SWACSM Abstract

Does Hand Use Affect Metabolic Measures During Pickleball

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ABSTRACT

Pickleball is one of the fastest up and coming sports in the United States today. This low impact sport has the combined elements of Ping-Pong, tennis, and badminton. Pickleball can be played with the dominant hand (DH) or non-dominant (NDH). Though many people enjoy the sport, it is under-researched. The metabolic demands of pickleball are not clear, nor is whether the demands differ by the hand used. **PURPOSE:** The aim of this study was to determine the differences in metabolic measures while playing pickleball with the DH and NDH. **METHODS:** Eleven people were recruited via convenience sampling and participated (2 female, 8 males, 1 prefer not to disclose; age = 28.1 ± 9.2 years; height = 176.0 ± 8.0 cm; mass = 73.2 ± 13.4 kg). Participants were connected to a COSMED K5 portable metabolic analysis system. Outcome measures were VO_2 (ml/kg/min), Metabolic Equivalents (METS), Percent of Calories from Fat (FAT%), Percent of Calories from Carbohydrate (CHO%), and Respiratory Quotient (RQ). Participants played for five minutes with one hand, rested, and played for five minutes with the other hand. The hand order was counterbalanced. Data were analyzed using a paired *t*-test with significance accepted at $p \leq 0.05$. **RESULTS:** A significant difference was observed for VO_2 (DH = 27.3 ± 4.2, NDH = 24.7± 4.4, $p = 0.03$) and METS (DH = 7.8 ± 1.2, NDH = 7.1 ± 1.3, $p = 0.03$). No difference was noted for RQ (DH = 0.84 ± 0.07, NDH = 0.82 ± 0.07, $p = 0.2$), FAT% (DH = 54.9 ± 22.1%, NDH = 62.4 ± 20.9%, $p = 0.2$), or CHO% (DH = 45.1 ± 22.1%, NDH = 37.6 ± 20.9% $p = 0.2$) **CONCLUSION**: Pickleball players consume more oxygen while playing with their dominant hand, but the difference is not reflected in other metabolic measures associated with substrate utilization. While playing pickleball with the dominant hand may confer an advantage from a skill and intensity perspective, there is no statistical advantage when considering the fuels used during the activity. The practical implications, however, should be further explored.