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Thumbs Up for Thumb Strength in Carpal Tunnel Syndrome

Posted January 13th, 2006 by [Matt](#)
 in [Hand](#)

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Carpal tunnel syndrome (CTS) affects the median nerve as it goes through the bones of the wrist. The median nerve affects the sensation and strength of the thumb and first two fingers. It's logical to assume thumb strength is less with CTS. Researchers from the Hand Research Laboratory at the University of Pittsburgh tested this theory out.

They measured thumb strength in 12 women with CTS and compared it to 12 women without CTS. The women in both groups were about the same age. All 24 women were right-handed. Strength was measured in all directions including flexion (thumb down), extension (thumb up), abduction (thumb away from hand), and adduction (thumb toward hand).

The authors report they did not find decreased thumb strength in motion controlled by the median nerve for patients with CTS. They actually had more weakness in directions controlled by the ulnar nerve. Direct weakness of nerve-specific muscles just wasn't found.

The researchers offer some possible reasons for their findings:

- CTS may cause general hand weakness from disuse that affects the thumb
 - The other nerves adapt and take over for the damaged nerve
 - The nerves may signal the brain to stop painful activities that are repeated over and over; this looks like weakness
 - Severity of pain isn't always linked with loss of strength
 - Function may be limited more by loss of sensation than strength in the hand.
- This is especially true for manipulation tasks that require complex sensorimotor function

The authors conclude that testing muscle strength of the thumb may not be a good indicator of how severe the CTS is. They suggest a larger study is needed to prove or disprove these results.

Zong-Ming Li, PhD, et al. Thumb Strength Affected by Carpal Tunnel Syndrome. In *Clinical Orthopaedics and Related Research*. December 2005. No. 441. Pp. 320-326.

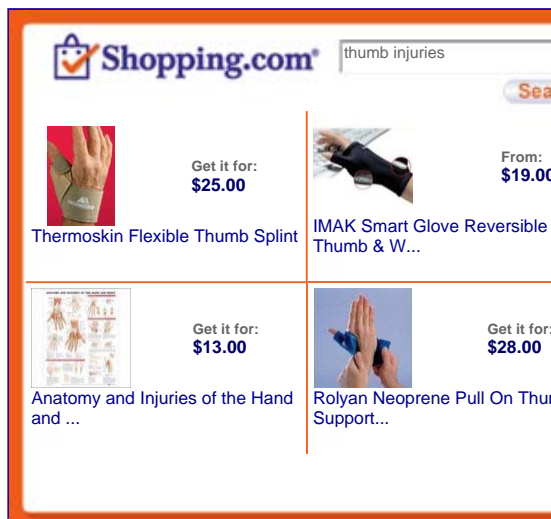
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Shopping.com search results for "thumb injuries". The results are displayed in a 2x2 grid:

- Top Left:** Thermoskin Flexible Thumb Splint. Price: Get it for: \$25.00. Image shows a hand with a splint.
- Top Right:** IMAK Smart Glove Reversible Thumb & W... Price: From: \$19.00. Image shows a hand in a black glove.
- Bottom Left:** Anatomy and Injuries of the Hand and ... Price: Get it for: \$13.00. Image shows a hand diagram.
- Bottom Right:** Rolyan Neoprene Pull On Thurn Support... Price: Get it for: \$28.00. Image shows a hand in a blue support.

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