

Mix of treatments could be way to restore hand function in thumb-base osteoarthritis

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The base of our thumb may be just a small part of our hand, but we rely on it more than we think. Arthritis in that area can have large consequences, often making simple actions such as picking up an object or opening a door an obstacle.

Osteoarthritis, which is a type of arthritis, is the most common chronic joint disorder and is increasing in prevalence, because of an aging population. Base-of-thumb [osteoarthritis](#) affects up to a third of women over the age of 70, but researchers say currently recommended treatments don't provide a lot of benefit, and many patients still have limited use of their hand.

Julia Lipski became increasingly aware of pain in her left hand for a while. She had been gradually renovating her home and found it increasingly difficult to do work and hold tools with her sore hand.

"At one stage I saw a hand surgeon about a large bony lump between my thumb and next finger, though he suggested that it would resolve over time, which it did, though my hand was not as

useful as it had been."

A randomized clinical trial led by Sydney researchers called the COMBO study, has found rather than a single solution, a combined approach of already available options. This includes education, a splint to support the thumb, hand exercises, and a pain relief gel could be a promising lead in helping volunteers with thumb base osteoarthritis regain hand function.

The hand exercises were designed to improve range of hand motion and included using chop sticks to pick up objects, paper tearing and line-tracing on a ball.

"Many [older adults](#) are affected by thumb base osteoarthritis and feel there is nothing that can be done for it," said senior author Professor of Medicine David Hunter, from the University of Sydney, Faculty of Medicine and Health and Institute of Bone and Joint Research at the Kolling Institute of Medical Research.

"This trial demonstrates clinically beneficial effects on hand function with readily available interventions."

Mix of treatment best approach

The findings, published today in *JAMA Internal Medicine*, was led by Dr. Leticia Deveza from the Institute of Bone and Joint Research and Sarah Robbins from the Kolling Institute of Medical Research.

"Previous studies on combined treatments in thumb base osteoarthritis have provided conflicting results," said Dr. Deveza.

"To our knowledge, ours is the first study to investigate a combination of non-pharmacological and pharmacological treatments in thumb base osteoarthritis—and importantly, we've found a

solution that could be of clinical benefit."

Julia was a participant of the COMBO study and found since then the strength and grip in her hand improved to a point she could hold, grasp and use heavy electric tools easily with her left hand, with little pain.

"I did the nominated hand exercise regime as specified, religiously every night for a few months. Clearly, my hand was improving as the micro muscles were being worked and strengthened."

Key findings

The randomized clinical trial had 204 participants divided into two groups, those who undertook the treatments and those who did not.

Both groups were given education about osteoarthritis and activity modification for joint protection and face to face sessions with a physiotherapist.

The treatment group received a neoprene splint that supported the base of the thumb and wrist, a topical gel and information about hand exercises, which the participants would perform three times a week.

Over 12 weeks, both groups were assessed on pain and hand function, which included thumb base pain, grip strength, thumb base stiffness, and overall quality of life and mental health.

- After 6 weeks, there was increased hand function for people who undertook the treatments and exercises compared to the control group.
- After 12 weeks participants also reported a better quality of life and reduction in pain.

Julia still continues to do some of the hand exercises while on the train or watching the news.

"Overall the outcome has been excellent, beyond my realistic expectations, with minimal discomfort along the way. And of course, I am still using my [hand](#) for ongoing renovation work, with minimal issues and pain."

"We are now hoping to refine the research and find out if there are particular subgroups of people with [thumb](#) base osteoarthritis that may have more profound effects," says Professor Hunter.

More information: Leticia A. Deveza et al. Efficacy of a Combination of Conservative Therapies vs an Education Comparator on Clinical Outcomes in Thumb Base Osteoarthritis, *JAMA Internal Medicine* (2021). [DOI: 10.1001/jamainternmed.2020.7101](#)

Provided by University of Sydney

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