

Arthritis and Your Thumbs

How does arthritis affect my thumb joints?

Thumb arthritis is common and can affect any of the 3 joints of the thumb.

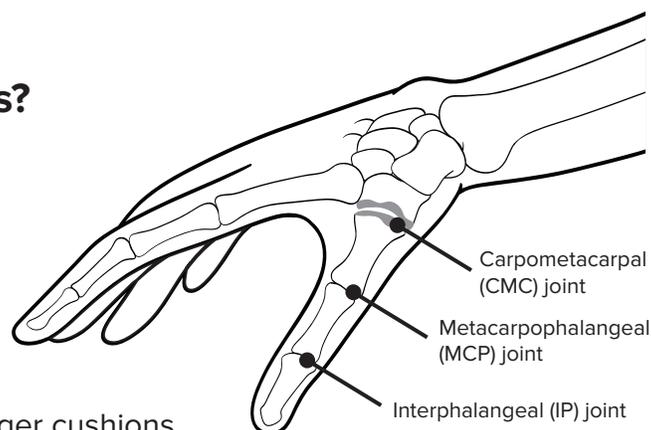
Carpometacarpal (CMC) – base of the thumb

Metacarpophalangeal (MCP) – thumb “knuckle”

Interphalangeal (IP) – joint at the end of the thumb

Possible joint changes that may occur include:

- The cartilage becomes rough and thin and no longer cushions the joint surfaces effectively
- Ligaments around the joint become stretched and no longer hold the bones together securely or in their correct alignment
- Bone spurs may develop on the edges of the joint
- There may be loss of joint movement or in some cases, joints such as the MCP and IP may become more mobile
- The joint may become swollen and painful



Why does arthritis affect my thumbs?

Grasping an object puts a heavy force on the thumb joints and ligaments.

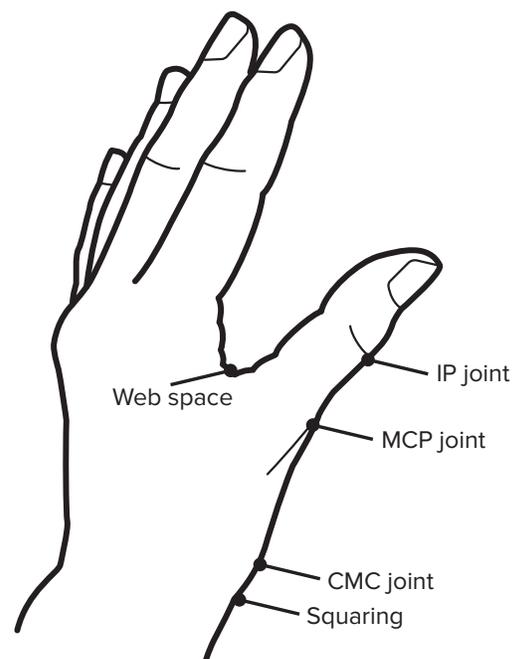
1 kg at the tip of the thumb equals 12 kg at the CMC joint. Over time, this strain can lead to joint damage.

The CMC joint allows a lot of motion but structurally it is not a very stable joint.

The alignment and stability of the MCP and IP joints may also be affected.

What are the signs of thumb arthritis?

- A “square” appearance at the base of the thumb
- Loss of muscle bulk around thumb
- Tightness of the “web space”
- Weakness during pinching or gripping (dropping objects)
- Pain or tenderness
- Instability of the MCP and IP joints



Sable vs. unstable positions for the thumb

USE stable thumb positions

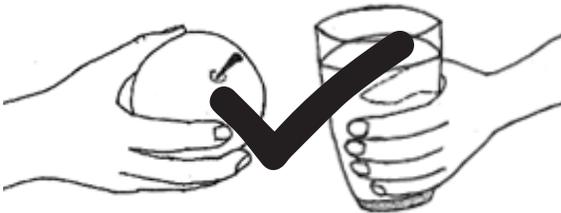
The CMC joint is in its **most stable** position when:

- The thumb is held away from the hand in “abduction” with an open web space
- MCP and IP joints are flexed or curved

This position is used when holding an apple or a drinking glass.

When the thumb is in this position, there is minimal strain on the ligaments.

Tip: the CMC may be more stable when the **web space** is making contact with the object



AVOID unstable thumb positions

The CMC joint is in its **most unstable** position when:

- the thumb is held close to the side of the hand in “adduction” with the web space closed
- MCP and IP joints are straight or over extended

This position is used when gripping and turning a key.

When the thumb is in this position, there is increased strain on the ligaments.

Modify activities:

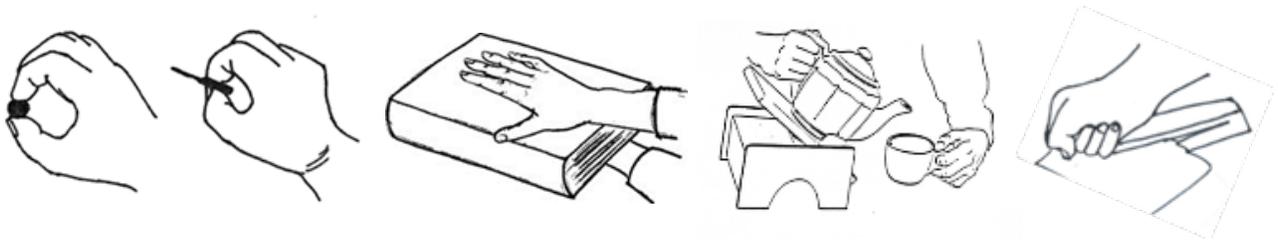
- That require prolonged unstable gripping, such as holding a mobile device or book, or sewing
- That place direct pressure to the palm at the CMC joint



Ways to protect your thumbs

Stable positions

- Use a stable thumb position to pick up a light object (e.g. remove files from a file drawer or turn a key)
- Hold heavy objects with both hands in a flat position instead of using your thumbs to grip
- Instead of lifting, try sliding, rolling or tipping items to reduce forces on the thumbs
- Use the palm or side of your hand to press on an object such as a stapler or soap dispenser pump



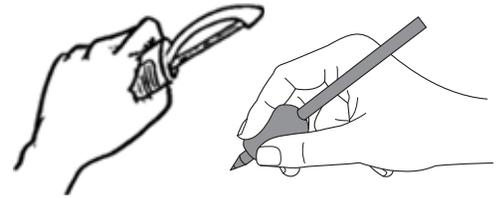
Friction/traction

- Non-slip material (shelf liner) can be placed under a mixing bowl to hold it steady, or used to improve grip when turning doorknobs, taps, lids, etc.
- Garden gloves help to create friction in the palm



Grip size and shape

- Enlarged, non-slip handles on tools, such as pens and vegetable peelers, hold the thumb in a stable position and reduce the effort required to grip
- Customize a grip by using non-slip material (e.g. shelf liner, Rubazote, pipe insulation, pool noodles or Dycem)



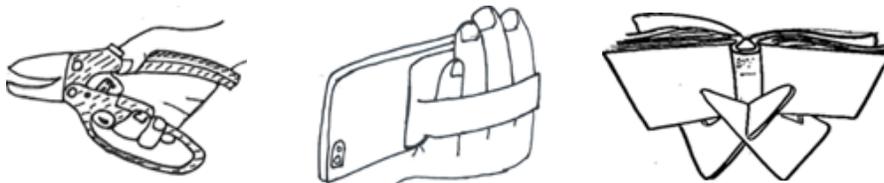
Leverage

- Less force is needed to turn or lift an object if the lever arm is long (e.g. jar opener, “L” shaped tools, lever door handles and taps)



Adaptive tools

- Spring loaded scissors/pruning shears and screwdrivers designed with a “ratchet,” improve grip strength and reduce strain on the thumb joints
- An electric jar or can opener provides better mechanical advantage
- A device rest, book holder or lap desk help reduce prolonged gripping and holding



Physical modalities

Heat

- Increases circulation which relaxes muscles. This helps to reduce pain and stiffness.
- Do not use if the joint is swollen
- E.g. hot bath, hot packs, wax bath
- Apply heat for 10–15 minutes

Cold

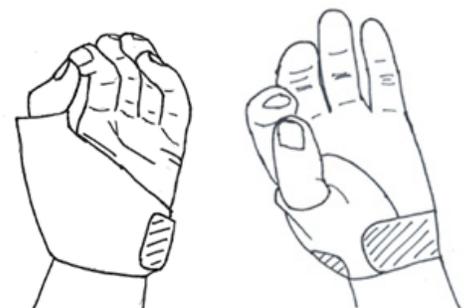
- Decreases circulation which helps to reduce pain and swelling
- Do not use if you have circulation problems in the hands (e.g. Raynaud’s phenomenon)
- E.g. cold water, ice packs, bag of frozen peas
- Apply cold for 10–15 minutes

Contrast Baths

- Increases and decreases circulation which helps reduce swelling and inflammation
- Use with caution if sensation is decreased or if Raynaud’s phenomenon is present
- Alternate between hot and cold (10 seconds cold, 10 seconds hot, repeat for 10 minutes)

Thumb splints

- Improves joint stability by holding the thumb in abduction and encouraging MCP and IP flexion
- Provides rest for joints and supports weak ligaments
- Opens the web space
- Reduces pain during functional activities
- May be worn at night to reduce pain



Thumb stability exercises

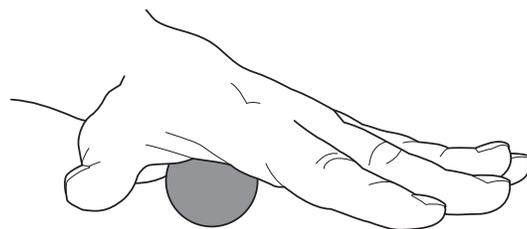
- These thumb exercises will help to maintain your hand mobility and reduce symptoms
 - Before doing the exercises, **warm your hands for 10 minutes** (e.g. warm water, paraffin wax) or follow these specific instructions provided by your therapist
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- **Quality of movement is more important than quantity.** Do the exercises slowly and carefully, even if you cannot complete the number of repetitions suggested.
 - Do these exercises **twice a day**. Connect them to another activity that you already do, to create a routine.
 - Focus on doing the first 2 exercises until you can do these without increasing your pain. Then continue with the other exercises as recommended by your therapist.
 - These exercises **should not increase your pain**. If your pain increases, **STOP** and contact your therapist.
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1a. Soften the web space (adductor muscle)

Use a small ball between your hand and the table to massage the muscle in the web space between your thumb and index finger.

Start with 20-30 seconds on areas that feel tight until the muscle releases. Repeat 1-2 times. Eventually you may be able to increase the time for up to 60 seconds as tolerated.



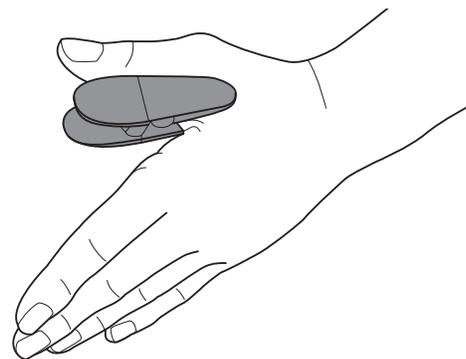
1b.

Use a kitchen clip to apply pressure to the muscles in your web space. Experiment with different clips for comfort.

You should **feel pressure but not pain** when the clip is on.

Start with 20–30 seconds. Repeat 1-2 times. Eventually you may be able to leave the clip on for up to 3–5 minutes as tolerated.

Tip: You can pad the clip to protect your skin if needed.



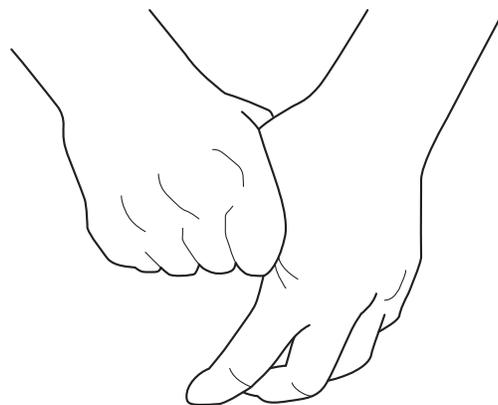
2. CMC joint release

While standing with your hands in front of your body, grasp your thumb at the web space as close to the CMC as you can using the opposite hand.

Relax your arms. Do not actively pull on your thumb; let the weight of your arm provide a gentle release.

Hold for 30 seconds then relax.

Repeat 3 times.



3a. Strengthening of 1st dorsal interosseus

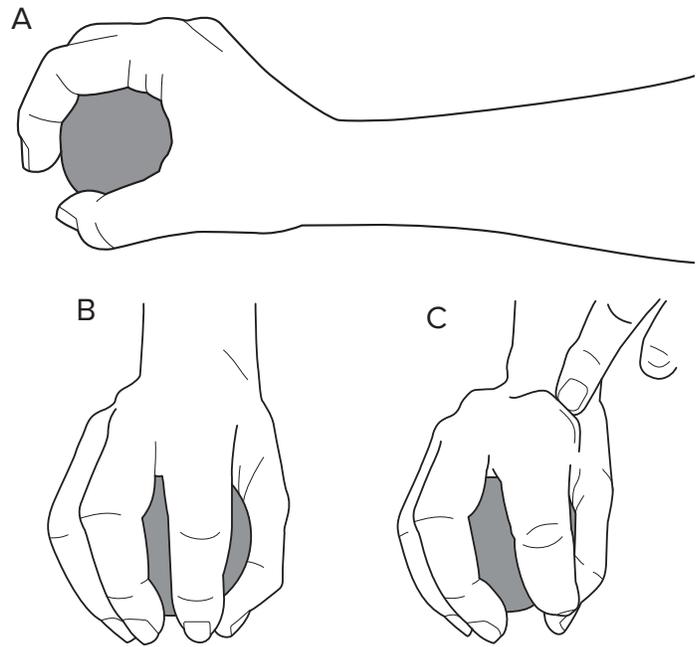
Start with your forearm and elbow resting on a table, with your hand supported on a ball. Your shoulder should be relaxed with your wrist in extension (A & B).

Slowly move your index finger towards your thumb, keeping your finger on the ball (C).

Then slowly return the index finger back to the starting position (B).

Relax.

Repeat 10 times.



3b.

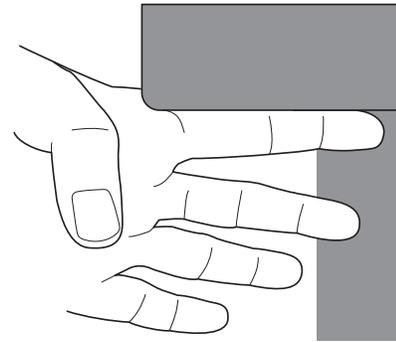
Gently press the thumb side of your index finger against the underside of a table. Use about 50% pressure.

Although your finger is not moving, you should feel tension in the muscle along the thumb side of the finger.

Hold for 5 seconds.

Relax.

Repeat 5-10 times.



4. Strengthening of “C” position

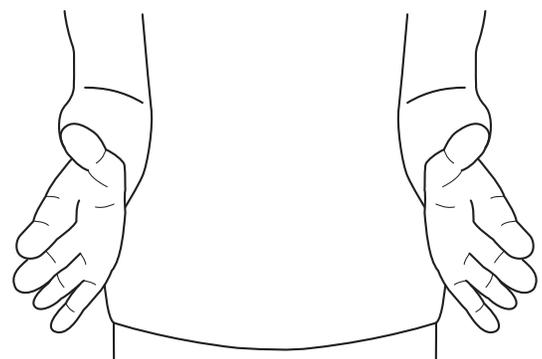
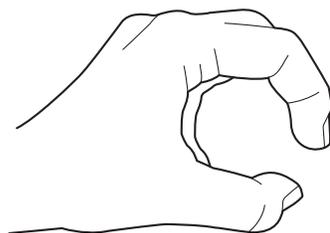
Start with your shoulders and elbows in a relaxed position, with your palms facing each other, wrists in neutral, and your hands in a flat position.

Curve your thumbs and fingers into a “C” shape.

Hold for 5 seconds then return to the starting position.

Relax.

Repeat 3-5 times.



5. “O-kay” position

Starting with an open hand (A), make an “O” touching the tip of the thumb to the tip of each finger. Keep all of the joints in your thumb bent to make the circle as round as possible. You should be able to see two knuckle “bumps” in the thumb (B).

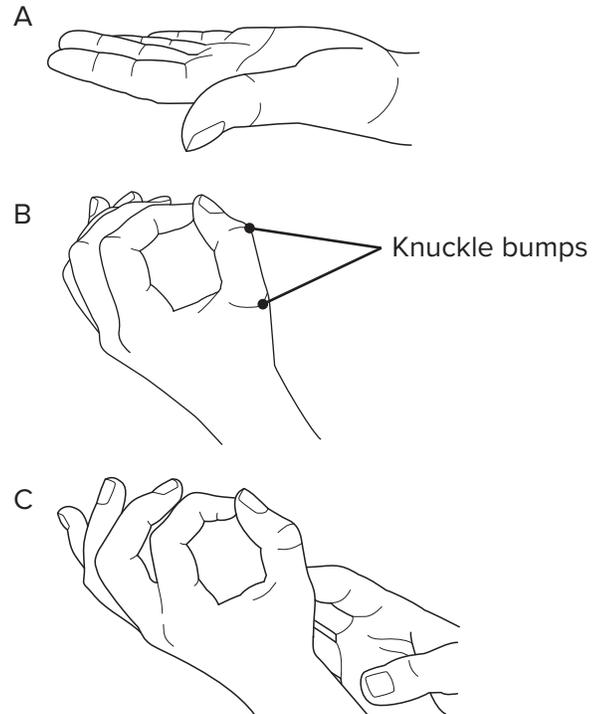
If you cannot make the circle round, use your other hand to gently push the thumb knuckles out into an “O” shape (C). Press the tips of the fingers together gently, making sure the “O” stays round as you apply pressure.

If it is difficult to reach the thumb to the finger tips, reach as close as you can while still keeping the thumb knuckles bent in the “O” shape.

Make an “O” with each finger.

Opening your hand completely after each touch.

Repeat 5-10 times.



6. Practice for daily activities

Practice doing activities which:

Involve pinching such as:

- writing
- opening clothes pegs
- tearing sheets of paper
- fastening buttons

Involve turning or twisting such as:

- putting nuts on bolts
- using a key in a lock
- turning a door knob
- opening a loose jar lid or bottle top

While doing the activity, use a **stable thumb position** where the top joints of the thumb are bent and the wrist is in slight extension. Think about bringing your fingers to your thumb.



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and families