

**Measuring Outcomes Over Time in Tibial Plafond Fractures: A Comparison of Generic, Musculoskeletal-Specific, and Foot and Ankle-Specific Outcome Measures**

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**Purpose:** The standard in measuring results of treatment in orthopaedic trauma are the validated functional outcome measures. New outcome measures are often tailored to a specific disease, theoretically improving the ability to detect change in the disease compared to generic measures. Most new functional outcome measures are tested for validity and reliability, but not responsiveness, or the ability to detect clinical change over time. This prospective study compared the responsiveness of a generic (Short Form-36 Physical Component Summary, SF-36 PCS), a musculoskeletal-specific (Short Musculoskeletal Function Assessment Disability Index, SMFA), and foot and ankle-specific (Foot and Ankle Outcome Score Activities of Daily Living, FAOS) outcome score when evaluating surgically treated tibial plafond fractures over time.

**Methods:** This prospective study evaluated 51 patients who received operative intervention for a tibial plafond fracture. The SF-36, SMFA, and FAOS outcome measures were collected at baseline, 6 months, and 12 months post injury. Responsiveness was calculated through the standard response mean (SRM), the proportion meeting a minimal clinically important difference (MCID), and floor and ceiling effects. Statistical analysis comparing outcome scores was assessed through paired t test for SRM, McNemar's test for MCID, and a threshold of 10% for floor and ceiling effect.

**Results:** The SRM of the SF-36 was significantly greater than the SMFA and FAOS between baseline and 6 months ( $P < 0.01$ ,  $P = 0.02$ ). Between 6 and 12 months, the SRM of SF-36 was significantly greater in magnitude than the SMFA ( $P = 0.02$ ), but was not significantly different from the FAOS. The proportion of patients achieving MCID for SF-36 PCS was consistently higher than SMFA and FAOS between baseline and 6 months ( $P = 0.04$ ,  $P = 0.03$ ). However, between 6 and 12 months, there was no significant difference between the 3 scores. No floor or ceiling effects were observed for the SF-36. The FAOS showed significant ceiling effects at baseline (84.3%) and at 12 months (11.3%).

**Conclusion:** This study shows that the SF-36 has greater responsiveness in assessing tibial plafond fractures compared to the SMFA and FAOS, particularly in the first 6 months. Despite the belief that musculoskeletal and anatomy-specific scores are a superior outcome measure to generic scores, limitations were revealed in the SMFA and FAOS. This supports the use of the generic outcome measure SF-36 in assessing patient recovery following tibial plafond fractures.