

Exercise Prescription for Patients with Claudication

Peripheral arterial disease may affect as many as 20 percent of persons older than 70 years. Claudication, a common symptom of peripheral arterial disease, is characterized by walking-induced pain, tightness, aching or tiredness in the legs. A commonly used office-based measure to corroborate the presence of claudication is an abnormal ankle-brachial index, which compares the ratio of systolic blood pressure at the ankle and elbow.

A number of prospective studies have demonstrated benefits from exercise training in the treatment of claudication. The degree of improvement in pain-free walking is similar to or even greater than that occurring after revascularization. The greatest benefit has been shown in exercise programs that continued for at least six months, lasted at least 30 minutes per session and more than three times a week, and involved walking until near-maximal pain was reached.

There are several physiologic mechanisms by which exercise training may improve peripheral arterial disease. Animal models have demonstrated increased collateral vessel formation and increased blood flow with exercise training. At the microenvironment level, exercise has been shown to increase production of nitric oxide and other endothelial vasodilating factors. Blood viscosity (thickness) decreases with exercise, and muscle oxidative capacity improves, (the muscles become more efficient at using limited supply of oxygen).

Presented are specific recommendations for an “exercise prescription” to be used by physicians for their patients with claudication. Given the likelihood of comorbid conditions in patients with peripheral arterial they should notify their doctor immediately if exercise results in: chest pain, pain in the left shoulder, arm or jaw, significant shortness of breath, dizziness, lightheadedness or fainting or if they have any other concerns related to beginning exercise.

In patients with progressive claudication symptoms despite exercise training, it may be necessary to consider the use of medication or revascularization procedures as guided by their vascular surgeon.

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult with your doctor. If you have questions or need more information about your medication, please speak to your pharmacist. Kaiser Permanente does not endorse the medications or products mentioned. Any trade names listed are for easy identification only.

Key Elements of an Exercise Training Program for Claudication

Types of Exercise

- Treadmill and track walking are the most effective exercises for claudication.

Intensity

- The initial workload of the treadmill is set to a speed and grade that elicits claudication symptoms within three to five minutes.
- Patients walk at this workload until claudication of moderate severity occurs, then rest standing or sitting for a brief period while symptoms subside.

Duration

- The exercise/rest/exercise pattern should be repeated throughout the session.
- The initial session should include 30 minutes of intermittent walking; walking is increased by five minutes each session until 60 minutes of intermittent walking can be accomplished.

Frequency

- Treadmill or track walking should be done five times per week but can be done daily.

Role of Direct Supervision

- As the patient's walking ability improves, the exercise workload should be increased by modifying the treadmill grade or speed (or both) to ensure that the stimulus of claudication pain always occurs during the workout.

Please call us for questions or concerns:

Walnut Creek Medical Center, 925-295-4110

Antioch Medical Center, 925-813-6330

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