

RICE or ice: what does the evidence say? The evidence base for first aid treatment of sprains and strains

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INTRODUCTION & OBJECTIVES

Belgian Red Cross-Flanders develops evidence-based first aid guidelines for laypeople, as a part of its strategy to give evidence-based support for all its activities. In the revision of the Flemish first aid manual, the effectiveness of RICE, an acronym for Rest, Ice, Compression and Elevation, as a treatment for sprains and strains, was investigated. Current recommendations state that a person should not move the injured limb and to apply ice to the injured area. Furthermore, it is suggested that a compression bandage might give relief.

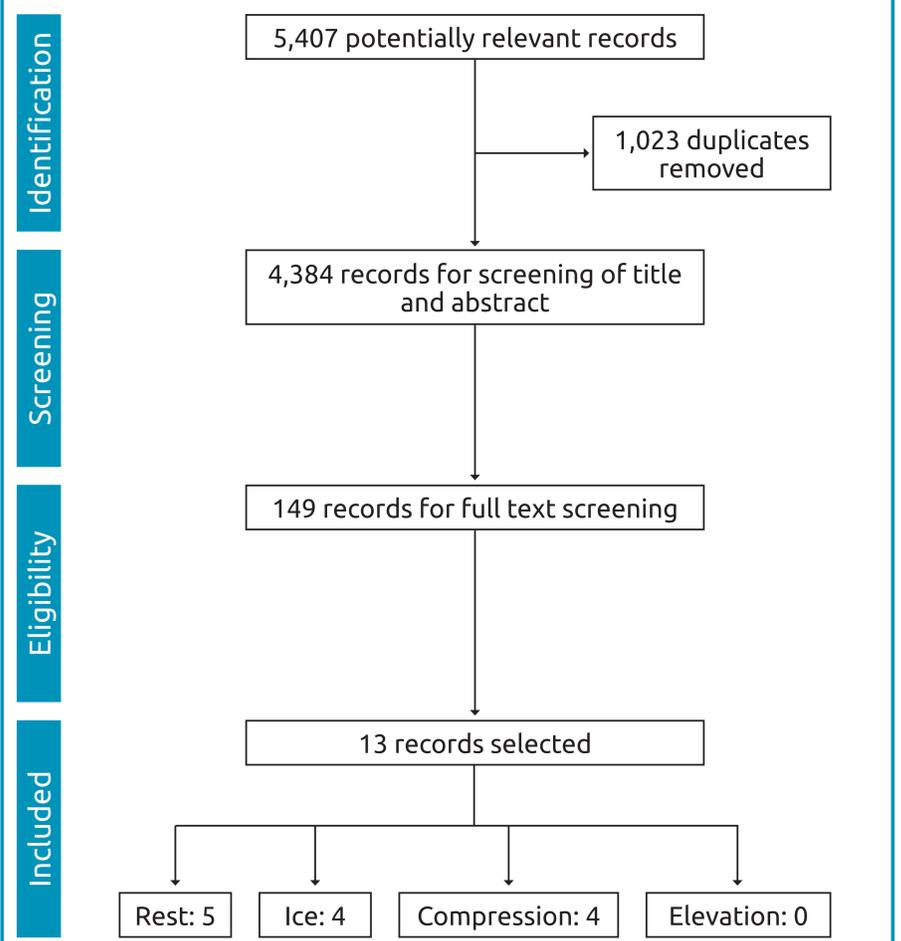
METHODS

- 4 PICO questions:
 - In humans with strains or sprains (P), is rest (I) compared to no rest (C) effective to improve health outcomes (O)?
 - In humans with strains or sprains (P), is ice (I) compared to no ice (C) effective to improve health outcomes (O)?
 - In humans with strains or sprains (P), is compression (I) compared to no compression (C) effective to improve health outcomes (O)?
 - In humans with strains or sprains (P), is elevation (I) compared to no elevation (C) effective to improve health outcomes (O)?
- 4 separate systematic literature searches in 4 databases (Medline, Embase, CENTRAL and Cinahl)
- In- and exclusion criteria:
 - Population: people with strains or sprains
 - Intervention: rest or ice (or a combination of ice with rest, compression and/or elevation as an intervention) or compression or elevation. Interventions that are performed or feasible to be performed by lay people.
 - Comparison: no intervention
 - Outcomes: ankle function, pain, swelling, time to return to work, time to recovery, weight bearing
 - Study design: Systematic reviews and randomised controlled trials.
 - Language: English
 - Publication year: no restrictions

RESULTS

- Box 1 shows the selection flowchart
- 13 studies were included
 - Rest: 5 studies showing limited evidence in favour of mobilization^[1-5]
 - Ice: 4 studies showing limited evidence favouring of the use of ice^[6-9]
 - Compression: 4 studies showing limited evidence refuting the use of compression^[10-13]
 - Elevation: No evidence was found.
- According to the GRADE methodology^[14], evidence was of low to very low quality and results were imprecise due to limited sample size, lack of data and/or large variability of results.

Box 1: Study selection flowchart for first aid interventions for sprains and strains



CONCLUSIONS

- The evidence confirms the application of ice.
- The recommendation not to move the injured limb might remain, since the evidence we found against rest is concerning the recovery phase and not the acute (first aid) phase.
- The recommendation on the use of a compression bandage might change since the evidence does not favour compression in the treatment of strains or sprains. A multidisciplinary panel of experts will discuss new draft recommendations while taking into account this evidence.
- This evidence shows the relevance of updating first aid guidelines, since recommendations might change based on new evidence and updated methodology.

