

# Cast Immobilization With and Without Immobilization of the Thumb for Nondisplaced Scaphoid Waist Fractures: A Multicenter Randomized Controlled Trial

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**Purpose:** This trial was conducted to test the null hypothesis that there is no difference in union or arm-specific disability between nondisplaced scaphoid waist fractures treated in a below-elbow cast including or excluding the thumb.

**Methods:** 55 patients with a nondisplaced fracture of the scaphoid waist were enrolled in a prospective multicenter randomized controlled trial comparing treatment in a below-elbow cast including the thumb with a below-elbow cast excluding the thumb. Due to a misunderstanding at some centers, 7 distal scaphoid fractures were enrolled during the early part of the trial for a total of 7 distal and 55 waist fractures. We adhered to strict intention-to-treat principles. The primary study question addressed the extent of union on CT performed after 10 weeks of cast treatment and expressed as a percentage of the fracture line that had bridging bone by musculoskeletal radiologists blinded to treatment. Secondary study questions addressed wrist motion, grip strength, Mayo wrist scores, DASH (Disabilities of the Arm, Shoulder and Hand) scores, pain, and union at 6 months after treatment.

**Results:** There was a significant, but clinically irrelevant, difference in the extent of union on CT at 10 weeks (85% vs 70%), favoring treatment with a cast excluding the thumb. One waist fracture treated with the thumb immobilized elected operative treatment 1 week after enrollment used crutches and developed nonunion (98% union overall; 100% union with nonoperative treatment). There were no significant differences between the groups for wrist motion, grip strength, Mayo wrist scores, DASH scores, pain scores, or union.

**Conclusion:** Fractures of the scaphoid waist can be adequately treated in a below-elbow cast excluding the thumb.

## Current Faculty and Residents

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