

**Effects of Acute Late Sleep Restriction on Strength, Power, and Running Speed in Recreationally Active Females**

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**ABSTRACT**

Previous research suggests that late sleep restriction (SR) paired with exercise in the morning does not have a significant impact on sport performance measures. However, this evidence is based on research conducted primarily in males. **PURPOSE:** To examine the effects of late sleep restriction on measures of strength, speed, and power among recreationally active females. **METHODS:** Twenty-three (23) recreationally active (aerobic physical activity and resistance exercise at least three times a week for six months) females participated in this study (mean age 21.5 years, BMI 23 kg/m<sup>2</sup>). A randomized, cross-over design was used under two conditions, recommended sleep (RS), and late SR. Participants performed three exercises to obtain measures; Isometric mid-thigh-pull (Relative Peak Force [RPF], Peak Force [PF], Rate of Force Development [RFD]), 20-yard sprint (time in seconds), and Counter-movement jump (Jump Height [JH], Relative Peak Power [RPP]). Conditions were separated with a 3-day resting period. For RS, participants were instructed to achieve 7h of sleep which align with the recommendation for healthy sleep length. For SR, participants subtracted three hours of sleep from the usual wake-up time with at least three hours of awake time before testing. **RESULTS:** No significant differences were found comparing RS and SR for all measures. **CONCLUSION:** Late SR did not affect measures of strength, speed, and power among recreationally active female athletes when compared to RS. These results support former research suggesting no evidence of impaired performance for strength, power, or speed with a single bout of late sleep restriction and exercise in the morning. Previous research suggests that psychomotor functioning may be affected in a greater way than gross motor functioning. Therefore, future research should consider effects of multiple, consecutive bouts of SR on performance measures as well as psychomotor functioning specifically in females.