

Timing of Nordic Hamstring Exercise in Youth Soccer Players to Reduce Injury

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ABSTRACT

The Nordic hamstring exercise (NHE) has been demonstrated to be an effective strength exercise to help mitigate the risk of hamstring injury in soccer players. It is a component of the FIFA 11+ grassroots injury prevention program, which is a series of warm-up exercises designed to be administered in large groups and at minimal cost. Recent evidence in adults suggests that the acute fatigue associated with the NHE may increase the risk of injury during training, causing some to suggest moving the NHE until the end of training. **PURPOSE:** To determine whether this same level of fatigue persists in young soccer players, where training intensities and volumes are often much lower than in adults. **METHODS:** We designed a field-based crossover experimental study where youth soccer players completed two experimental sessions in a randomized manner. Participants included 18 youth players (mean \pm SD: males, $n=18$; age 15.5 ± 0.7 years, height 1.77 ± 0.13 m, weight 66.4 ± 10.8 kg) participating in the Major League Soccer (MLS) Next player development pathway in Phoenix, USA. One session included the NHE as part of a standardized warm-up prior to a 75-minute standardized training session, and the alternative session incorporated the NHE at the end of the training session. Maximal hamstring force was measured at baseline, post-warm-up, and after completion of training. **RESULTS:** There was no interaction, condition, or main effect of NHE timing as indicated by maximal force output in the left ($p > 0.69$) and right leg ($p > 0.65$). **CONCLUSION:** Our findings add to the growing body of literature with regard to lower-limb fatigue profiles and adolescent soccer players, as well as suggest youth soccer coaches should not be concerned with the timing of these interventions, allowing them to focus instead on adherence and player buy-in.