

## **Title: Clinical Frailty Scale as a Tool to Predict Outcomes After Lower Extremity Amputation Among Patients with Diabetes**

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### **Abstract**

The primary aim of this study was to investigate how the Clinical Frailty Scale (CFS) associates with survival of patients with diabetes after lower extremity amputation (LEA). Previous studies have shown that frailty predicts postoperative complications and mortality; however, this association has not been previously examined in patients with diabetes suffering from foot problems.

This retrospective cohort study included patients with diabetes undergoing nontraumatic LEA at Tampere University Hospital during 2007-2020. Kaplan-Meier and Cox regression analyses were performed to evaluate the effect of CFS on overall survival (OS), amputation-free survival (AFS) and leg salvage (LS).

A total of 1043 patients with mean age 71.0 years were included. Compared to patients with low CFS (1-2), scores 3-4 and 5-9 were associated with reduced OS (HR 1.821,  $p < 0.001$ ; HR 4.585,  $p < 0.001$ ), AFS (HR 1.575,  $p < 0.001$ ; HR 4.031,  $p < 0.001$ ) and LS (HR 1.435,  $p = 0.049$ ; HR 2.478,  $p < 0.001$ ). The multivariable Cox regression analysis showed that CFS remained a significant predictor of OS, AFS and LS.

This study demonstrates a high prevalence of frailty among patients with diabetes undergoing LEA, suggesting that frailty assessment should be integrated into clinical decision-making for this patient population. The CFS score appears to be promising tool for evaluating patients facing amputation to enhance survival rates.