

The Effects of Menstrual Phase on Upper and Lower Body Anaerobic Performance in College-Aged Women

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Abstract : Introduction: With the rate of female collegiate and professional athletes on the rise in recent decades, fluctuations in physical performance in relation to the menstrual cycle is an important area of study. PURPOSE: The purpose of this research was to compare differences in upper and lower body maximal anaerobic capacities across a single menstrual cycle. Methode: Participants (n=11) met a total of four times; once for familiarization and again on day 1 of menses (follicular phase), day 14 (ovulation), and day 21 (luteal phase) respectively. Upper body power was assessed using a bench press weight of ~50% of the participant's predetermined 1-repetition maximum (1-RM) on a ballistic measurement system and variables included peak force (N), mean force (N), peak power (W), mean power (W), and peak velocity (m/s). Lower body power output was collected using a standard Wingate test. The variables of interest were anaerobic capacity (w/kg), peak power (W), mean power (W), fatigue index (W/s), and total work (J). Result: Statistical significance was not observed ($p > 0.05$) in any of the aforementioned variables after completing multiple one ways of analyses of variances (ANOVAs) with repeated measures on time. Conclusion: Within the parameters of this research, neither female upper nor lower body power output differed across the menstrual cycle when analyzed using 50% of one repetition (1RM) maximal bench press and the 30-second maximal effort cycle ergometer Wingate test. Therefore, researchers should not alter their subject populations due to the incorrect assumption that power output may be influenced by the menstrual cycle.

Keywords : anaerobic, athlete, female, power

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