day for light activities, but you can expect to wear this for between 6-12 weeks depending on your pain.

The physiotherapist will give you exercises to help you re-gain movement in your thumb and advice on strengthening your thumb.

You can drive a car at about 8-12 weeks, provided your wrist is comfortable and you are able to control a car safely. Insurance companies usually prefer that you do not drive wearing a rigid splint-it can reduce your grip and control of the steering wheel.

Recovery may take several months.

## When can I return to work following trapeziectomy?

This will depend on the type of work you do. It may be up to six months before you can undertake heavy tasks and it may take up to 12 months for the soreness to subside.

- 4-8 weeks until return to office work
- 4-6 months no heavy lifting

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## What are the risks of trapeziectomy surgery?

Complications associated with this surgery are rare, but can include:

- Infection – this can be settled by taking antibiotics
- Swelling-may last for a few months
- Stiffness can last from weeks-9 months. Hand physiotherapy may be required
- Painful scar
- Wound healing problems
- Bleeding
- Recurrence
- Incomplete resolution of symptoms
- CRPS-complex regional pain syndrome-5%
- Continued pain or weakness
- Risk of nerve injury/ neuroma. A small nerve running through the region of where the surgeon is operating can be damaged during surgery. It may form a painful spot on / near the scar (a neuroma)
- A large portion of patients experience decrease in pain following surgery, however a small portion experience little or no change in pain and function. Some are worse than before they had surgery