

Prevalence of Above and Below 5% CV for Patients that Reached LSI $\geq 90\%$

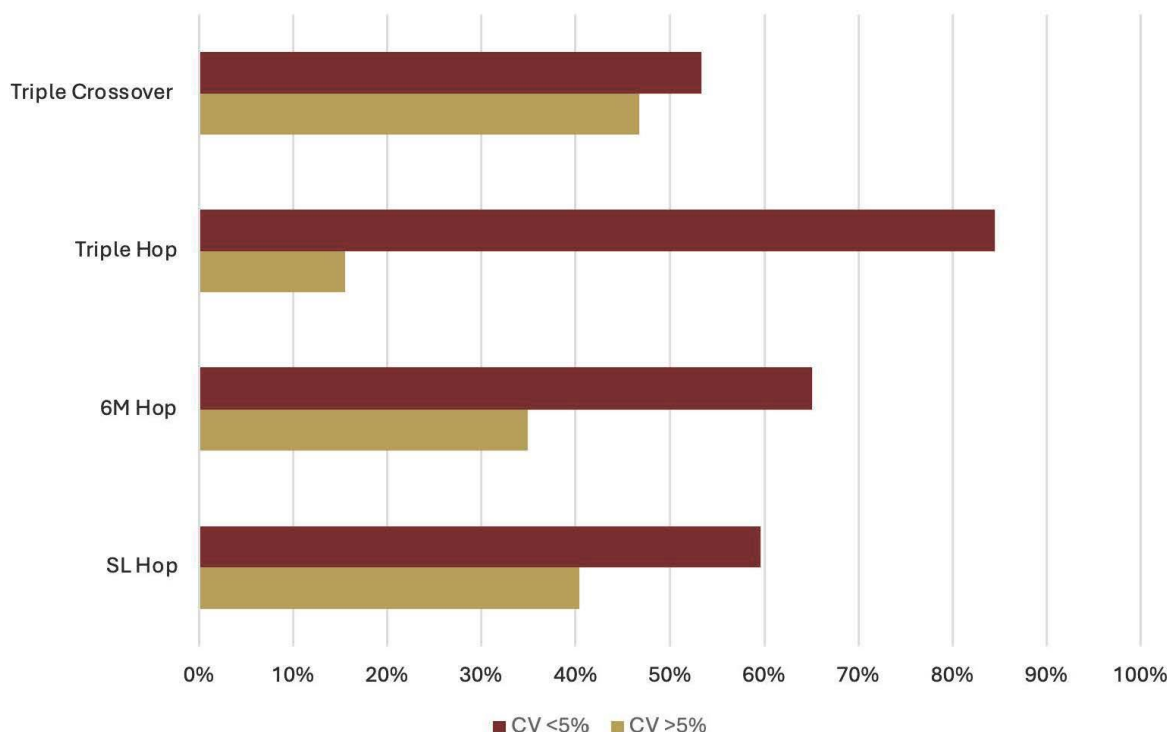


Figure 1. Prevalence of athletes achieving <5% and >5% coefficient of variance (CV) among those who reached $\geq 90\%$ limb symmetry index (LSI).

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Jump Mechanics In Female Collegiate Athletes Vary By Sport And Season

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Collegiate athletes must maintain optimal performance throughout the competitive season. Tracking metrics such as vertical jump (VJ) can provide insights into appropriate training load. **PURPOSE:** To assess differences in VJ mechanics among female soccer and volleyball players across time. **METHODS:** We tracked 30 Division-1 female athletes (20 soccer, 10 volleyball) for a calendar year, periodically assessing jump mechanics using Vald ForceDecks force plates. Each testing session involved 3 standardized jumps; the best performance was retained. We exported VJ height, peak landing force, relative peak power (RPP, calculated as peak power divided by body mass), and reactive strength index (RSI, an assessment of the transition from eccentric to concentric phases). We used mixed ANOVA with repeated measures, with sport as the between-subjects factor, to compare jump mechanics at 4 time points: beginning of the offseason, end of the offseason, end of the preseason, and end of the competition season. **RESULTS:** Across all time points, VJ height was 27.1 ± 3.8 cm, peak landing force was $2,923.3 \pm 734.0$ N, RPP was 42.4 ± 4.6 w/kg, and RSI was 0.4 ± 0.1 m/s. Repeated measures ANOVA found significant differences between time points in VJ height ($p < 0.001$), RPP ($p < 0.001$), and RSI ($p < 0.001$). Significant main effects were observed with sport in VJ height ($p = 0.025$) and RPP ($p = 0.041$), and interaction effects were observed with VJ height ($p < 0.001$) and RPP ($p < 0.001$). Athletes in both sports produced their best VJ at the end of the offseason: volleyball players were 31.2 ± 3.0 cm and soccer players were 26.9 ± 4.0 cm ($p = 0.005$). Volleyball players also jumped 13.8% higher at the beginning of the preseason ($p = 0.007$) and 11.5% higher at the end of the competitive season ($p = 0.033$); there was no difference at the end of preseason training ($p = 0.511$). RPP was similar; all athletes achieved their highest values at the end of the offseason: volleyball was 46.5 ± 3.4 w/kg and soccer was 41.9 ± 4.8 w/kg ($p = 0.012$). Volleyball was 8.8% higher at the beginning of the offseason ($p = 0.025$) and 9.9% higher at the end of the competitive season ($p = 0.021$) with no difference at the end of preseason training ($p = 0.459$). **CONCLUSIONS:** Volleyball players demonstrated greater VJ height and RPP than soccer players. All athletes achieved peak performance at the end of the offseason.

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Correlation Of Training Intensity With Increased Achilles' Tendon Thickness In Pre-professional Ballet Dancers

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