

How Quickly Do Patients Return to Function After Nonoperative Treatment of Isolated Humeral Shaft Fractures?

Brian W. Hill, MD; Lisa K. Cannada, MD; Lauren Nelson, MD; Paul Tornetta, MD; Robert Hymes, MD; Clifford B. Jones, MD, FACS; William T. Obremskey, MD, MPH; Eben A. Carroll, MD; Brian Mullis, MD; Michael Charles Tucker, MD; David C. Teague, MD; Andrew J. Marcantonio, DO; Robert F. Ostrum, MD; Michael Del Core, MD; Heidi Israel, PhD, RN
Saint Louis University, St. Louis, MO, United States

Purpose: Humeral shaft fractures have a high union rate after nonoperative management. While radiographic union has been well documented, the recovery curve has not. The purpose of this study is to characterize the functional recovery of patients treated nonoperatively for isolated humeral shaft fractures using validated patient-reported outcome measures (PROMs).

Methods: Prospective data from patients with isolated humeral shaft fractures who were followed as part of a multicenter trial (Clinical Trials# 01363518) were analyzed. Patients with a radial nerve palsy and those who went on to surgery were excluded. Outcome measures included the Disabilities of the Arm, Shoulder and Hand (DASH), Short Form-36 (SF-36), and visual analog scale (VAS) pain scores as well as return to work status. Return to function (RTF) for each PROM was defined as the point at which the patient's score was less than the minimal clinically important difference (MCID) from the population normative values. Patient scores were obtained at 12, 26, and 52 weeks.

Results: 80 patients (47 male, 33 female) aged 18-71 years (average = 40) with isolated humeral shaft fractures treated to union comprised the study cohort. 38 (48%) of the injuries were to the dominant arm and 5 (7%) were work-related. Time to RTF for the VAS pain was 12 weeks, the SF-36 was 24 weeks, and the DASH was 52 weeks from injury. At 24 weeks from injury, 50 patients (62%) returned to work in some capacity.

Conclusion: The recovery from nonoperative management of an isolated humerus fracture is gradual, with pain improving for the first 3 months and DASH requiring 1 year. Patients should be counseled about the lasting consequences of this injury so they may set realistic expectations and modulate functional demands.