

## Ambulatory Ability Diminishes Following Lower Extremity Fractures in the Geriatric Population

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**Background/Purpose:** One of the most important treatment goals after lower extremity injury is return to normal ambulation. It has been shown consistently throughout the literature that geriatric patients who sustain a hip fracture have approximately a 50% probability of regaining their preinjury ambulation status. However, no studies have examined the rate that patients need additional assistive devices to ambulate on a daily basis after lower extremity fractures. The purpose of this study is not only to determine the frequency of requiring a new assistive device after lower extremity fractures, but also evaluate which fractures resulted in the most long-term ambulation disability.

**Methods:** At a single Level I trauma center from June 2014 to August 2015, 476 orthopaedic and trauma surgery patients age  $\geq 65$  years were enrolled in a prospective registry. On initial evaluation, patients' demographics, injury characteristics, and functional status, including baseline ambulatory status and use of an assistive device, were collected. Patients were examined in the outpatient setting or contacted via telephone interviews to ascertain if they were currently using a new assistive device and what they estimated was the percentage of return to their baseline. Only patients who had sustained a lower extremity fracture (hip, femur, knee, tibia/fibula, foot/ankle), were  $>65$  years old, and had at least 6 months follow-up from their initial injury were included in this study. Univariate examination was performed using Pearson's  $\chi^2$  analysis for nominal variable and ANOVA (analysis of variance) when comparing means between multiple groups, with significance set at  $P < 0.05$ .

**Results:** Of the 239 patients contacted, 110 had sustained a lower extremity fracture. The study population was an average age of  $78.1 \pm 11.1$  years and was followed up for an average of  $300 \pm 125$  days. There were no significant differences noted between fracture types regarding their ambulation devices both before and after their injury (Table 1). It should be noted that patients who had hip fractures were significantly less likely to be community ambulators, even while 63% of this population were using an assistive device at this time. 66.4% of patients were using a new assistive device after their lower extremity injury (either from none to one or from one to another). No significant differences was seen in the rate of additional need of a device when comparing operative versus nonoperative treatment (66.7% vs 64.7%,  $P = 0.88$ ). While only 31 patients (28.4%) stated that they returned to their functional baseline, 54 (49.1%) were able to walk outside and 52 (47.3%) did not need any help with their daily life activities.

**Conclusion:** Approximately 65% of patients in this study required an assistive device at least 6 months after their lower extremity fracture. There was no significant difference related to fracture location or operative versus nonoperative treatment. These results should be used to advise patients on ambulatory expectations after a lower extremity fracture.

Table 1

Fracture Location	Hip	Femur	Knee	Tibia/Fib	Foot/Ankle	P-value
Number of Patients	64	17	6	6	17	
<b>Pre-injury Characteristics</b>						
Community Ambulators	64.4%	69.2%	100.0%	75.0%	81.2%	0.01
Use of Assistive Device	47.5%	38.5%	0.0%	25.0%	31.2%	0.18
Dependence on Others	61.0%	61.5%	100.0%	75.0%	75.0%	0.33
<b>Post-injury Characteristics</b>						
% return to baseline	63.6%	62.4%	77.5%	61.7%	72.7%	0.58
Additional Assistive Device	68.8%	58.8%	50.0%	83.3%	64.7%	0.72

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.