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### The Effects of Exercise Interventions for Patients with Venous Lower Limb Ulcers: A Systematic Review

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## Background:

- Vascular disease and pathologies are the leading cause of lower extremity wounds
- Vascular disease cause vascular insufficiencies and delayed healing
- Vascular disease often occurs in the older population
- 30 million Americans are affected by vascular disease
- Current standard treatment: standard wound care, compression therapy, medication, Hyperbaric oxygen therapy
- Exercise increases blood flow to tissue

## Purpose:

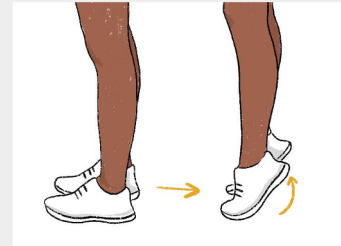
The aim of this study is to evaluate the effects of exercise performed by patients with lower extremity wounds from venous etiology, specifically the impact of exercise on wound healing, function, and quality of life.

## Methods:

- Article search conducted Aug-Sep 2020
- Updated Jan 2021: no new articles found
- **Databases:** PEDro, Medline, PubMed
- **Search terms:** (Venous Ulcer OR Venous Leg Ulcer) AND (Physical therapy or physiotherapy Or exercise) AND (Lower leg)
- Forward searching was also used
- **Inclusion criteria:** peer reviewed articles, publications between 2015-2020, RCT, PEDro score  $\geq$  4/10
- **Exclusion criteria:** study protocols, not available in English, published before 2015, did not discuss exercise or PT as part of treatment

## The Benefits and Effects of Exercise Interventions and Local Care Versus Standard Wound Care Procedures on Patients with Venous Lower Limb Ulcers

Exercise **aids and improves** healing rates and healing outcomes for patients with venous lower limb ulcers.



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## Results:

- Wound Healing Measures
  - Wound healing rates and PUSH scores of the exercise groups showed significant improvement when comparing exercise and control groups
  - Ulcer Size measurements between exercise and control groups were not significantly different
- Functional Outcomes
  - Ankle ROM measurements between control and exercise groups were not significantly different - some outliers
  - Strength measurements between control and exercise groups were not significantly different
  - Gait measures between control and exercise groups were not significantly different at final assessment
- QoL Measurements
  - QoL Questionnaires showed no significant differences or trends were found between intervention and control groups
  - Pain showed significant improvement within intervention groups and significant difference when comparing intervention and control groups

## Conclusions:

- Exercise and activity is a great option as an **adjunct intervention** when treating patients with venous leg ulcers
- Physical activity can aid in speeding up the healing process and can lead to better functional and QoL outcomes
- Even minimal movement and activity is beneficial to aid in the rehabilitation and healing of those with venous leg ulcers
- Further research is required to determine the most effective interventions and the effects of exercise on broader functional outcome measures