

**LOW INTENSITY LASER IN VENOUS ULCER HEALING: SYSTEMATIC
REVIEW WITH METASYNTHESIS**

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OBJECTIVE

To analyze the effects of low-intensity laser on venous ulcer healing.

METHODS

Systematic review (SR) with meta-synthesis following the Cochrane protocol, reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and registered in the International Prospective Register of Systematic Reviews (PROSPERO) under number CRD420211256286. The research question was structured according to the acronym Patient-Intervention-Comparison-Outcomes, where: P=adults with venous ulcers (VU); I=Low Intensity Laser Therapy (LLLT); C=conventional VU treatments; O=healing; resulting in: "what are the outcomes of using Low

Intensity Laser when compared to conventional treatment for the healing of venous ulcers in adults?”. The databases consulted were Scientific Electronic Library Online (SciELO), Latin American and Caribbean Health Sciences Literature (LILACS), Cochrane Library, Excerpta Medica Database (EMBASE), Cumulative Index to Nursing and Allied Health Literature (CINAHL); Scopus, Web of Science; Medical Literature Analysis and Retrieval System Online (MEDLINE/Pubmed); as well as Google Scholar. The searches used the Health Sciences Descriptors (DeCS) and Medical Subject Headings (MeSH), as well as the Boolean operators AND and OR. The selection was carried out by two blind evaluators and the Kappa coefficient was used to assess agreement. Duplicate studies were removed using EndNote Online and then exported to the Rayyan platform. The reviewers assessed titles and abstracts, where there were no differences between peers. Subsequently, the full articles were read and critically analyzed to compose the final sample. At this stage there was disagreement between the reviewers (Kappa 0.40), requiring a third reviewer. The PEDRo Scale was used to assess methodological quality, with no differences between the evaluators. The results were presented by meta-synthesis, containing an analysis of the dosimetric parameters and the outcomes of LTBI in the healing process.

RESULTS

We selected 10 clinical trials published between 1998 and 2024, with reasonable methodological quality, according to the PEDRo scale. The dosimetric parameters were: power between 10 and 30 nW, red light emission in the 660 to 685 nm range and energy dose between 1 and 6 J/cm². The frequency of application was not specified in the vast majority of articles, except for one which specified the spot application technique. The most commonly assessed outcomes were a reduction in the size (area) of the wound, healing time and improved regeneration.

CONCLUSION

Low-intensity laser therapy is associated with improved healing in people with venous ulcers. The clinical criteria of the patients, dosimetric parameters,

treatment time, type of clinical protocol and differences between outcome measures made it difficult to compare the studies.

Palavras-chave: key words: varicose ulcer; low-intensity light therapy; systematic review.