

### **Article Title**

The effect of the adapted soccer programme on motor learning and psychosocial behaviour in adolescents with Down syndrome.

### **Article Citation**

Perić, D. B., Milićević-Marinković, B., & Djurović, D. (2022). The effect of the adapted soccer programme on motor learning and psychosocial behaviour in adolescents with Down syndrome. *Journal of Intellectual Disability Research*, 66(6), 533-544.

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

- Adapted soccer
- Motor learning
- Psychosocial behaviour

**Study Type:** Randomized controlled experimental design

### **Summary**

Physical activity improves general health and quality of life in people with Down syndrome (DS), as well as motor, social, and help-self skills. The aim of the study was to determine the effects of an adapted soccer program on motor learning and psychosocial characteristics in adolescents with DS. 25 adolescents between 15-18 years old with Down syndrome, with mild to moderate perceived intellectual disability, were randomly assigned to a control group or exercise group. Those in the exercise group partook in an adapted soccer program led by three certified coaches, applied over 16 weeks. The program consisted of two 60-minute sessions per week where they learned basic soccer elements/skills. Control group continued with their usual daily regime. Participants were required to follow simple instructions, without any serious physical disability, and have an intelligence quotient over 35.

After 16 weeks, the soccer program group showed lower levels of aggression, attention disorders, anxiety and depression, and improved straight dribbling of the ball, while no significant changes were observed in the control group. The study found that adolescents with DS who were part of a soccer program experienced improvements in psychosocial behaviours related to aggression, attention, anxiety, depression, and adverse social behaviours. Adolescents in the soccer program also improved in one of three motor skills, straight dribbling of the ball, deemed the easiest task. Findings suggested that manipulating objects, processing spatial and dynamic information may be more difficult than practicing dynamic balance for adolescents with DS. Learning complex soccer movements require intellectual engagement. Team driven nature and complex motor tasks in soccer can improve social behaviours and some motor skills among adolescents with DS.

### **Article Strengths**

- Studied the impact of adapted soccer program on motor and psychosocial outcomes in youth with DS.
- Highlighted the benefit of adapted soccer/sports on social behaviours and some motor skills among adolescents with DS.
- Randomized and controlled experimental design.

### **Article Weaknesses**

- Use of overly specific soccer tests to measure motor skills.
- No use of validated outcome measures for any of the motor and psychosocial outcomes
- Relatively short intervention period.
- Small sample size may limit generalizability of findings.

### **Take Home Messages**

- 16-week adapted soccer program improved social behaviours (decreased aggression, attention disorders, anxiety, depression, and adverse social behaviours) in adolescents with DS.
- Adolescents with DS improved in the easiest motor task but not in moderate and very complex motor tasks after a 16-week adapted soccer program.

### **Impacts on Clinical Practice**

- Adapted sports like soccer have the potential to improve psychosocial behaviours and certain motor skills in youth with DS.
- The length of the program, specific tasks/abilities required for the sport, and the abilities of the youth should be considered when implementing adapted sports programs with youth with DS.
- Validated outcome measures should be used to track improvements in motor skills and psychosocial behaviours, and other health outcomes.