

PATIENTS SPEAK THE TRUTH: PATIENTS WHO SELF-REPORT POOR IMPROVEMENTS IN PAIN AND FUNCTION AFTER TKA DO NOT DEMONSTRATE OBJECTIVE FUNCTIONAL IMPROVEMENT DURING GAIT

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ORTHOPAEDICS

BACKGROUND: Over 20% of patients do not report clinically relevant improvements in pain and function after total knee arthroplasty (TKA). This study 1)examined if patients not self-reporting meaningful improvements post-TKA (pain and function non-responders) demonstrated objective improvements during gait, and 2)characterized baseline demographic and gait features of non-responders, to aid in preoperative identification.

METHODS: Forty-five patients underwent gait analysis and completed Western Ontario and McMaster University Osteoarthritis Index (WOMAC) questionnaires one-week pre and one-year post-TKA. Non-responders for pain and function were defined by improvements ≤ 23 and 19 in WOMAC pain and function sub-scores. Pre/post-TKA gait changes within responder and non-responder groups were examined using paired t-tests. Differences between responder and non-responder groups at baseline were examined using un-paired t-tests. Linear models examined features contributing to WOMAC pain and function improvement.

RESULTS: Overall, 11/45 and 9/45 were non-responders in pain and function. Pre-TKA, non-responders were less symptomatic(WOMAC-Total, $p < 0.05$), had less radiographic severity($p = 0.04$), tended to be older($p \geq 0.05$), and walked with greater stance-phase varus angle magnitudes($p = 0.05$). At one-year post-TKA, non-responders demonstrated a large reduction in dynamic varus angle magnitudes during gait($p < 0.01$); no other mechanics improved. *Responders* showed less dynamic varus magnitude reductions, and improved adduction moment, flexion moment, and flexion angle mechanics($p < 0.001$). Using regression analysis, older age, greater BMI, larger dynamic varus magnitudes and more flexion moment range-of-motion contributed to less improvement in self-reported function($r^2 = 40\%$).

CONCLUSION: Non-responders in self-reported pain and function after TKA demonstrate poor objective function improvements during gait, and experience more dynamic varus angle corrections from surgery. Older age and high dynamic varus magnitudes may suggest more severe osteoarthritis pre-TKA, yet misrepresent appropriate candidacy.