

## Comparison of Clinical Outcomes and Cost in Civilians With Early and Late Traumatic Lower Extremity Amputations With Standardized Prosthetic Care

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**Purpose:** There is a paucity of data regarding outcomes of early versus late below-knee amputation after traumatic injury in civilian populations. The purpose of this study was to investigate the clinical outcomes and cost affiliated with early versus late below-knee amputation following traumatic injury.

**Methods:** Subjects who underwent a below-knee amputation for a traumatic injury at a single Level-I trauma center and received standardized prosthetic care from a single manufacturer from 1999 to 2016 with minimum 2-year post-amputation follow-up were retrospectively identified. Demographics, surgical management, postoperative course, hospital, and prosthetic cost data were collected.

**Results:** Overall, 79 patients met criteria. Early amputation (EA) was defined by median duration between injury and amputation (42 days) with 41 subjects in the EA group and 38 subjects in the late amputation (LA) group. Subjects in the EA group were more likely to have open fractures—39/41 (98%) versus 19/38 (51%);  $P < 0.0001$ . Postoperative wound complications were common in both the EA and LA groups—17/41 (42%) versus 17/38 (45%);  $P = 0.77$ . Patients in the EA group were more likely to require unplanned post-amputation revision—22/41 (54%) versus 10/38 (27%);  $P = 0.017$ . Hospital costs and prosthetics/orthotics costs from the time of injury to 3 years following amputation were comparable, with median hospital EA costs \$121,112 versus LA costs \$95,814 ( $P = 0.39$ ). Median prosthetics/orthotics costs of EA subjects were \$31,889 versus LA costs of \$34,550 ( $P = 0.33$ ).

**Conclusion:** Unplanned post-amputation revision surgeries were more common with early below-knee amputation while 3-year post-amputation hospital and prosthetics/orthotics costs were comparable. Further investigation is required to determine long-term pain and function in EA versus LA patients.