

PAIN AND FUNCTION IN KNEE OSTEOARTHRITIS:
ARE THEY RELATED TO LOCAL INTRINSIC FACTORS?

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ABSTRACT

OBJECTIVE: The study of knee osteoarthritis (OA) has been hampered by the inability to adequately characterize the subject pool with respect to local intrinsic factors and there is little evidence to guide the selection of factors for future study. This study characterized a subject pool by local intrinsic factors and makes an evidence-based recommendation for the inclusion of specific factors in future study of knee OA.

METHOD: Forty six subjects with knee osteoarthritis were examined. Observed function was measured by the Timed Chair Rise Task. Self-reported function was measured by the WOMAC Function Scale and pain was measured by the WOMAC Pain Scale. Local intrinsic factors measured included Varus/Valgus Alignment, A/P Laxity, Proprioception, Knee Extension Strength by Bodyweight, Knee Flexion Strength by Bodyweight, and Knee ROM.

RESULTS: Factors were recommended for inclusion in future research if they were significantly correlated with at least one measure of function or pain and if the factor made a significant unique contribution to a regression model when more than one local intrinsic factor was correlated with the same measure of function or pain. Extension Strength by Bodyweight was correlated with observed function ($r=0.32$, $p=0.03$). Varus/Valgus Alignment was correlated with pain ($r=0.48$, $p=0.001$) and self-reported function ($r=0.38$, $p=0.009$). A/P Laxity was also correlated with pain ($r=0.30$, $p=0.04$) and self-reported function ($r=0.37$, $p=0.01$). Knee ROM was correlated to self-reported function ($r=-0.35$, $p=0.016$). Varus/Valgus Alignment made a significant contribution to prediction of pain ($p=0.003$), A/P Laxity to self-reported function ($p=0.004$), and Knee ROM to self-reported function ($p=0.008$).

CONCLUSION: It is recommended that future studies of knee OA characterize the subject pool by Varus/Valgus Alignment, A/P Laxity, Knee ROM, and Extension Strength by Bodyweight.