

## ANTERIOR KNEE PAIN AND CLOSED CHAIN DORSIFLEXION RANGE OF MOTION

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Fairview/IAM Physical Therapy Sports Residency Research

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This study was approved by the University of MN IRB. Each subject signed an informed consent prior to participation.

**BACKGROUND AND PURPOSE:** Measuring closed chain dorsiflexion in patients with lower extremity injuries is gaining popularity amongst physical therapists. The purpose of this study was to determine if there is a difference in closed-chain dorsiflexion range of motion (ROM) when comparing the non-affected and affected side of patients with unilateral anterior knee pain.

**SUBJECTS:** There were 22 subjects (10 males and 12 females).

**METHODS:** Two methods were utilized for measuring dorsiflexion ROM: distance from the wall to the great toe, and degrees of tibial inclination.

**ANALYSIS:** Statistical analysis was performed using SPSS. Independent sample, T-tests were utilized for data analysis. The alpha value was set a 0.05.

**RESULTS:** For the distance from the wall to the great toe, there was no statistically significant difference ( $p=.682$ ) between the affected side (13.0cm) and unaffected side (13.4cm). For tibial inclination angle there was no statistically significant difference ( $p=.843$ ) for the affected ( $41.6^\circ$ ) versus unaffected ( $41.3^\circ$ ) limbs. When comparing the affected sides (distance; degrees) of males (13.6cm;  $40.9^\circ$ ) verses females (12.5cm;  $42.3^\circ$ ), there was no statistically significant difference ( $p=.459$ ;  $p=.640$ ).

**CONCLUSION:** These results indicated that functional dorsiflexion ROM may not be a contributing factor to unilateral anterior knee pain.

**IMPLICATIONS:** Clinicians may choose not to prioritize ankle ROM as a major contributing factor to unilateral anterior knee pain. It is possible that treating the knee, and up the kinetic chain into the hip is of more value for this population. More research is needed regarding these topics of interest. The inclusion criteria of 'unilateral anterior knee pain' is very broad and may include a multitude of diagnoses. Future studies should delineate a more homogeneous population.