

### **Article Title**

Injury and Illness Surveillance in Elite Para Athletes – An Urgent Need for Suitable Illness Prevention Strategies

### **Article Citation**

Hirschmüller, A., Fassbender, K., Kubosch, J., Leonhart, R., & Steffen, K. (2021). Injury and Illness Surveillance in Elite Para Athletes: An Urgent Need for Suitable Illness Prevention Strategies. *American journal of physical medicine & rehabilitation*, 100(2), 173–180.  
<https://doi.org/10.1097/PHM.0000000000001501>

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

- Paralympic Athletes
- Para Athlete
- Injury Surveillance

**Study Type:** Prospective cohort study

### **Summary**

Fifty-eight elite-level German Para athletes (paraplegic n = 19, nonparaplegic n = 39) participated in a health monitoring program for 29 consecutive weeks while preparing for the 2016 Rio de Janeiro Paralympic Games. During this time, the Para athletes completed the validated Oslo Sports Trauma Research Center Questionnaire on Health Problems (OSTRC-H) on a weekly basis via a web link. Each week, they provided information about sports participation, training volume, performance, and health problems (illnesses, acute injuries, and overuse injuries) experienced during the previous 7 days. The study found that at any given time, 28% of elite German Para athletes reported health problems, with 12% of them having substantial concerns. Furthermore, the paraplegic athletes were found to have a higher weekly prevalence of health problems including gastroenterological problems, urinary tract infections, neurological concerns, and finger/hand injuries compared to nonparaplegic athletes. However, there were no significant differences for paraplegic and nonparaplegic athletes when evaluating the days of time lost from training and competition due to these injuries or illnesses.

### **Article Strengths**

- This was the first prospective longitudinal study on injury and illness surveillance of elite-level Para athletes with clinically validated follow-ups of reported health problems.
- The health monitoring was conducted using the OSTRC-H questionnaire, which has been validated.
- A variety of Para athletes were included representing 5 impairment groups (visual impairment, spinal cord injury, intellectual impairment, limb deficiency, cerebral palsy/upper motor neuron disorder) and 10 different sports.
- The Para athletes reported high satisfaction with the surveillance methods. The team physicians also reported that they obtained meaningful information about the athletes' medical conditions and training loads from the questionnaire.

### **Article Weaknesses**

- Relatively small sample size of 58 athletes.
- Possible attrition bias; only 58 of the initial cohort of 72 Para athletes completed the study.
- Only one-third of eligible athletes participated in the study, and some sports were more heavily represented than others. Consequently, this limits the study's external validity.
- The survey was only available with an Internet connection, which may have limited participation for some athletes.
- Certain disabilities prevented athletes from completing the questionnaire independently (e.g. visual impairments or intellectual disabilities), though external support was provided, if needed.
- The questionnaire did not address psychologic aspects of health.
- Participant demographics with regard to specific disabilities were not clearly defined.
- The prevalence of health problems in these Para athletes was not directly compared to that of able-bodied athletes.

### **Take Home Messages**

- The OSTRC-H is a suitable means for injury and illness surveillance in Para athletes.
- The weekly prevalence of health problems was greater for paraplegic athletes compared to nonparaplegic athletes.
- This type of monitoring may also improve athletes' satisfaction with their medical care.

### **Impacts on Clinical Practice:**

- Health surveillance programs for Para athletes may be helpful for the early detection of medical concerns. These programs can ensure early interventions and potentially reduce the frequency of overtraining, injuries, and other illnesses, and ultimately result in less lost training/competition time.
- The noted incidence rates of certain illnesses (e.g. upper airway, gastrointestinal, and urological infections) highlights the importance of counseling Para athletes on preventative measures for these concerns.
- Given the increased incidence of shoulder injuries in the paraplegic athletes, clinicians caring for these athletes may consider shoulder injury prevention programs. Furthermore, it may be useful to screen for sport specific problems at routine sports medical checkups.