



PREVENTION. CARE. RECOVERY.

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ACC Review:

Acute Soft Tissue Ankle Injuries effectiveness of interventions

- In the treatment of acute soft tissue ankle injuries (grades I, II or III)
 - There is sufficient evidence to encourage functional treatment with early mobilisation for all grades of ankle sprain and rehabilitation programmes that include balance and co-ordination exercises
 - There is sufficient evidence to discourage cast immobilisation and laser therapy
 - There is some evidence to encourage elevation, and discourage contrast baths
 - The evidence is inconclusive on the use of ice, electrotherapy and manual therapy
 - There is insufficient evidence to evaluate the use of acupuncture
- Until proven or refuted, current consensus-based recommendations remain the mainstay of treatment

Background¹

Ankle sprains represent around 15-20% of all sporting injuries and about 10% of all presentations to the A&E. Most resolve with functional treatment, however, some develop residual symptoms with varying degrees of disability. The goal of treatment is to reduce swelling and pain, and restore joint stability.

In 2001 ACC commissioned a comprehensive literature review of the effectiveness of interventions (excluding pharmacological and surgical) to treat all grades (I, II, or III) of acute or sub-acute soft tissue ankle injuries, (excluding distal tibiofibular syndesmosis), in individuals aged between 15-60 years. Over 40 randomised-controlled trials (RCTs) were evaluated.

Interventions¹

Therapeutic heat and cold, compression and elevation

Seven studies investigated the effectiveness of one or more interventions involving ice, heat, compression and/or elevation. Based on these studies the authors concluded that:

- the evidence for using ice for acute ankle sprains is inconclusive
- the use of heat, cold and contrast baths may increase swelling
- there is some evidence to indicate that elevation is effective in reducing swelling.

Immobilisation

Sixteen studies compared immobilisation (plaster of Paris) and some form of bracing or early mobilisation. The period of immobilisation ranged from 1-6 weeks. Although further improved studies are required, the authors concluded that:

- there is a trend indicating that early mobilisation improves early outcomes, such as return to work, with some evidence for similar outcomes long term
- there is no evidence to support the use of cast immobilisation in ankle sprains.

Functional treatment

Seven studies investigated the use of various types of soft tissue taping and bracing. Bracing included compression pads, aircast stirrup, scotchrap, malleotrain, Nottingham ankle brace, gel cast and various types of strapping. Four trials included days off work as an outcome of which three resulted in a significant reduction in sick leave. Other outcomes included pain, swelling, range of movement, weight bearing and comfort. The authors concluded that:

- there is no evidence to indicate that any one type of taping brace is superior and therefore personal preference, comfort and cost are the main determinants
- further research is required to evaluate use in stable and unstable sprains.

Electrotherapy

Ultrasound: The findings from a series of systematic literature reviews have been inconclusive. The authors concluded that:

- while there may be beneficial effects of ultrasound at the physiological level, there may be little benefit in functional outcomes (e.g. return to daily activity, sport and work).

Short-wave: Six studies investigating the effects of either pulsed (PSWD) or continuous short-wave (SWD) were identified.

Outcome measures included pain, swelling, range of movement, weight bearing, functional activities, and return to work, sport and usual activities. The authors concluded that:

- the evidence is inconclusive, but as it is not time or cost efficient and is no longer routinely taught, no further investigation is required.

Laser: A high-quality RCT found that treatment with both high- and low-dose laser therapy resulted in delayed recovery compared with a placebo laser. The authors concluded that:

- the use of laser therapy should be discouraged.

TENS and Interferential - No RCTs were found.

Manual therapy

Two RCTs were identified. One investigated the use of an antero-posterior (AP) glide of the talus to restore dorsiflexion, and the other a gapping adjustment to improve function. There were no significant differences in the return to normal walking, running and/or work and sport. The authors concluded that further research is required.

Rehabilitation of ankle sprain

Three RCTs investigated the effects of various types of programmes on outcomes, such as incidence of instability and recurrence. The studies indicate that supervised rehabilitation and the use of proprioceptive (balance and co-ordination) training reduces instability and the rate of recurrence. The authors concluded that:

- supervised rehabilitation and co-ordination training should be recommended.

Acupuncture

No RCTs (in the English language) were found. One RCT investigated the role of a neuroprobe in treating Grade II ankle sprains that did not involve needling (used as an electrical probe to deliver mild stimulation to selected acupuncture points). The authors concluded that:

- evidence for the use of a neuroprobe is inconclusive.

In Summary

There is sufficient evidence to:

- recommend functional treatment with early mobilisation for all grades of ankle sprain, including proprioceptive training in rehabilitation
- discourage the use of cast immobilisation and laser therapy for any grade of ankle sprain.

However, for much of the current clinical practice the evidence is either inconclusive or non-existent and further research is required. In this instance, the evidence provides only limited assistance in informing clinical decisions and current consensus-based recommendations² remain the mainstay until proven or refuted.

References

1. Effective Practice Institute, Division of Community Health, University of Auckland. Managing Soft Tissue Ankle Injuries - A summary of recent research. Commissioned by ACC, 2001.
2. <http://www.acc.co.nz/for-providers/resources/treatment-profiles/>