

Long–Term Self–Reported Functional Outcomes following Unilateral Major Lower Extremity Combat Injury – Preliminary Results from the METALS II Study Group

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What was the question?

The Military Extremity Trauma Amputation/Limb Salvage (METALS) study published in 2013 described the self–reported outcomes of patients with combat sustained major lower extremity trauma at an average 38.9 ± 13.7 months post–injury. Using the Short Musculoskeletal Function Assessment (SMFA), this study suggested better SMFA outcomes for patients with amputation versus reconstruction, though all patients regardless of limb status experienced significant decrements in function compared to population norms. In this study, we followed the METALS cohort several years later to determine whether functional outcomes change over time and whether differences in outcome by treatment persist.

How did you answer the question?

All patients who were initially interviewed as part of the METALS study were contacted by telephone at an average of 157.0 ± 14.5 months post–injury . We were able to locate and interview a total of 277 individuals for an overall response rate of 64%. Preliminary results herein compare the overall SMFA Dysfunction score together with the Activities of Daily Living and Mobility sub scores of the SMFA at Time 1 (initial interview) and Time 2 (follow–up interview). An increase in SMFA score indicates greater degree of dysfunction and a 6 point change was considered a difference. Populations norms have been reported to average 12.7 for Dysfunction, 11.8 for Activities of Daily Living scales, and 13.6 for Mobility.

What are the results?

Included in this preliminary analysis, are 85 patients who underwent unilateral lower limb reconstruction and 81 patients who underwent unilateral lower limb amputation. SMFA overall Dysfunction Score [mean (standard deviation)] for reconstruction patients at Time 1 and Time 2 interviews was 30.7 (15.9) and 31.8 (16.8), respectively with 26 oing better and 26 oing worse; amputation patients' SMFA Dysfunction at Time 1 and Time 2 was 20.7 (14.0) and 25.7 (13.1), respectively, with 19 oing better but 42 oing worse. Activities of daily living scales for unilateral reconstruction patients at Time 1 averaged 29 (19.6) and Time 2 30.3 (21.7) with 30 oing better and 37 oing worse. For unilateral amputees, activities of daily living results at Time 1 20.2 (18.8) and Time 2 25.2 (17.5) with 23 oing better and 37 oing worse. Time 1 and Time 2 Mobility scores were 38.5 (20.8) and 38.5 (21.0), respectively, for limb reconstruction patients [34 oing better, 24 oing worse]; and 25.4 (17.7) and 31.9 (15.9), respectively, for amputation patients [23 oing better, 55 oing worse].

What are your conclusions?

Major lower extremity trauma is associated with poor functional outcomes at an average of 13 years post–injury relative to population norms. These preliminary results at a timepoint quite distal to injury in US combatants suggests that self–reported functional and outcomes may decline with time, especially for patients undergoing early amputation. Differences in outcomes between patients undergoing amputation versus reconstruction found at Time 1 appear to be somewhat attenuated at Time 2. Controlled analyses of these are ongoing to describe if clinical meaningful changes in outcomes occur over time.