

**Title:** The impact of badminton lessons on health and wellness of young adults with intellectual disabilities: a pilot study

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**Background:** Physical activity has been proposed as a context to foster the healthy development of individuals and reduce the risk of many chronic problems. This study evaluates the impact of badminton lessons on health and wellness in young adults with intellectual disabilities (ID).

**Methods:** Eighteen participants with ID (14 males and 4 females, aged 19-26) and with little or no experience in badminton were assigned to an exercise group and a control group. The curriculum selected was Shuttle Time Starter Lessons. The exercise group practiced for 50 min each session, twice a week for 10 lessons with peers, while the control group maintained a regular life schedule. Physiological measures, motor performance, Special Olympics Individual Badminton Skills Assessment; and psychological measures were conducted before and after the program. A Wilcoxon signed-rank test was conducted to compare pre- and post-tests in each group.

**Results:** The significantly reduced resting heart rate, longer walking distances in the 6-minute walk test, and better performance in badminton skills were evident in the exercise group. Further, a significantly increased left frontal alpha asymmetry was seen in the exercise group with participants expressing positive effects after the inclusive badminton program. Finally, resting EEG frontal asymmetry seemed to be reflective of emotion in persons with ID.

**Conclusions:** Shuttle Time Badminton Lessons could be feasible for adults with ID. School teachers and coaches may adapt it to improve health and wellness and acquire badminton skills in adults with ID. In addition, the inclusive environment can motivate their participation.