Proprioceptive training reduces the risk of ankle sprain recurrence in athletes

**Synopsis**


**Question:** Does a home-based proprioceptive exercise program reduce the one-year incidence of recurrent lateral ankle sprain in athletes? **Design:** Randomised controlled trial. **Setting:** Participants were recruited through primary care clinics as well as through advertisements in magazines, on the internet, and at sports tournaments in The Netherlands. **Participants:** 522 athletes aged 12–70 years with a lateral ankle sprain in the preceding 2 months were allocated to one of two groups, using concealed allocation. The groups were comparable at baseline with respect to age, sex, hours of sports exposure, and history of ankle sprains. **Interventions:** Athletes in both groups were free to seek and use any treatment they chose for their original ankle sprain. When any such interventions were complete and the athlete had returned to sport, only the intervention group additionally received an 8-week, unsupervised home-based proprioceptive training program, designed by physiotherapists. The program consisted of 3 sessions per week of up to 30 minutes each. An instructional DVD, exercise sheets, balance board, and web-based resources were provided to the intervention group. Exercises were gradually increased in difficulty and training load during the 8-week program. **Outcomes:** The primary outcome was incidence of ankle sprain in the 1-year follow-up period, reported monthly on a web-based questionnaire. Reported ankle injury data were rated by a blinded assessor as acute ankle sprains or other ankle injuries. Participants who reported an ankle injury also completed a cost diary to record costs of healthcare and lost productivity until recovery. **Results:** 86% of participants were followed up at 12 months. 33% of athletes in the control group reported an ankle sprain during follow-up, compared with 22% in the intervention group, which is an absolute risk reduction of 12% (95% CI 4 to 19) and number needed to treat of 9 (95% CI 26 to 5). Ankle sprains were further classified as those leading to loss of sports time, and those leading to costs of healthcare or lost productivity. Regardless of the classification used, significant reductions in the risk of ankle sprain were still evident after adjustment for age, type of sport, and level of sport. **Conclusion:** A home-based proprioceptive training program for athletes reduces the risk of ankle re-sprain in the following year, particularly for those who do not seek other treatment.

**References**


**Commentary**

The risk of having an ankle sprain is increased in people with a previous history of ankle sprain (Hiller et al 2008, Verhagen et al 2004). Hence, in addition to treating the acute symptoms of an ankle sprain, physiotherapists need to implement strategies that reduce the risk of recurrent sprains. Hupperets et al showed that adding a home-based proprioceptive training program to usual care reduced the risk of recurrent ankle sprains.

The program used in the trial was simple, required minimal equipment and time commitment from the patient, allowed progression through different levels of difficulties, and can be easily implemented by physiotherapists in clinical practice. Although the trial recruited ‘active sports participants’ (the criterion to assess this was unclear), it is possible that the positive effects associated with the program may also apply to the general population. The program requires minimal therapist-to-patient contact and therefore can be implemented in both urban and rural settings.

Compliance with the program was relatively low (52%), despite providing exercise sheets, a DVD, and web-based information. Additional strategies may boost compliance in clinical practice, eg, face-to-face or telephone follow-ups or email reminders. This needs to be balanced as too many follow-ups will increase patient burden and healthcare costs unnecessarily.

A few issues need to be taken into consideration when interpreting the results of this trial. The trial had an acceptable dropout rate of 14%, but there was a slight difference (n = 7) between the number of participants randomised in the trial report (Hupperets et al 2009) and its published protocol (Hupperets et al 2008). The protocol also reported that the trial collected secondary outcomes and conducted a cost-effectiveness analysis. These outcomes have not been included in the present publication. However, these issues should not detract physiotherapists from the overall findings of the study – that a proprioceptive training program is beneficial in reducing recurrent ankle sprains and should be implemented in addition to usual care when treating people with acute ankle sprain.

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