SWACSM Abstract

Time since injury influences eccentric hamstring force imbalance in non-injured collegiate American football players

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ABSTRACT

Hamstring injuries (HSI) are among the most common non-contact injuries in American football. Understanding effects of duration since injury may inform how coaches, trainers, and athletes approach rehabilitation and return to play decisions. **PURPOSE**: To compare hamstring imbalance in athletes injured more than 12 months ago to hamstring imbalance in athletes with no HSI and compare hamstring imbalance in athletes injured within the last 12 months to imbalance in those with no HSI. **METHODS**: Sixty-one collegiate football players (age: 22.5 ± 1.8, height: 187.6 ± 6.2 cm, weight: 105 ± 21.6 kg) rostered in 2022 self-identified as having either (1) no HSI (n=45), or (2) having injured only one hamstring since grade 9. We separated those reporting previous injuries into two groups: those with injury longer ago than 12 months (historical HSI, n=12) and those injured with the last 12 months (recent HSI, n=4). All players performed eccentric hamstring curls on a Nordbord. For the group with no HSI, imbalance between legs was calculated as the stronger minus weaker leg. For both injured groups, imbalance was calculated as the difference between uninjured and injured legs. **RESULTS**: Analysis of the means was performed via Bayesian methods, assuming separate standard deviations for each group. Analysis of posterior chains indicated all parameters converged appropriately. The posterior mean of imbalance for players with no HSI was 34.7 ± 27.4 N. The posterior mean of imbalance in those with historical HSI was 10.8 ± 51.1 N. The posterior mean of imbalance in players with recent HSI was 48.9 ± 46.4 N. The posterior probability that the difference between imbalance of the no HSI group and the imbalance of the historical HSI group is greater than zero was 0.948, and the posterior probability that the imbalance of those with recent HSI and the imbalance of the no HSI group is greater than zero is 0.767. **CONCLUSION**: Collegiate football players with no HSI have greater hamstring imbalance than do those with historical HSI, implying healing process, rehabilitation efforts, and habitual movement patterns may reduce imbalance between hamstrings over a period of at least 12 months. As expected, players who have recent HSI demonstrate greater hamstring imbalance than players with no HSI.