

COMPARISON OF THE EFFECTIVENESS OF ORTHOSES VERSUS PROPRIOCEPTIVE EXERCISES FOR THE PREVENTION OF ANKLE INJURIES IN BASKETBALL PLAYERS

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INTRODUCTION

Ankle injuries frequently occur in ball games like basketball [1] and may lead to prolonged absences from practice and games. Ankle stabilizing devices such as tape or orthoses are highly recommended as preventive measures against inversion traumata [2]. Alternatively, physiotherapy with exercises addressing a wide variation of strengthening and proprioception has been suggested [3] even though the effectiveness is still under discussion. Furthermore, it has never been shown whether both approaches are equally effective or have a different impact on injury prevention. The aim of the present study was the prospective randomized investigation of the effect of these two alternative approaches to prevention of ankle injuries in a large sample of active basketball players from various levels of expertise.

METHODS

A total of 337 athletes from 12 women's teams and 23 men's teams of level 1 (Bundesliga) through level 5 (Kreisklasse) leagues participated. All players were actively involved in regular practice sessions and official games in their respective league. 95 athletes were assigned to the orthoses group and were wearing either the AirGo orthosis (Aircast) or their previously used orthosis. Another group of 115 players participated in a proprioceptive training that was carried out in addition to their normal basketball practice session (2 circuits with 6 stations, 15 min duration). The remaining 125 athletes served as a control group and continued their customary practice. All teams were followed for one games season (October 2003 to April 2004) and were asked to report all incidences that involved a basketball related injury that occurred either during practice or in official games and lead to the cessation of active participation. The frequency of injuries was expressed in relation to the amount of participation in basketball activities that were registered in a diary.

RESULTS AND DISCUSSION

A total of 107 reported injuries was located in 54% in the ankle joint, 12% the knee, 10% each the fingers and the head (Fig. 1). There were 28% primary ankle injuries and 68% recurrent injuries. The situations that lead to the injuries were equally distributed between practice sessions and official games and mostly involved direct contact with an opponent. The injuries resulted in a rehabilitation period of 2.5 weeks on average.

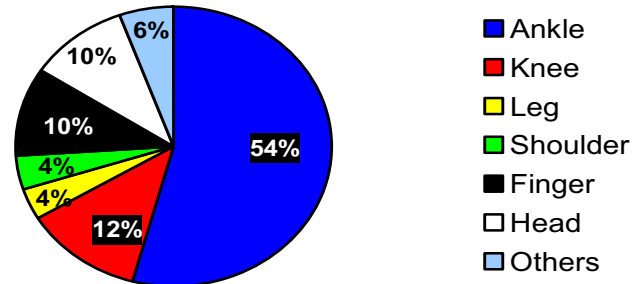


Figure 1: Distribution of the location of injuries (n=107)

Intervention	Control Group (n=125)	Proprio. Group (n=115)	Brace Group (n=95)
Basketball injuries/ 1000 participations	3.37	1.97*	1.00*

Tab. 1: Relative injury frequency for different interventions methods (*=significantly different from control group)

In the control group, the relative injury frequency was determined as 3.37 injuries per 1000 sports participations. In the proprioceptive training group it was significantly reduced to 1.97 injuries per 1000 sports participations. The least injuries occurred in the orthosis group with only 1.00 injury per 1000 sports participations (Tab. 2).

The injury statistics of the control group of active basketball players supports previously reported ankle injury frequencies in basketball [1]. Significant differences between the experimental groups underline the positive effect of both preventive measures with an even more pronounced effect of the ankle stabilizing orthoses.

CONCLUSIONS

Both preventive measures, i.e. multi-station proprioceptive exercises as well as ankle orthoses may be recommended for the prevention of primary and recurrent ankle injuries.

ACKNOWLEDGEMENTS

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REFERENCES

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