# No Difference found in Hamstring Strength across Division I Football Positions

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ABSTRACT

Hamstring injuries are one of the most common injuries sustained in professional football with 800+ hamstring injuries per year. These hamstring injuries often occur between late swing (eccentric contraction) and early ground contact. **PURPOSE:** To investigate the correlation of eccentric hamstring strength to muscle volume across positional groups. **METHODS:** Athletes were divided into three homogeneous groups based on position (big (e.g., linemen), skill (e.g., receivers), combo (e.g., linebackers)). Seventy-three NCAA Division I football players participated (24 big, 37 skill, and 12 combo). Hamstring strength was collected for each leg while performing 3 Nordic curls on a Nordbord device. The peak force of each leg was summed for our data analysis. Collective hamstring volume for each athlete was found through MRI. **RESULTS:** A Pearson's product correlation demonstrated an overall moderate correlation (r = 0.52, p < 0.0001) between hamstring muscle volume and strength, with skill players demonstrating a strong correlation (r = 0.66, p < 0.0001), combo players demonstrating a moderate correlation (r = 0.49, p < 0.0001), and big players demonstrating a weak correlation (r = 0.39, p < 0.0001). An ANOVA showed no statistically significant difference of hamstring strength between positional groups (p = 0.1074) relative to hamstring volume (p < 0.0001). **CONCLUSION:** The observed overall moderate correlation between hamstring strength and muscle volume across positional groups indicates that factors outside of muscle volume contribute to muscle strength. Our data also suggests that, regardless of position, hamstring muscle strength was similar when accounting for volume. Muscle volume was the best predictor of strength for the skill group. However, other factors should be considered, such as motor control factors. In the combo and big groups, these additional factors play a larger role.