

# THUMB BASE ARTHRITIS

Patient Information



## Surgical options for Thumb base arthritis

### Surgical Options for the Treatment of Thumb Basal Arthritis

#### Introduction

Thumb basal arthritis, also known as carpometacarpal (CMC) joint arthritis, is a common degenerative condition affecting the base of the thumb. It is particularly prevalent in middle-aged and older adults, especially women. The CMC joint allows for the thumb's wide range of motion, but this mobility also makes it susceptible to wear and tear. and when this happens it can change the surgical options which might be appropriate. When conservative treatments such as splinting, medications, and injections fail to provide relief, surgical intervention may be considered. This document explores the main surgical options for thumb basal arthritis, including trapeziectomy and suspensionplasty, neurectomy, fusion (arthrodesis), and joint replacement (arthroplasty).

Key is ensuring your surgeon is familiar with the type of procedure they are offering and achieves good outcomes. When there are multiple surgical options for a particular condition this usually means that each one has its own particular advantages and disadvantages or is best used in specific circumstances.

#### 1. Trapeziectomy and Suspensionplasty

**Trapeziectomy** is the most commonly performed surgical procedure for thumb basal arthritis. It involves the removal of the trapezium bone, which forms the base of the thumb joint. By removing this bone, the source of pain and inflammation is eliminated, and the bones are prevented from rubbing against each other.

**Suspensionplasty** is often performed in conjunction with trapeziectomy to stabilize the thumb and prevent the first metacarpal from collapsing into the space left by the removed trapezium. There are several techniques for suspensionplasty, but the most common is the ligament reconstruction and tendon interposition (LRTI) procedure. In LRTI, a portion of a tendon (usually the flexor carpi radialis or abductor pollicis longus) is harvested and used to create a sling or cushion in the space where the trapezium was removed.

**Advantages:**

- Proven long-term pain relief and functional improvement.
- Preserves thumb motion and strength.
- Low risk of major complications.

**Disadvantages:**

- Recovery can be lengthy, often requiring several weeks of immobilisation and hand therapy.
- Some loss of pinch strength compared to a healthy thumb.
- Potential for thumb shortening or instability if not properly stabilised.

**Indications:**

- Patients with moderate to severe arthritis who have failed conservative management.
- Those seeking to maintain thumb mobility and function.

**Outcomes:**

Most patients experience significant pain relief and improved function. Complications are relatively rare but can include infection, nerve injury, or persistent instability.

**2. Neurectomy**

**Neurectomy** is a less invasive surgical option that involves cutting the nerves that transmit pain signals from the arthritic joint. The most commonly targeted nerve is the superficial branch of the radial nerve, which supplies sensation to the base of the thumb.

**Advantages:**

- Minimally invasive with a short recovery period.
- Can provide significant pain relief for selected patients.
- Preserves joint structure and function.

**Disadvantages:**

- Does not address the underlying joint degeneration.
- Pain relief may be temporary, and arthritis may progress.
- Not suitable for patients with severe deformity or instability.

**Indications:**

- Patients with mild to moderate pain who are not candidates for more extensive surgery.
- Younger patients in whom bony procedures have disadvantages or may not be longlasting.
- Those seeking a less invasive option with minimal downtime.

**Outcomes:**

Neurectomy can be effective for pain relief in carefully selected patients, but it is generally considered a palliative procedure rather than a definitive solution.

### 3. Fusion (Arthrodesis)

**Fusion**, or arthrodesis, involves surgically joining the bones of the CMC joint so that they no longer move against each other. This eliminates pain by preventing motion at the arthritic joint.

#### Advantages:

- Provides excellent pain relief.
- Maintains thumb length and stability.
- Suitable for younger, active patients or those with high physical demands.

#### Disadvantages:

- Loss of motion at the CMC joint, which can limit thumb function.
- Risk of nonunion (failure of the bones to fuse) or hardware complications.
- Increased stress on adjacent joints, potentially leading to arthritis elsewhere in the hand.

#### Indications:

- Patients with severe arthritis and instability.
- Those who require strong pinch and grip strength for work or daily activities.

#### Outcomes:

Fusion is highly effective for pain relief and stability, but the loss of motion can impact fine motor tasks. Most patients adapt well, but careful patient selection is important.

### 4. Joint Replacement (Arthroplasty)

**Joint replacement**, or arthroplasty, involves replacing the damaged CMC joint with an artificial implant. There are various types of implants, including silicone, metal, and pyrocarbon devices.

#### Advantages:

- Preserves or restores thumb motion.
- Can provide excellent pain relief and functional improvement.
- May be preferable for patients who wish to maintain a high degree of thumb mobility.
- Recovery and rehabilitation can be quicker than other procedures

#### Disadvantages:

- Risk of implant loosening, dislocation, or failure over time.
- Potential for infection or allergic reaction to implant materials.
- Revision surgery may be required if the implant fails.

#### Indications:

- Patients with advanced arthritis who desire to maintain thumb motion.
- Those who have failed other surgical options or have contraindications to fusion.

#### Outcomes:

Joint replacement can offer good pain relief and improved function, but long-term results depend on implant design and patient factors. Younger, more active patients may experience higher rates of implant failure.

### Comparing Surgical Options

The choice of surgical procedure depends on several factors, including the patient’s age, activity level, severity of arthritis, and personal preferences. Here is a summary comparison:

Procedure	Pain Relief	Motion Preservation	Strength	Recovery Time	Complications
Trapeziectomy + Suspensionplasty	Good	Good	Moderate	Moderate	Instability, thumb shortening
Neurectomy	Moderate	Excellent	Excellent	Short	Temporary relief
Fusion	Excellent	Poor	Excellent	Moderate	Nonunion, adjacent arthritis
Joint Replacement	Good	Good	Moderate	Moderate	Implant failure

### Postoperative Care and Rehabilitation

Regardless of the surgical procedure, postoperative care is crucial for optimal outcomes. This typically includes:

- Immobilisation in a splint or cast for several weeks.
- Gradual introduction of exercises or hand therapy to restore motion and strength.
- Pain management with medications and ice.
- Scar management
- Monitoring for complications such as infection, nerve injury, or implant issues.

Full recovery can take several months, and adherence to rehabilitation protocols is essential for the best results.

### Conclusion

Thumb basal arthritis can significantly impact hand function and quality of life. When conservative treatments are no longer effective, several surgical options are available, each with its own advantages and limitations. Trapeziectomy with suspensionplasty remains the gold standard for many patients, offering reliable pain relief and preservation of function. Neurectomy may be suitable for those seeking a less invasive approach, while fusion provides stability and strength at the expense of motion. Joint replacement is an option for those prioritising mobility, though implant longevity remains

a unknown beyond about 12 years for the most modern implants but at present they appear to perform as well as knee joint replacements.

The choice of surgery should be individualized, taking into account the patient's needs, expectations, and lifestyle. A thorough discussion with a hand surgeon can help determine the most appropriate treatment plan, ensuring the best possible outcome for each patient.