

## **Exercise fidelity and progression in a supervised exercise programme for adults with venous leg ulcers**

KLONIZAKIS, Markos <<http://orcid.org/0000-0002-8864-4403>>, GUMBER, Anil <<http://orcid.org/0000-0002-8621-6966>>, MCINTOSH, Emma, KING, Brenda, MIDDLETON, Geoff, MICHAELS, Jonathan A and TEW, Garry

Available from Sheffield Hallam University Research Archive (SHURA) at:

<http://shura.shu.ac.uk/20908/>

---

This document is the author deposited version. You are advised to consult the publisher's version if you wish to cite from it.

### **Published version**

KLONIZAKIS, Markos, GUMBER, Anil, MCINTOSH, Emma, KING, Brenda, MIDDLETON, Geoff, MICHAELS, Jonathan A and TEW, Garry (2018). Exercise fidelity and progression in a supervised exercise programme for adults with venous leg ulcers. *International Wound Journal*, 15 (5), 822-828.

---

### **Copyright and re-use policy**

See <http://shura.shu.ac.uk/information.html>

## **Exercise Fidelity and Progression in a Supervised Exercise Programme for Adults with Venous Leg Ulcers.**

Markos Klonizakis DPhil<sup>1</sup>, Anil Gumber PhD<sup>2</sup>, Emma McIntosh Msc<sup>1</sup>, Brenda King Msc<sup>3</sup>, Geoff Middleton Msc<sup>4</sup>, Jonathan A. Michaels MChir<sup>5</sup>, Garry A. Tew PhD<sup>6</sup>.

<sup>1</sup>Centre for Sport and Exercise Science, Sheffield Hallam University, Sheffield, United Kingdom, S10 2BP

<sup>2</sup>Department of Allied Health Professions, Faculty of Health and Wellbeing, Sheffield Hallam University, Sheffield, United Kingdom, S10 2BP

<sup>3</sup>Manor Clinic, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, United Kingdom, S12 2ST

<sup>4</sup>School of Sport and Exercise Science, University of Lincoln, Brayford Pool, Lincoln, Lincolnshire LN6 7TS

<sup>5</sup>School of Health and Related Research, University of Sheffield, Sheffield, United Kingdom, S1 4DA.

<sup>6</sup>Department of Sport, Exercise and Rehabilitation, Northumbria University, Newcastle-upon-Tyne, United Kingdom, NE1 8ST

\*Correspondence and requests for reprints to:

Dr Markos Klonizakis, Centre for Sport and Exercise Science, Sheffield Hallam University, Sheffield, S10 2BP. Email: [M.Klonizakis@shu.ac.uk](mailto:M.Klonizakis@shu.ac.uk) Tel: +44(0)1142252465

Keywords: venous ulcers, aerobic exercise, intervention fidelity, exercise progression, safety

## **Abstract**

Purpose of investigation: Despite exercise being included in the recommended advice for patients with venous leg ulcers, there is a fear shared by clinicians and patients that exercise may be either inappropriate or harmful and actually delay rather than promote healing.

Therefore, before implementing a larger scale study, exploring the effects of a supervised exercise programme in patients with venous ulcers being treated with compression therapy, it is important to assess exercise safety as well as fidelity and progression in a feasibility study.

Methods: Eighteen participants randomised in the exercise group were asked to undertake 36 (3 times/week for 12 weeks), 60-minute exercise sessions, each comprising moderate-intensity aerobic, resistance and flexibility exercise components. For the purposes of this paper we analysed the data collected during the exercise sessions.

Results: The overall session attendance rate was 79%, with 13/18 participants completing all sessions. No in-session adverse events were reported. 100% aerobic components and 91% of resistance components were completed within the desired moderate-intensity target. Similarly, 81% of aerobic components and 93% of flexibility components were completed within the prescribed duration targets.

Conclusions: Our data showed that patients with venous ulcers could safely follow a supervised exercise programme incorporating moderate-intensity aerobic, resistance and flexibility components.

## **Acknowledgements**

The FISCU study was funded by the National Institute for Health Research (NIHR) Research for Patient Benefit Programme (grant PB-PG-0213-30029). This funding source had no role in the design of this study and will not have any role during its execution, analyses and interpretation of the data. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

---