

The Role of Hip Abductor and External Rotator Muscle Strength in the Development of Exertional Medial Tibial Pain: A Prospective Study

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Summary:

Identification of the role of hip muscle weakness as a risk factor in the development of exertional medial tibial pain (EMTP).

Abstract:

Objective:

To prospectively identify proximal risk factors contributing to the development of exertional medial tibial pain (EMTP).

Methods:

Data were prospectively collected on healthy female students in physical education, who were freshmen in 2010-2011 and 2011-2012. Ninety-five female students aged 18.15 ± 0.84 , were tested at the beginning of their first academic year. Testing included isokinetic hip strength measurements of abductors, adductors, internal rotators and external rotators. The follow-up of the subjects was assessed using a weekly online questionnaire and a three-monthly retrospective control questionnaire. EMTP was diagnosed by an experienced M.D. (Doctor of Medicine). Cox regression analysis was used to identify the potential risk factors for the development of EMTP.

Results:

Twenty-one subjects were diagnosed with EMTP during follow-up. The results of this study identified that decreased hip abductor concentric strength is a predictive parameter for the development of EMTP in females. More specific, total work ($P=0.010$) and average power ($P=0.045$) for concentric abduction strength were found to be significant predictors for this lower leg overuse injury.

Conclusions:

Hip abductor weakness is a significant predictor for EMTP in females. Preventive screening methods for EMTP should therefore include this proximal contributing factor.