



Exercise: prevent recurrent ankle sprain

Intervention

Ankle injuries are the most common injuries across a wide variety of sports. It has been estimated that about 25% of all injuries across all sports are ankle injuries.

Exercise (neuromuscular and proprioception training) for the ankle.

These exercises are designed to target the underlying causes of the sprained ankle. Their purpose is to re-establish and strengthen the muscles and protective reflexes of the ankle.

Indication

Patients aged 12 to 70 years experiencing recurrent ankle sprain after initial recovery.

Precautions

The clinical trials cited were designed to investigate efficacy not safety so safety was often not reported as part of the trial outcomes. Presumably, as with other exercise regimens, there is an inherent risk of exercise-related injury, falls and fall-related injury.

Availability

The exercises are not hard to perform and can be carried out at home. Supervision by a physiotherapist is not required.

Description

Patients complete an 8-week exercise program (<http://www.racgp.org.au/your-practice/guidelines/handi/interventions/exercise-for-preventing-recurrent-ankle-sprain/#downloads>) of proprioception training exercises for the ankle on and off an unstable surface. (Refer to Consumer Resources for the recommended exercises.)

The exercises, which become more difficult over time, are performed at home on 3 days of the week and take about 30 minutes.

Patients can start doing the exercises once they have stopped treating the ankle sprain (start as pain permits) and can overlap with resuming sport.

Patients at all levels of fitness/sporting ability can attempt these exercises, whether they have received medical treatment for their ankle or not.



Tips and Challenges

Adherence to the program may be a problem for some patients. At least 75% of the 8-week exercise program needs to be completed for patients to benefit from the exercises. There is a smart phone app (Ankle) that may aid adherence through prompting and graphic depiction of the exercises.

Exercise programs may avoid the disadvantages associated with braces and tape, both of which have also been shown to be effective preventive methods against ankle sprains. Disadvantages of using braces and tape include hindered athletic performance: braces and taping need to be skilfully applied; they may loosen with activity and can irritate the skin.



Practice Points

- Patients who participate in sports can include these exercises as part of their usual warm-up routine.
- A balance board is recommended to complete some of the program. These can be purchased from general fitness stores or made from the equivalent of a large, sturdy breadboard on a golf ball sized rock.
- Patients with smart phones may want to download the Ankle app in addition to having the [exercise instructions](#) (see Consumer Resources).
- Prophylactic use of an ankle tape or brace in conjunction with neuromuscular training may provide added preventive benefits. However, these interventions in combination have not yet been tested in a randomised controlled trial and there is inadequate evidence to show one method is superior to another.

Grading

NHMRC Level 2 evidence

References

Hupperets M, Verhagen E, Mechelen WV. Effect of unsupervised home-based proprioceptive training on recurrences of ankle sprain: randomised controlled trial. *BMJ* 2009; 339: b2684.

Verhagen E, Bay K. Optimising ankle sprain prevention: a critical review and practical appraisal of the literature. *Br J Sports Med* 2010;44: 1082–8.

Verhagen E, van der Beek A, Twisk J, Bouter L, Bahr R, Mechelen WV. The effect of a proprioceptive balance board training program for the prevention of ankle sprains: a prospective controlled trial. *Am J Sports Med* 2004;32: 1385–93.

Consumer Resources

One-legged squat



The patient instruction sheet describes the exercises and 8-week exercise program (<http://www.racgp.org.au/your-practice/guidelines/handi/interventions/exercise-for-preventing-recurrent-ankle-sprain/#downloads>). It includes an explanation of when to introduce the more difficult variations of the exercises.

Ankle app

Alternatively, or in addition to the printed information, patients with a smart phone can download Ankle.



Ankle

This app guides people through the whole exercise program.

It includes illustrations and instructions and has other functions that help people to complete the program, such as reminders for scheduled sessions.

Ankle costs \$1.20–\$1.50 from Appstore or Google play.

More information about the app can be found at Sports Lifestyle Health <http://slhamsterdam.com/ankle-app-gaining-ground>

*The RACGP gratefully acknowledges the contribution of Professor Evert Verhagen in the development of this intervention.
First published: November 2014*