

## Article

Lankhorst, K., de Groot, J., Takken, T., et al. (2019). Sports participation related to injuries and illnesses among ambulatory youth with chronic diseases: results of the health in adapted youth sports study. *BMC Sports Sci Med Rehabil*, 11(36), 1-12. <https://doi.org/10.1186/s13102-019-0145-5>

## Adaptive Sport/Recreation Categories:

- Medical Illnesses in Sports, Musculoskeletal Injuries, Exercise Prescription

## Research Questions

- What sports related injuries and illnesses occur in youth with chronic diseases or physical disabilities (CDPD)?
- Does frequency of physical activity affect risk in youth with CDPD?

## Methodology

- This prospective cohort study was a sub-study of the Health in Adapted Youth Sports (HAYS) study. Participants with CDPD were recruited from a variety of patient associations, therapy practices, hospital and rehabilitation centers, special education schools and sports clubs.
- Eligibility included ambulatory status, ages 8 to 19 years, and diagnosis with 1 or more cardiovascular, pulmonary, musculoskeletal, metabolic, or neuromuscular diseases according to the classification of the American College of Sports Medicine.
- Information gathered included baseline assessment with a participant and parent, objectively measured physical activity levels during one school week (via Activ8), and a twice weekly registration of each injury or illness for 12 months following the baseline assessment.

## Results

- Data was collected on 103 children and adolescents with a Gross Motor Function Classification System (GMFCS) classification of 1 or 2.
- Level of athletic participation ranged from no physical activity to high-level competitive sports
- A large portion of the participants had a neuromuscular disorder (46%).
- Nearly half of the participants sustained 1 or more injuries (46%) or illnesses (42%) during 12 months but no significant difference in injury rate was seen between those participating in 0, 1, or  $\geq 2$  times per week.
- Most common injuries were contusions (41%) of the lower extremity (74%) with flu and fever being the most common illness (58%) with limited social impact.

## Discussion/Conclusion:

- Individuals not participating in sports sustained similar injury rates but these occurred during leisure activity or less intense physical activity than their athlete counterparts.

- The study authors concluded that in youth with CDPD, participation in sports  $\geq 2$  times per week is not associated with an increased risk of injury or illness incidence compared to less frequent participation or no participation in sports.

#### **Article Strengths and Weaknesses**

- Strengths of the study included a prospective design with a large number of both sporting and non-sporting youth with CDPD.
- Limitations included no differentiation between diagnosis types.
- Also, physical activity levels for 12 months was extrapolated from a one week assessment, albeit an objective measurement.

#### **Take Home Message**

- Sport participation of 2 or more times per week appears safe for children with chronic physical conditions.
- Injuries/illnesses sustained resulted in minimal impact on school, physical education (PE) or sports.
- Those who participated in sports 2 or more times per week had less injuries in leisure or PE and less illness than their non-active peers, suggesting a protective effect of exercise.