

Exercise for intermittent claudication and peripheral arterial disease

Walking and other exercises benefit patients with peripheral arterial disease (PAD), including those with intermittent claudication. Exercise programs, which may be home-based, increase walking time and distance. Exercise has National Health and Medical Research Council (NHMRC) Level 1 evidence of efficacy. This article is part of a series on non drug treatments, summarising indications, considerations, evidence and sources of further information for clinicians and patients.

The condition

Intermittent claudication

Intermittent claudication is a common symptom in patients with peripheral arterial disease (PAD). Patients become aware of calf pain and, at times, thigh and buttock pain, which is induced by exercise and resolves with rest.

The intervention

Exercise, including walking, programs

Exercise programs increase walking time and distance. Specific details of effective exercise programs vary. The following is an example of a walking program based on the principles of interventions in published studies:

- walk at an intensity that elicits tolerable claudication
- rest until the pain subsides enough to resume walking
- continue the cycle of 'walk–rest', starting with sessions of 10–20 minutes
- gradually increase session times by 5 minutes, until 40–60 minutes of intermittent walking is achieved at each session
- aim for walking sessions on 3–5 days of each week.

Availability

Walking is a readily available activity

Evidence suggests that motivated patients benefit

more from exercise programs. Motivation may be improved by supervision, psychological interventions and with devices such as step-counters, which are widely available.

Although unsupervised home-based programs are beneficial, supervised programs are more effective. Supervised training is available from some physiotherapists and exercise therapists. In supervised sessions, individual claudication thresholds and other cardiovascular parameters are monitored and workload is adjusted accordingly.

What should I consider?

Precautions

People with PAD are at increased risk of cardiovascular diseases, including ischaemic heart disease and stroke, which should also be considered. Appropriate footwear is required to reduce the risk of foot injury, especially as patients with PAD are predisposed to foot ulcers and infections.

Evidence

National Health and Medical Research Council (NHMRC) Level I evidence (systematic review of randomised controlled trials) for exercise. Level II evidence (randomised controlled trial) for home-based walking programs.

Anything else?

Some patients consider that pain is a sign of ongoing damage. They may need reassurance that ischaemic calf pain does not damage muscles.

Key references

- Bendermacher B, Willigendael E, Tejjink J, Prins M. Supervised exercise therapy versus non-supervised exercise therapy for intermittent claudication. *Cochrane Database Syst Rev* 2006;2:CD005263.
- Gardner A, Parker D, Montgomery P, Scott K, Blevins S. Efficacy of quantified home-based exercise and supervised exercise in patients with intermittent claudication: a randomized controlled trial. *Circulation* 2011;123:491–98.
- McDermott M, Liu K, Guralnik J, et al. Home-Based Walking Exercise Intervention in Peripheral Arterial Disease: A Randomized Clinical Trial. *JAMA* 2013;310:57–65.
- Watson L, Ellis B, Leng G. Exercise for intermittent claudication. *Cochrane Database Syst Rev* 2008;4:CD000990.

Patient resources

Patient.co.uk has an excellent explanation of PAD, including exercise and other lifestyle factors involved. Available at <http://www.patient.co.uk/health/peripheral-arterial-disease-in-legs>

Authors

HANDI Project team

Acknowledgements

Handbook of Non Drug Intervention (HANDI) Project team members include Professor Paul Glasziou, Dr John Bennett, Dr Peter Greenberg, Professor Sally Green, Professor Jane Gunn, Associate Professor Tammy Hoffman and Associate Professor Maria Pirota.

Competing interests: None.

HANDI is supported by a grant from the Jack Brockhoff Foundation.

Provenance and peer review: Commissioned; not peer reviewed.