

The Effects of Open Kinetic Chain Versus Closed Kinetic Chain Ankle Strengthening Exercises on Functional Ankle Instability: A Pilot Study

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INTRODUCTION: The association between the ankle “giving way”, ankle strength and range of motion were examined in adults with ankle instability.

PURPOSE: This study included 18 adults with ankle instability justified by the Identification of Functional Ankle Instability (IdFAI) questionnaire and a health questionnaire regarding previous injuries. Four-way ankle strength and dorsiflexion and plantarflexion range of motion were measured before and after a six-week exercise intervention.

METHODS: Participants were assigned to an open kinetic chain, closed kinetic chain, or control group. Theraband exercises were prescribed for the open kinetic chain group. Squats and lunges were prescribed for the closed kinetic chain group. The control group received no intervention. Strength and range of motion changes were observed six weeks later. A mixed analysis of variance was used to measure between group comparisons for each parameter over time.

RESULTS: There is an increased trend in the open and closed kinetic chain group in strength when compared to the control. No significant differences were measured between groups and IdFAI scores did not change for any group.

CONCLUSION: With regard to ankle instability, closed kinetic chain exercises may be associated with greater strength gains resulting in enhanced stability of the ankle joint. A larger sample size and longer treatment may result in further significant findings.