

Cochrane Quality and Productivity topics

Therapeutic ultrasound for acute ankle sprains

NICE has developed the Cochrane Quality and Productivity topics to help the NHS identify practices that could be significantly reduced or stopped completely, releasing cash and/or resources without negatively affecting the quality of NHS care. Each topic has been derived from a Cochrane systematic review that has concluded that the evidence shows that the practice is harmful or ineffective and should not be used, or that there is insufficient evidence to support widespread use of the practice.

Summary

NICE summary of Cochrane review conclusions

Ultrasound has been used to treat a variety of musculoskeletal disorders including acute ankle sprains. Evidence shows that it does not seem to enhance recovery, help reduce the symptoms of pain and swelling, or improve the ability to stand on the affected foot and ankle. Given the limited clinical impact of treatment effects and short-term nature of acute ankle sprains, therapeutic ultrasound should not be routinely used for this condition.

The 'Implications for practice' section of the Cochrane review stated:

'There are still only a few trials evaluating the effectiveness of ultrasound therapy for acute ankle sprains. The evidence from the 5 placebo-controlled trials included in this review does not support the wide use of ultrasound in the treatment of acute ankle sprains. The potential treatment effects of ultrasound appear to be generally small and probably of limited clinical importance, especially in the context of the usually short-term recovery period for these injuries. Due to the limited amount of information on treatment parameters, no conclusions can be made regarding an optimal and adequate dosage schedule for ultrasound therapy or whether such a schedule would improve on the reported effectiveness of ultrasound for ankle sprains.'

Details of Cochrane review

Cochrane review title

Therapeutic ultrasound for acute ankle sprains

Citation

[van den Bekerom MPJ, van der Windt DAWM, ter Riet G, van der Heijden GJ, Bouter LM. Therapeutic ultrasound for acute ankle sprains. Cochrane Database of Systematic Reviews 2011, Issue 6. Art. No.: CD001250. DOI: 10.1002/14651858.CD001250.pub2](#)

When the review content was assessed as up to date

22 December 2010

QIPP category

Right care

Relevant codes

OPCS

ICD10

HRG

N/A

S93.4

P15, H42

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Programme budget:

Trauma and injuries

Evidence

Relevance to the NHS

Acute soft tissue injuries of the ankle, involving simple stretching, partial rupture or complete rupture of at least 1 ligament, are the most common sports injury. These injuries result in high costs to society through absence from work and use of healthcare resources. There are uncertainties about the best treatment for acute ankle injuries. Acute ankle sprains may be associated with long-term complaints of pain, functional disability and absence from work. People with chronic ankle instability show symptoms of pain, swelling, recurrent sprains and instability for longer than 6 months. Despite their importance, there is still debate regarding the management of acute ankle sprains. Standard treatment is usually rest, ice, compression and leg elevation (RICE therapy), but additional treatment is often considered necessary.

Ultrasound has been used for treating musculoskeletal conditions for many years. Laboratory research has demonstrated that ultrasound increases cellular metabolic rate and the viscoelastic properties of collagen. A rise in temperature is assumed to be the mediating mechanism for tissue repair, enhanced soft tissue extensibility, promotion of muscle relaxation, augmentation of blood flow and alleviation of inflammatory reactions of soft tissue.

Randomised and quasi-randomised (participants allocated to a treatment by alternating dates of birth or hospital record numbers for example) controlled clinical studies evaluating therapeutic ultrasound for acute ankle sprains were considered. Five trials (total 580 participants) were identified that included comparisons of ultrasound therapy with sham ultrasound as a placebo. The assessment of risk of bias was hampered by poor reporting of trial methods and results. None of the 5 placebo-controlled trials demonstrated statistically significant or clinically important differences between true and sham ultrasound therapy after 1–4 weeks of follow-up for any outcome measure: general improvement, pain, swelling, functional disability or range of motion. The pooled risk ratio for general improvement at 1 week was 1.04 (random-effects model, 95% confidence interval 0.92 to 1.17) for active versus sham ultrasound. The differences between intervention groups were generally small, between 0 and 6%, for most dichotomous outcomes.

These results indicate that ultrasound therapy does not seem to enhance recovery or help to reduce pain and swelling after an ankle sprain, or improve the ability to stand on the affected foot and ankle. Most ankle sprains heal quickly. While ultrasound may still improve recovery in a small way, this potential benefit is probably too small to be important.

Relevant NICE guidance and products

No relevant NICE guidance or evidence updates were available at the time of publication (January 2013)

Other accredited guidance

No relevant accredited guidance was available at the time of publication (January 2013)

Potential productivity savings

Estimate of current NHS use

Estimates of the incidence of ankle sprain vary. Bridgman et al (2003) estimated the incidence rate to be 52.7 to 54.0 per 10,000 population based on data from accident and

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emergency unit admissions, indicating that there are 302,000 ankle sprains every year in the UK. BUPA (2012) estimates that 5000 people a day sprain an ankle in the UK (approximately 4100 in England), although the source of this information is not stated. It is not known how many of these sprains are acute or how often therapeutic ultrasound is used because it is not the first-line treatment.

Level of productivity savings anticipated

There is no unit cost available for therapeutic ultrasound. Clinical opinion suggests it is provided by physiotherapists as part of a suite of treatments. Not undertaking ultrasound may free up capacity in physiotherapy departments.

Type of saving

There is no impact on cash. However, it is likely resources are freed up that can be used for other conditions.

Any costs needed to achieve the savings

Change can be achieved without any costs involved

Other information

None available

Potential impact on quality of NHS care

Impact on clinical quality

Clinical quality will not be affected because the first-line treatment remains the same (rest, ice, compression, elevation).

Impact on patient safety

Patient safety will not be affected

Impact on patient and carer experience

The patient experience may improve because patients will not have to attend therapeutic ultrasound sessions.

Likely ease of implementation

Time taken to implement

Can be implemented quickly (0–3 months)

Healthcare sectors affected

Affects multiple organisations within the NHS; primary care in terms of referral practice, and secondary care (physiotherapy) in terms of fewer referrals.

Stakeholder support

Likely to achieve good buy-in from key influencers

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References

Bridgman SA, Clement D, Downing A, Walley G, Phair I, Maffulli D (2003) Population based epidemiology of ankle sprains attending accident and emergency units in the West Midlands of England, and a survey of UK practice for severe ankle sprains. *Emergency Medicine Journal* 20: 500

BUPA (2012) [Sprained ankle](#) (accessed 08 January 2013)