

## Stair dimension affects knee kinematics and kinetics in patients with good outcome after TKA similarly as in healthy subjects

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Joint biomechanics during stair walking may contain important information on functional deficits in patients with orthopaedic conditions but depend on the stair dimension. The goal of this study was to compare knee kinematics and kinetics between patients with good outcome 2 years after total knee arthroplasty (TKA) and age-matched controls during stair ascent and descent at two different stair heights. Principal component analysis was used to detect differences in gait mechanics between 15 patients and 15 controls at different stair conditions. Linear mixed models showed differences in knee kinematic and kinetic patterns (in flexion/extension and abduction/adduction) between stair heights. The knee adduction angle was more affected by stair heights in stair ascending whereas knee adduction moment and knee power were more affected during stair descent. Some stair by height and subject effects were small but not significant. Overall, good outcome after TKA is reflected in close-to-normal knee biomechanics during stair walking. Specific stair configuration must be considered when comparing joint biomechanics between subject groups and studies. This article is protected by copyright. All rights reserved.

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