

# Osteoarthritis of the base of thumb

## What is the condition?

The main joint at the base of the thumb is called the trapeziometacarpal joint (or first carpometacarpal joint). It transmits a great deal of force when we use the thumb and allows complex movements including opposition of the thumb tip to each of the finger tips. It is one of the most susceptible joints to wear and tear otherwise known as osteoarthritis. This arthritis causes aching of the thumb base when pinching firmly (key pinch). As a result of pain the thumb feels weak and it can be difficult to get tops off jars and undo food packaging.

As base of thumb arthritis progresses then pain worsens and hand function is further affected. Pain may wake a patient from sleep. The severity of the problem can be assessed by examination and x-ray. X-ray shows the severity of joint damage including any collapse in the height of the trapezium (the bone with which the thumb articulates), the formation of spikes and spurs of bone round the edges of the joint (painful osteophytes), and the involvement of other joints beneath the trapezium, or elsewhere in the wrist or hand.

## Non-surgical Treatment

Treatment is initially aimed at making the symptoms manageable, or may involve surgical treatment if such measures fail to work.

A custom-made thermoplastic splint is made by the Hand Therapist to support the thumb and stop the painful joint from moving. The rest of the hand and wrist are left free to move. It can be worn at rest including night time, and also during activity to allow more function without pain. Thermoplastic splints can prove too restrictive for day time use depending on hand activity required and neoprene supports can be provided which partially restrict thumb base movement.

Steroid injection is often used as a form of treatment, and has its place. However, there is uncertainty about the long-term effects on the joint. Therefore it should not be repeated endlessly, and should preferably only be used when surgical treatment is envisaged but there is need for delay.

## Surgical Treatment

Surgical treatment is indicated if pain persists and interferes with function. The preferred operation is trapeziectomy with tendon sling support. At operation the trapezium bone is removed leaving a gap that slowly obliterates through natural movement of the thumb towards the scaphoid bone in the wrist. Insertion of a tendon sling made from part of one of the wrist tendons

probably helps in the formation of a new joint, and its attachment to the bone at the base of the thumb (the metacarpal) also helps provide stability as the joint heals. The tendon sling seems to help the early to intermediate recovery of strength after the operation.

Joint replacements arthroplasties have been designed for the thumb base but have so far not produced satisfactory or stable long term results.

## Downtime and Recovery

Following trapeziectomy surgery the wrist and thumb are bandaged and a splint applied. This bandage should be kept dry. Elevation of the hand within a sling reduces swelling and pain from the surgery. The first dressing change is undertaken at about 1 week and a thermoplastic splint or resin cast fitted.

- Splint / cast – 5-6 weeks
- Return to work – 1- 2 ½ weeks for office based work, 12-16 weeks for manual work
- Driving – approximately 6-8 weeks following cast removal and depending on comfort. Ensure that you feel you are safely in control of your vehicle before driving.
- Time to full recovery – grip strength takes from 6 – 9 months. Strength improves steadily but will not be ever be as strong as a normal hand unaffected by arthritis.

Hand Therapy is an essential part of regaining movement after surgery. Once the cast is removed physiotherapy may be required weekly for up to two months.

Untoward effects from surgical correction of base of thumb arthritis are the exception but can include:

- Stiffness. CRPS is an unpredictable condition characterised by sweating, stiffness or sensitivity to cold. When this occurs extended treatment including drugs and physiotherapy may be required.
- Injury to the small nerves in the scar line producing a 'trigger-point' type pain
- Continuing pain due to arthritis in neighbouring joints of to obscure mechanical reasons.
- Infection.