

## A Systematic Review and Meta-Analysis in Slow Gait Speed and Its Association with Worse Postoperative Outcomes in Cardiac Surgery

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**Abstract :** Background: Frailty is associated with poorer outcomes in cardiac surgery, but the heterogeneity in frailty assessment tools makes it difficult to ascertain its true impact in cardiac surgery. Slow gait speed is a simple, validated, and reliable marker of frailty. We performed a systematic review and meta-analysis to examine the effect of slow gait speed on postoperative cardiac surgical patients. Methods: PubMed, MEDLINE, and EMBASE databases were searched from January 2000 to August 2021 for studies comparing slow gait speed and "normal" gait speed. The primary outcome was in-hospital mortality. Secondary outcomes were composite mortality and major morbidity, AKI, stroke, deep sternal wound infection, prolonged ventilation, discharge to a healthcare facility, and ICU length of stay. Results: There were seven eligible studies with 36,697 patients. Slow gait speed was associated with an increased likelihood of in-hospital mortality (risk ratio [RR]: 2.32; 95% confidence interval [CI]: 1.87-2.87). Additionally, they were more likely to suffer from composite mortality and major morbidity (RR: 1.52; 95% CI: 1.38-1.66), AKI (RR: 2.81; 95% CI: 1.44-5.49), deep sternal wound infection (RR: 1.77; 95% CI: 1.59-1.98), prolonged ventilation >24 h (RR: 1.97; 95% CI: 1.48-2.63), reoperation (RR: 1.38; 95% CI: 1.05-1.82), institutional discharge (RR: 2.08; 95% CI: 1.61-2.69), and longer ICU length of stay (MD: 21.69; 95% CI: 17.32-26.05). Conclusion: Slow gait speed is associated with poorer outcomes in cardiac surgery. Frail patients are twofold more likely to die during hospital admission than non-frail counterparts and are at an increased risk of developing various perioperative complications.

**Keywords :** cardiac surgery, gait speed, recovery, frailty

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