

IS THERE A RELATIONSHIP BETWEEN COUNTERMOVEMENT JUMP HEIGHT, POWER, AND VELOCITY IN DIVISION II COLLEGIATE ROWERS?

M. E. Dickey., T. D. Robertson., H. D. K. Bates, and B. R. Pilgreen., E. C. Conchola.

¹University of Central Oklahoma

Athletic movements typically incorporate explosive based actions. This movement profile can be positively or negatively impacted by one's power and or velocity output. While power production is a crucial part of effective performance in high-level athletes, does power and or velocity directly correlate with all athletes (aerobic vs. anaerobic)? Further, how does water-based sports translate to dry land training? **PURPOSE:** To analyze and see if there is a correlation of countermovement jump (CMJ) performance, specifically, vertical jump height (VJH), average power (AP), and peak power (PP), average velocity (AV) and peak velocity (PV) with Division II female collegiate rowers. **Methods:** Seventeen division II collegiate female rowing athletes CMJs were assessed during their off-season. A jumping mat was used to measure vertical jump height, and a linear transducer was used to assess power and velocity variables. Three countermovement jumps were performed with hands on hips, and the highest VJH was used for data analysis. A Pearson Correlation was used to evaluate the VJH, AP, PP, AV, PV. An alpha of 0.05 was used for level of significance. **RESULTS:** CMJ_AP was significantly correlated with PP ($r=.73, p<.001$), AV ($r=.70, p=.002$) and PV ($r=.67, p=.003$). PP was significantly correlated with AP ($r=.73, p<.001$) and AV ($r=.58, p=.015$) and PV ($r=.73, p<.001$). AV was significantly correlated with AP ($r=.70, p=.002$), PP ($r=.58, p=.015$) and AV ($r=.80, p<.001$). PV was significantly correlated with AP ($r=.67, p=.003$) PP ($r=.73, p<.001$) and AV ($r=.80, p<.001$). CMJ_VJH was not correlated with any power or velocity variables ($p>.05$). **CONCLUSIONS:** While many coaching and athletic staffs place emphasis on VJH performance, other variables (power and velocity) are vital to vertical jump performance as well. The present study observed significant power and velocity correlations with CMJ's, however no significant correlations were found for VJH. **PRACTICAL APPLICATION:** The present study suggests that CJM's are correlated with both velocity and power. Therefore, it is recommended for athletes to train in ways that maximize their power output and explosive movements.