

## SWACSM Abstract

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### Does Neuromuscular Fatigue Occur From One Doubles Pickleball Match?

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#### ABSTRACT

Pickleball is an emerging sport that is continuing to gain popularity among people of all ages. Little research has been completed on the performance aspects of the game. **PURPOSE:** Lower body force production is an important aspect of any sport. A countermovement jump is a useful way to test that characteristic. Acute decreases in force production are an indicator of fatigue. No previous research of force production and fatigue has been completed on pickleball. Therefore the purpose of this study was to test countermovement jump performance before and after a match of doubles pickleball to determine if neuromuscular fatigue may have occurred. **METHODS:** Participants in groups of four were instructed to complete eight jumps with their hands on their hips. Jumps 1-2 were at 50% of their maximal effort, jumps 3-4 at 75% of their maximal effort, and jumps 5-8 at maximal effort. Each participant had 30-40 seconds of rest between each jump. Jumps 5-8 were completed on a Hawkin Dynamics Force Plate. Then participants played one doubles pickleball match. Immediately after the match, participants then completed one jump at 50%, one jump at 75%, and four jumps at maximal effort. The Hawkin Dynamics software captured the various force-time variables used in analysis. **RESULTS:** Using a repeated measure ANOVA test, there was a significant increase in jump height ( $p= 0.007$ ), peak relative propulsive force ( $p= 0.039$ ), average relative propulsive force ( $p= 0.016$ ), and peak relative propulsive power ( $p= 0.001$ ) after one doubles match of pickleball. There was no significant change in average relative braking force ( $p= 0.117$ ), peak relative braking force ( $p= 0.144$ ), and average relative propulsive force ( $p= 0.064$ ). **CONCLUSION:** Contrary to our hypothesis, these results indicate that one match of doubles pickleball may not cause fatigue; rather, one doubles match may actually warm up players to actively recruit motor units required to have a more powerful jump.