

# 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:

Acronym: Patient-Intervention-Comparison-Outcomes

**P**=adults with venous ulcers (VU);  
**I**=Low Intensity Laser Therapy (LLLT);  
**C**=conventional VU treatments;  
**O**=healing;



“what are the outcomes of using Low Intensity Laser when compared to conventional treatment for the healing of venous ulcers in adults?”

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/cm<sup>2</sup>. 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.

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers and other sources

