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Exercise but Not Menstrual Cycle Phase Increases Hamstring Flexibility

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Previous studies have demonstrated aerobic exercise increases hamstring flexibility. However, disagreement exists on the influence of exercise intensity on flexibility changes. Moreover, the menstrual cycle influences soft tissue pliability across menstrual cycle stages. To date, no studies exist which have examined the combined effect of intensity of aerobic exercise and menstrual cycle on hamstring flexibility.

PURPOSE: Determine the influence of aerobic exercise intensity and menstrual cycle on hamstring flexibility. **METHODS:** 11 college-aged aerobically trained females (20.82 ± 2.72 yrs; 164.16 ± 5.31 cm; 60.81 ± 9.89 kgs; 32.46 ± 5.32 %BF) with regular menstrual cycles not taking birth control were recruited. Participants were randomized into work-matched moderate (MOD; 42.5% heart rate reserve (HRR)) or high-intensity (HIIT; 85%HRR) groups using a cross-over design across different phases of the menstrual cycle. Sit and reach and supine hamstring flexibility were performed before and after each exercise session.

RESULTS: Significant changes in sit and reach (SAR; $p=0.013$) and supine hamstring flexibility (SHF; $p>0.001$) were observed post-exercise in both MOD and HIIT groups with no difference between groups (SHF $p=0.901$; SAR $p=0.996$) or across follicular and luteal menstrual cycle phases (SHF $p=0.671$; SAR $p=0.706$). **CONCLUSIONS:** Both MOD and HIIT aerobic exercise showed significant increases in hamstring flexibility regardless of menstrual cycle phase. However, there was no significant difference between exercise intensities.