

Infographic. exercise for intermittent claudication

Garry A Tew ^{1,2}, Louise Allen, ³ Christopher D Askew, ^{4,5} Ian Chetter, ⁶ Gabriel Cucato, ¹ Patrick Doherty, ² Andrew Garnham, ⁷ Amy Harwood, ^{8,9} Lee Ingle, ⁹ Michael Jenkins, ³ Jonathan Michaels, ¹⁰ Sara Pittack, ¹¹ Chris Seenan, ¹² Hazel Trender ¹³

Exercise for Intermittent Claudication

What is intermittent claudication?

- Leg muscle pain or discomfort during walking
- Usually caused by narrowed arteries

NICE National Institute for Health and Care Excellence

RECOMMENDS EXERCISE

Supervised exercise classes produce the greatest benefits - ask your doctor or specialist if these are available locally

Benefits of exercise

- ✓ Reduces pain
- ✓ Reduces the need for vascular procedures
- ✓ Improves heart and vascular health
- ✓ Improves mood
- ZZ Improves sleep
- ✓ Maintains healthy weight

Walk at a speed that you can maintain for 3-10 minutes

to reduce pain and improve fitness

Walk regularly for exercise

some is good, more is better, make it a habit

Key recommendations

- Aim to complete 30-60 minutes of walking per session
- Follow the walk-rest-walk pattern (central diagram)
- 3-5 sessions per week

Further guidance

- Do not fear walking with leg pain – it will not harm you
- Build up gradually – your walking speed and time
- Be patient – it usually takes several weeks of exercise to improve symptoms

General tips

- Wear comfortable clothing, keep hydrated
- Choose routes with resting places
- Build in variety, involve others, keep it fun
- Do not exercise if you are unwell
- Seek medical advice if you experience chest pain, dizziness or sickness

Do strengthening and balance activities as well

... on at least 2 days per week
... to stay strong and reduce the risk of falling

Where can I find out more information about this condition?
The Circulation Foundation: www.circulationfoundation.org.uk

Source:
Based on the BASES Expert Statement by Tew, Harwood, Ingle, et al. in The Sport and Exercise Scientist, Issue 57 (Autumn 2018), https://www.bases.org.uk/imgs/autumn_2018_7601_bas_expert_statement_v2_569.pdf

Disclaimer:
This infographic is not a validated clinical decision aid. Any reliance placed on this information is strictly at the user's own risk.

Thanks:
To the reviewers who helped to produce this infographic, which was co-funded by The Circulation Foundation and Northumbria University.

first-line therapy for IC, and that revascularisation and vasodilator therapy should only be considered if exercise provides insufficient symptom relief. Although research studies have shown unsupervised exercise to be generally less effective at improving functional status than an SEP, it can still be effective, and should be recommended if an SEP is not available.^{1,2}

The evidence supporting the efficacy of exercise for people with IC dates back to 1966 when a study reported that 6 months of interval walking exercise improved patients' pain-free and maximum walking distances.³ Over the following 50+ years, numerous randomised trials and meta-analyses have been published supporting the efficacy of exercise in improving functional status in this population.⁴ Despite this evidence and the clinical guideline recommendations, the provision of SEPs is variable, with one study reporting that only 38.5% of vascular units in the UK had access to an SEP.⁵ Potential barriers include a lack of funding, facilities and patient motivation.

The benefits of exercise for people with IC are too great to be ignored. Therefore, to support the provision and uptake of exercise, we have developed two new resources. First, a statement for healthcare professionals that summarises the evidence and provides exercise prescription guidelines.² Second, an infographic of key messages aimed primarily at patients. This infographic, which may be shared digitally or used as a poster or handout in clinics, aims to encourage patients to make exercising a regular habit by highlighting potential benefits and providing clear guidelines and safety messages. We hope that readers will share this infographic widely to enhance awareness of this debilitating condition and the important role that exercise can play in its management.

¹Department of Sport, Exercise and Rehabilitation, Northumbria University, Newcastle, UK

²Department of Health Sciences, University of York, England, York, UK

³Imperial College Healthcare NHS Trust, London, UK

⁴School of Health and Sport Sciences, University of the Sunshine Coast, Maroochydore DC, Queensland, Australia

⁵Sunshine Coast Health Institute, Sunshine Coast University Hospital, Sunshine Coast, Queensland, Australia

⁶Hull York Medical School, Hull, UK

⁷Royal Wolverhampton Hospitals NHS Trust, Wolverhampton, UK

Intermittent claudication (IC) is pain or discomfort in the muscles of the calf, thigh or buttock that occurs during walking and is relieved by rest. It affects 4% of people over 60 years of age and is the most common symptom of peripheral arterial disease (PAD). For people with IC, the goals of treatment are twofold: (1) secondary prevention of cardiovascular disease through management of risk factors

(eg, tobacco use, dyslipidaemia, diabetes, hypertension and physical inactivity); (2) improving functional status, with treatment options including exercise training, revascularisation and vasodilator therapy.¹

In 2012, the UK's National Institute for Health and Care Excellence published a clinical guideline on the diagnosis and management of PAD.¹ This guideline recommended that a 3-month supervised exercise programme (SEP) should be offered as a

⁸Thermal Ergonomics Laboratory, Discipline of Exercise and Sport Science, The University of Sydney, Sydney, New South Wales, Australia

⁹Department of Sport, Health & Exercise Science, University of Hull, Hull, UK

¹⁰School of Health and Related Research, The University of Sheffield, Sheffield, UK

¹¹Your Thinking Ltd, London, UK

¹²Department of Physiotherapy and Paramedicine, Glasgow Caledonian University, Glasgow, UK

¹³Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK

Correspondence to Dr Garry A Tew, Department of Sport, Exercise and Rehabilitation, Northumbria University, Newcastle NE1 8ST, UK; garry.tew@northumbria.ac.uk

Twitter Garry A Tew @garry_tew and Chris Seenan @chriseenan

Contributors GT led the design of the infographic and drafted the accompanying text. All coauthors contributed to the design of the infographic and reviewing and revising the text. All authors approved the final version to be published and are accountable for all aspects of the work.

Funding The infographic was funded by The Circulation Foundation and Northumbria University.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.



OPEN ACCESS

Open access This is an open access article distributed in accordance with the Creative Commons Attribution 4.0 Unported (CC BY 4.0) license, which permits others to copy, redistribute, remix, transform and build upon this work for any purpose, provided the original work is properly cited, a link to the licence is given, and indication of whether changes were made. See: <https://creativecommons.org/licenses/by/4.0/>.

© Author(s) (or their employer(s)) 2020. Re-use permitted under CC BY. Published by BMJ.



To cite Tew GA, Allen L, Askew CD, *et al*. *Br J Sports Med* Epub ahead of print: [please include Day Month Year]. doi:10.1136/bjsports-2019-101930

Accepted 23 January 2020

Br J Sports Med 2020;0:1–2.
doi:10.1136/bjsports-2019-101930

ORCID iD

Garry A Tew <http://orcid.org/0000-0002-8610-0613>

REFERENCES

- 1 National Institute for Health and Care Excellence. Peripheral arterial disease: diagnosis and management (clinical guideline CG147), 2012. Available: www.nice.org.uk/guidance/cg147
- 2 Tew GA, Harwood A, Ingle L, *et al*. The BASES Expert Statement on exercise training for people with intermittent claudication due to peripheral arterial disease. *The Sport and Exercise Scientist*, 2018. Available: https://www.bases.org.uk/imgs/autumn_2018_7601_bas_expert_statement__v2_569.pdf
- 3 Larsen OA, Lassen NA. Effect of daily muscular exercise in patients with intermittent claudication. *Lancet* 1966;2:1093–5.
- 4 Lane R, Harwood A, Watson L, *et al*. Exercise for intermittent claudication. *Cochrane Database Syst Rev* 2017;12:CD000990.
- 5 Harwood AE, Smith GE, Broadbent E, *et al*. Access to supervised exercise services for peripheral vascular disease patients. *The Bulletin of the Royal College of Surgeons of England* 2017;99:207–11.