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Differences in Lower-Extremity Kinematics Among Female Collegiate Soccer and Volleyball Players

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Joint angles and leg stiffness play a role in an athlete's Reactive Strength Index (RSI), which is a measure that can be used to determine an athlete's ability to produce force or explosiveness over a short period of time. **PURPOSE:** To evaluate the differences in RSI, knee joint angular displacement (KD), and ankle joint angular displacement (AD) among soccer and volleyball female athletes during a landing task. **METHODS:** A total of 14 healthy, NCAA Division III female athletes (19.79 ± 1.12 years) volunteered for this study. The subjects jumped over a hurdle with subsequent maximal vertical jump (using Vertec). The maximal vertical jump landing was video recorded and analyzed using Hudl technique app. A one-way ANOVA was used to determine differences among soccer and volleyball athletes for RSI, KD, and AD. **RESULTS:** RSI was significantly higher in soccer (1.78 ± 0.39 vs. 1.32 ± 0.23 , $p < .05$). There were no significant differences observed between soccer and volleyball athletes for KD ($30.12^\circ \pm 12.55^\circ$ vs. $37^\circ \pm 18.52^\circ$, $p = .422$) and AD ($40.37^\circ \pm 6.5^\circ$ vs. $43.83^\circ \pm 9.02^\circ$, $p = .419$). **CONCLUSION:** There is an observable difference in ground force attenuation strategies by sport. Future studies should explore lower-extremity absorption strategies using bigger sample size, NCAA Division I or II athletes, and comparing genders during sport-specific tasks. Further investigation may examine landing angles in both the frontal and sagittal planes.