**Changes in Functional Outcomes Over Time Following Major Lower Limb Trauma Among Veterans Undergoing Primary Amputation versus Limb Salvage**

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**Purpose**: Major limb trauma remains a common military combat injury and source of disability. Prior studies have demonstrated that service members who underwent primary amputation rather than limb salvage had better functional outcomes following severe limb trauma. The goal of this study was to compare the early functional outcomes (approximately 3 to 6 years post-injury) of service members sustaining major lower limb trauma during the early (2003-2007) and later (2008–2013) periods of the Global War on Terrorism.

**Methods**: Interviews were completed among 2 cohorts of service members who sustained a limb-threatening lower extremity injury between 2003-2007 (n = 324) or 2008-2013 (n = 288). The Short Musculoskeletal Function Assessment (SMFA) questionnaire was used to determine overall levels of dysfunction as well as scores within each SMFA domain. Participants were stratified by injury based on receiving primary amputation or limb salvage treatment. Multiple linear regression analyses assessed the relationship between changes in functional outcomes over time between cohorts while adjusting for time between injury and interview, age, pay grade, presence of a severe upper extremity injury, as well as levels of educational attainment, social support, and combat experiences.

**Results**: Both cohorts were similar across most baseline covariates, with exceptions of time to interview (early vs later cohort: 37.5 and 91.8 months, respectively; P<0.001) and rates of amputation (early vs later cohort: 56.2% and 64.9%, respectively; P = 0.031). Multivariate regression of SMFA dysfunction found that scores for the later cohort were 7.2 points higher (worse) than the early group (P = 0.005) and that scores for amputees were 5.8 points lower (better) than salvage participants (P<0.001). Having a severe upper extremity injury resulted in a 5.7-point higher score (P = 0.013), although this effect differed by cohort (6.7 points lower in later cohort, P = 0.07). Individuals with the highest combat experience scored 8.1 points higher than those with the least exposure (P<0.001) while better outcomes were found as participant pay grade (–5.3, P = 0.010) and level of social support (–12.5, P<0.001) increased to their highest categories.

**Conclusion**: Despite an increased proportion of amputations among patients injured later, SMFA Dysfunction was significantly worse in this cohort. Considerable long-term disability continues to afflict those who suffer major combat-related limb injuries.