



# Establishing an injury surveillance system in German youth elite snowboarding

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## INTRODUCTION

The risk of injury in snowboarding is high, whereas the incidence and type of injury differ depending on discipline and performance level. Snowboardcross and freestyle disciplines have a higher incidence of contact injuries and falls compared to snowboard alpine disciplines. Wrist injuries dominate in recreational snowboarders, while knee and back injuries are more common in competitive snowboarders. The lower the rider's skill level, the higher the risk of injury, but the severity of injuries (multiple injuries involving the trunk) increases with skill level. However, there are no standardized epidemiological injury data for junior elite snowboarding. Injury surveillance in junior athletes is particularly difficult. There is no central contact point where data can be collected regularly in a standardized and comprehensive manner. Further, medical care in junior elite sport is usually organized decentralized by individual physicians or institutions. Therefore, the goal was to establish a coach-centered and largely automated system of injury surveillance at national level that fits the general conditions in German junior snowboarding.

## METHODS

Before specifying the procedure of injury surveillance, a detailed analysis of the context was necessary. The following questionnaire was used to clarify relevant questions, such as:

- Who could collect injury data?
- Is medical knowledge available?
- How is injury data collected, when and how often?
- How is injury data stored?
- Who analyses injury data?
- When and how often is injury data evaluated?
- How is injury data analyzed (group-specific)?
- Who receives injury reports, when and how often?

Figure 1 Excerpt from the coach-centred injury protocol that will be used for injury surveillance in German youth elite snowboarding.

After an one-year pilot phase, the procedure will be evaluated based on interviews with regard to usability and usefulness of criteria, time required for recording/analyzing and other aspects concerning practicability.

## RESULTS

In Germany, approximately 50 junior snowboarders (12-15 years) are coached decentrally by four discipline-specific national coaches. Therefore, coach-focused injury surveillance is recommended, with national coaches recording injury data of their own athletes. A database was developed, that will be accessible to all coaches through a central sharepoint solution. Coaches are advised to record data soon after they become aware of an injury in order to avoid memory gaps. Injury reports can be generated, providing information such as frequently injured body parts, injury types, distribution of injuries over the year/season and the percentage distribution of injury causes and mechanisms among youth elite snowboarders. In addition, an automatically generated dashboard allows coaches to filter and compare data by different parameters such as date of injury, gender, age (group) and injury severity.

After analyzing the context, criteria were defined to be used for standardized injury documentation. Criteria are based on the IOC standard (International Olympic Committee) and were extended by further discipline-specific relevant information, supported by the team doctor of Snowboard Germany.

Translating criteria into coach-friendly language combined with guidance to coaches on how to use the protocol, was intended to help increase coaches' compliance and thus ensure sustainability of data collection.

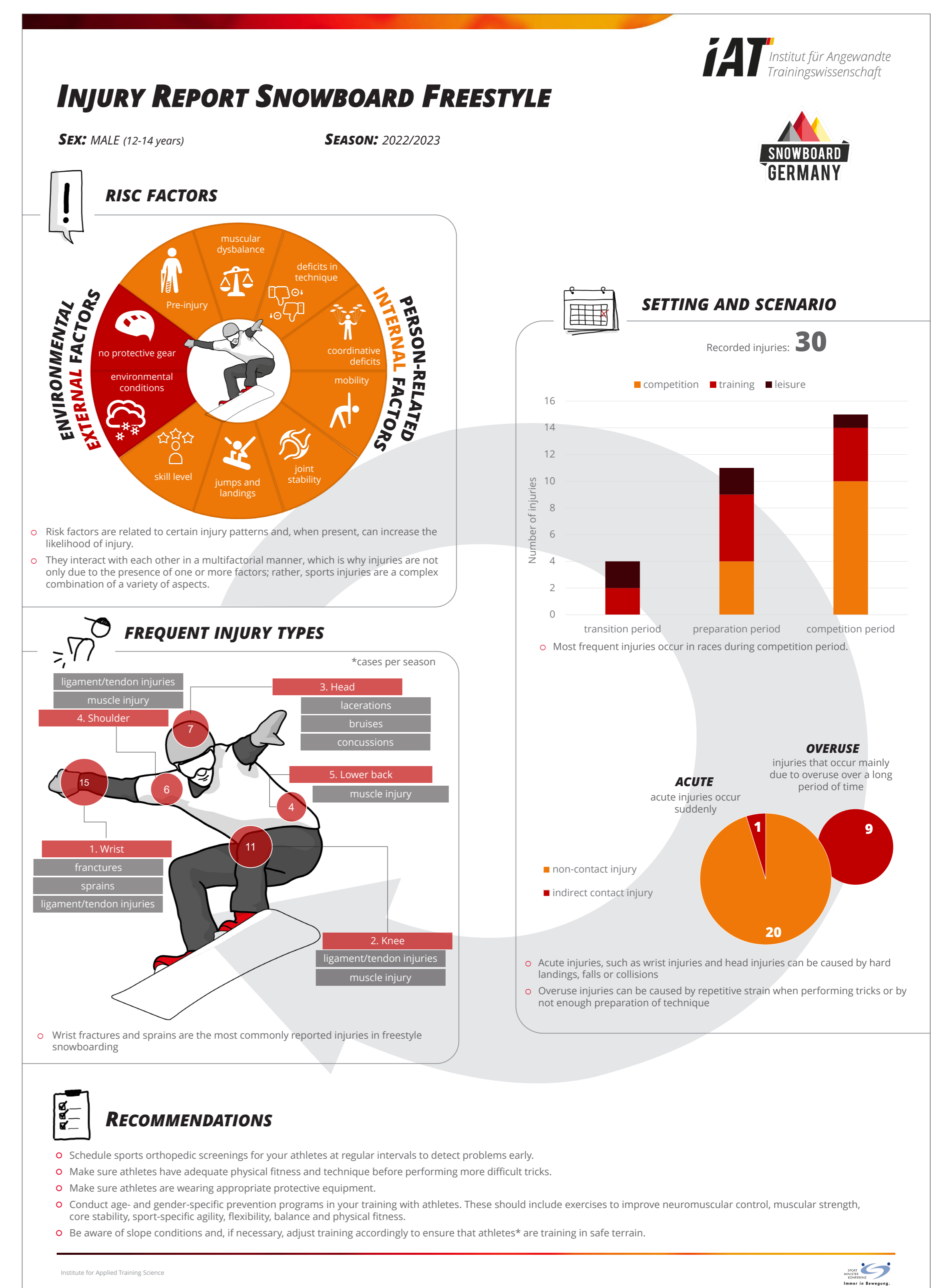


Figure 2 Injury report generated using data from literature and expert interviews. Due to incomplete information, the data presented are partly based on hypothetical assumptions.

## DISCUSSION/CONCLUSION

Snowboard Germany with its coaches will receive an annual injury report for planning strategies and interventions to reduce the risk of injuries and/or their severity in German junior elite snowboarding. Preventive strategies to improve athletes' safety might include the use of mandatory protective equipment (e.g. back protectors, airbags), rule changes as well as training interventions such as specific strength training or tactical training in snowboard cross.

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