

Study challenges 'no pain no gain' requirement for patients with clogged leg arteries

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Patients with peripheral arterial disease should be given the option of pain-free exercise, according to a study published today in the *European Journal of Preventive Cardiology*, a journal of the European Society of Cardiology (ESC).

Around 200 million people worldwide have peripheral arterial disease (PAD), where arteries in the legs are clogged, restricting [blood flow](#) to the legs and raising the chances of stroke and heart attack. Smoking, diabetes, [high blood pressure](#), and high cholesterol all increase the risk of PAD. Around 30% of [patients](#) have [pain](#) and cramping in their legs when they walk—referred to as intermittent claudication.

Exercise is a cornerstone of PAD management, together with smoking cessation, healthy diet, and weight loss. It improves symptoms, mobility and quality of life.

"For many years the standard exercise prescription for patients with PAD has been to walk towards, and push past, moderate to severe pain," said study author Edward Lin, of the University of Toronto, Canada. "Research has shown that this approach improves [walking distance](#) and quality of life.² Naturally if you force patients to walk past their pain thresholds and continue to do so, they're going to get better at walking."

But he added: "Many patients with PAD exercise very little or not at all.

It has been suggested that the pain component of conventional exercise programmes is a deterrent. More recent studies have shown that pain-free forms of exercise are equally effective, but patients are not always given the option."

This study compiled the best evidence and compared completion and adherence rates between traditional versus alternative exercise programmes of at least four weeks duration. Completion was defined as the proportion of participants who finished the programme, while adherence was the percentage of exercise sessions done.

In the study, traditional programmes consisted of walking until moderate to [severe pain](#) was induced, resting until the pain subsided, then repeating the process. Alternative exercises included walking without pain, arm ergometer (an exercise bike for the arms), resistance training, circuit training, lower limb aerobic exercise, and walking with poles.

A total of 84 studies and 4,742 patients were included in the analysis, encompassing 64 traditional walking programmes and 58 alternative exercise programmes. Completion rates were 6% higher in programmes with alternative forms of exercise compared to painful walking (80.8% versus 86.6%). Similarly, adherence was 8% greater in alternative programmes compared to painful walking (77.6% versus 85.5%).

"Pain played a major role in the completion and adherence rates," said Mr Lin. "Walking to pain is effective, but only if patients actually do it. Many clinicians and vascular surgeons still prescribe this type of exercise, but it's important to consider other types of activity, which have also been shown to work."

Mr Lin noted that there is insufficient referral of patients with PAD to cardiac rehabilitation and prevention programmes. An individualised exercise plan that patients are more likely to follow should be developed,

considering their preferences for exercise and potential barriers.

"Pain is not a necessary part of exercise for patients with [peripheral arterial disease](#)," said Mr Lin. "If patients prefer not to walk to pain, they can be encouraged to do pain-free [exercise](#) they enjoy. This should increase the likelihood of maintaining long-term physical activity."

More information: Edward Lin et al, Completion and adherence rates to exercise interventions in intermittent claudication: Traditional exercise versus alternative exercise – a systematic review, *European Journal of Preventive Cardiology* (2019). [DOI: 10.1177/2047487319846997](#)

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