







Please cite the Published Version

Pymmer, Sean , Harwood, Amy E , Prosser, Jonathon, Waddell, Alexander, Rhavindhnan, Bharadhwaj, Ibeggazene, Said , McGregor, Gordon , Huang, Chao, Twiddy, Maureen, Nicholls, Adam R , Ingle, Lee, Carroll, Sean, He, Heije , Long, Judith, Rooms, Marjorie and Chetter, Ian C (2023) High-intensity interval training in patients with intermittent claudication: Presented at the 2022 Vascular Society of Great Britain and Ireland Annual Scientific Meeting, Brighton, United Kingdom, November 23-25, 2022; presented at the 2023 Surgical Research Society Meeting, Nottingham, United Kingdom, March 22-24, 2023; and presented at the 2023 Vascular Annual Meeting of the Society for Vascular Surgery, National Harbor, MD, June 14-17, 2023. In: 2022 Vascular Society of Great Britain and Ireland Annual Scientific Meeting, 23 November 2022 - 25 November 2022, Brighton, United Kingdom.

DOI: <https://doi.org/10.1016/j.ejvs.2023.09.031>

Publisher: Elsevier BV

Version: Accepted Version

Downloaded from: <https://e-space.mmu.ac.uk/633791/>

Usage rights:  In Copyright

Enquiries:

If you have questions about this document, contact openresearch@mmu.ac.uk. Please include the URL of the record in e-space. If you believe that your, or a third party's rights have been compromised through this document please see our Take Down policy (available from <https://www.mmu.ac.uk/library/using-the-library/policies-and-guidelines>)

High-intensity interval training in patients with intermittent claudication: Presented at the 2022 Vascular Society of Great Britain and Ireland Annual Scientific Meeting, Brighton, United Kingdom, November 23-25, 2022; presented at the 2023 Surgical Research Society Meeting, Nottingham, United Kingdom, March 22-24, 2023; and presented at the 2023 Vascular Annual Meeting of the Society for Vascular Surgery, National Harbor, MD, June 14-17, 2023.

Sean Pymmer PhD, Amy E. Harwood PhD, Jonathon Prosser MSc, Alexander Waddell MSc, Bharadhwaj Rhavindhnan MBBS, Said Ibeggazene PhD, Gordon McGregor PhD, Chao Huang PhD, Maureen Twiddy PhD, Adam R. Nicholls PhD, Lee Ingle PhD, Sean Carroll PhD, Heije He MD, Judith Long MSc, Marjorie Rooms, Ian C. Chetter MD

Objective: Provision, uptake, adherence, and completion rates for supervised exercise programs (SEP) for intermittent claudication (IC) are low. A shorter, more time-efficient, 6-week, high-intensity interval training (HIIT) program may be an effective alternative that is more acceptable to patients and easier to deliver. The aim of this study was to determine the feasibility of HIIT for patients with IC.

Methods: A single arm proof-of-concept study, performed in secondary care, recruiting patients with IC referred to usual-care SEPs. Supervised HIIT was performed three times per week for 6 weeks. The primary outcome was feasibility and tolerability. Potential efficacy and potential safety were considered, and an integrated qualitative study was undertaken to consider acceptability.

Results: A total of 280 patients were screened: 165 (59%) were eligible, and 40 (25%) were recruited. The majority (n = 31; 78%) of participants completed the HIIT program. The remaining nine patients were withdrawn or chose to withdraw. Completers attended 99% of training sessions, completed 85% of sessions in full, and performed 84% of completed intervals at the required intensity. There were no related serious adverse events. Maximum walking distance (+94 m; 95% confidence interval, 66.6-120.8 m) and the SF-36 physical component summary (+2.2; 95% confidence interval, 0.3-4.1) were improved following completion of the program.

Conclusions: Uptake to HIIT was comparable to SEPs in patients with IC, but completion rates were higher. HIIT appears feasible, tolerable, and potentially safe and beneficial for patients with IC. It may provide a more readily deliverable, acceptable form of SEP. Research comparing HIIT with usual-care SEPs appears warranted.