

### **Article Title**

Examining the Impact of a Multi-Sport Camp for Girls Ages 8-11 with Autism Spectrum Disorder

### **Article Citation**

Guest, L., Balogh, R., Dogra, S., & Lloyd, M. (2017). Examining the impact of a multi-sport camp for girls ages 8-11 with autism spectrum disorder. *Therapeutic Recreation Journal*, LI (2), 109-126 <https://doi.org/10.18666/TRJ-2017-V51-I2-7383>

### **Adaptive Sport/Recreation Categories**

- Camp intervention
- Multi-sports
- Physical activity participation

**Study Type:** Pre-test, post-test, quasi experimental design with 8 week follow up

### **Summary**

Limited information exists regarding physical activity participation and motor skills development in girls with Autism Spectrum Disorder (ASD). Targeted approaches may be needed based on gender, age and diagnosis. Thirteen girls with ASD participated in a 5 day multi-sport camp conducted at a high school. The girls, aged 8-11 years, were taught motor skills using the Special Olympics FUNdamentals programme (Special Olympics Canada, 2017) which were integrated into active group games and sports including soccer, basketball, track and field and baseball. A 3:1 camper to councillor ratio was provided. The premise was improvement in motor skills would lead to increased physical activity levels, improved confidence in their skills and socialization. Standardised measures for motor proficiency, physical self-perceptions, social and adaptive behaviour, pedometer records of physical activity, and a self-reported parent/guardian questionnaire were conducted and analysed. The camp was effective in improving motor skills ( $p < 0.0001$ ), physical self-perceptions ( $p = 0.044$ ) and social skills ( $p = 0.005$ ). Not all measures showed change and change was not always sustained for the 8 weeks beyond the intervention e.g., no significant change in motor skill attainment or physical activity steps beyond the programme.

### **Article Strengths**

- Provision of a girls only intervention
- Short duration programme
- Community based intervention
- Recognition of the need to increase skills and participation prior to teenage years
- Inclusion of a variety of sports that would be familiar to many children in Canada
- High camper to councillor ratio and use of other support staff
- Use of recognized programme
- Important study investigating beyond motor skills including physical activity levels, confidence and socialisation

### **Article Weaknesses**

- Low numbers
- Categorization of ASD diagnosis is not mentioned
- Cognition level of the participant is not taken prior to enrolment into the study
- Nine of the 13 girls had received motor interventions previously (not stated timing compared to current study)
- Dosage (hours/day) and cost of programme not stated
- Home exercise programme following the camp to increase motor learning and skill development was not employed
- No control group
- Adverse events were not reported
- Standardised tests do not have reliability or validity established for girls with ASD
- Pedometry protocol not clearly stated e.g., when collected pre, post and at 8 week follow up
- Pedometry collection rate not stated
- Intensity of PA not collected yet compared to PA guidelines of moderate to vigorous PA
- Lack of discussion regarding change in motor proficiency scores (from very, very poor initially). Scores improved but to what level compared to their peers
- Possible parent/participant bias as participants were high functioning and no pre test participation levels/history were collected
- IQ and BMI were not collected
- Unclear training of camp staff for children with ASD

### **Take Home Messages**

- Focus on motor skills for girls with ASD may lead to short term, positive improvements in motor skills, physical self-perceptions and self-efficacy of sport ability, and social skills
- Participation in PA is complex, with interactions and transactions between key outcomes still unclear e.g., what should be addressed first? Further research including interventions of longer duration and varied intensities, large sample size and a control group are recommended.

### **Impacts on Clinical Practice**

- Girls with ASD can learn new motor skills
- Functional gains in motor skills have potential to impact leisure, recreation, sport and activities of daily living for school age girls with ASD
- Motor skill interventions alone are unlikely to be sufficient to change PA and participation rates in girls with ASD