

### What is exercise therapy for PAD?

Exercise therapy is a treatment for [peripheral artery disease](#) that uses supervised exercise to strengthen your leg muscles and improve walking ability. Exercise therapy can relieve the [symptoms of PAD in the legs](#), such as pain during walking that goes away with rest ( *intermittent claudication* ). Women who participate in an exercise program are able to walk further without pain and are better able to perform daily tasks.

Exercise training improves PAD symptoms without the risks of surgery or other procedures to treat PAD. It is also a component of rehabilitation for women who have already had a procedure to restore blood flow to the legs, such as [angioplasty and stenting](#) or [lower extremity bypass surgery](#).

If you have been diagnosed with PAD that is causing symptoms, exercise training will be a key part of your PAD treatment plan.

### How does exercise help women with PAD?

Women with PAD tend to walk less to avoid leg pain, often without realizing how much their symptoms are changing their daily routine. This can begin a destructive cycle: the less you walk, the more your leg muscles waste away (*atrophy*), weakening them and making it even more difficult to walk without pain. Over time, this leads to worsening disability and a greater reliance on others to help with daily tasks. Supervised exercise training helps you break the cycle by gradually building up leg strength and improving walking ability. This reduces the impact of your PAD symptoms and helps you retain your independence.

Exercise training can also correct other harmful changes women adopt as a response to PAD symptoms. Women with PAD unconsciously change their style of walking to favor stability over speed. This makes walking less efficient, meaning the muscles need more oxygen to go a given distance.<sup>1</sup> By strengthening your leg muscles, helping them make better use of energy, and

adjusting the way that you walk (your *gait*) exercise training encourages a healthier walking style that makes the most of your current walking ability.

Exercise training can also improve blood flow in your legs and may even reduce *inflammation* (the body's response to injury) that contributes to

[atherosclerosis](#)

, the gradual narrowing of the arteries that causes PAD.

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### Who should participate in an exercise training program?

All women with PAD in the legs who have leg pain that occurs during activity and is relieved by rest (*intermittent claudication*) should participate in a supervised exercise program. In many cases, exercise training is the first treatment your doctor will prescribe to control your PAD symptoms. You may benefit from exercise training even if you don't have PAD symptoms yet.

While some women can successfully manage their PAD with only exercise training and sometimes [drugs to treat leg pain](#), others will need more invasive treatments to restore blood flow to blocked leg arteries. Women who have undergone a procedure to treat PAD, such as [angioplasty and stenting](#)

or

[peripheral bypass surgery](#)

, may also benefit from a supervised exercise training program as part of their rehabilitation.

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### What does exercise training for PAD consist of?

A typical exercise program for PAD consists of 30 to 60 minute sessions, 3 or more times a week for at least 12 weeks.<sup>3</sup> The sessions may take place in a hospital or an outpatient rehabilitation facility. A physical therapist, nurse, or exercise physiologist will supervise your program. Supervised exercise training is very safe and rarely causes serious heart problems.

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Before your program starts, you will have an

[exercise \(stress\) test](#)

to determine a safe level of activity for you. During the training sessions your heart rate, blood pressure, and heart rhythm may be monitored to watch for any problems, especially if you have

[coronary artery disease](#)

The sessions themselves consist mainly of treadmill walking, with warm-up and cool-down periods of 5 to 10 minutes each. When you start, the treadmill will be set at a speed and elevation that cause leg pain symptoms within 3 to 5 minutes. You will continue walking until you develop moderate pain, after which you will rest briefly (standing or sitting) until your leg pain goes away. This exercise-and-rest pattern will be repeated throughout the session.

Your first session will last for about 35 minutes. As your walking ability and leg pain symptoms improve, the speed and elevation of the treadmill, as well as the duration of exercise, will be gradually increased. In general, each session will be about 5 minutes longer than the previous one until you can exercise for about 50 minutes on-and-off.

### **How well does exercise training work?**

A supervised exercise training program can increase the distance you are able to walk by 20% to 60%,<sup>4</sup> and the time you are able to walk by 150% or more.<sup>5</sup> Studies have also shown an improvement of pain-free walking distance by nearly 80%.

<sup>6</sup>

Exercise training is more effective at increasing walking ability than drugs to treat leg pain (such as cilostazol). One analysis of 22 randomized trials of exercise programs in more than 1,200 people with PAD found that exercise programs improved overall walking ability by 50% to 200%.

<sup>5,7</sup>

These improvements in walking ability translate directly to increased daily activity. Patients who participate in an exercise program are 30% to 40% more active in their daily lives than patients who don't complete a program.<sup>6</sup> The longer your program, the greater the benefits will be. One study found that after completing a 6-month exercise program 3 times per week, improvements in walking ability were maintained during a further 12 months of 2 sessions per week.

<sup>8</sup>

In addition to improving your walking ability, the regular exercise you get in a supervised exercise training program can also help control many of your PAD risk factors, reducing your risk for heart attack and stroke. Heart-healthy changes caused by regular exercise in a supervised training program include:<sup>9</sup>

- Improved HDL ("good") [cholesterol](#) levels
- Lower levels of triglycerides (harmful fats in the blood)
- [Weight loss](#)
- Reduced [blood pressure](#)
- Better control of blood sugar if you have [diabetes](#)
- Lower markers of inflammation (such as [CRP](#) )
- Less depression and stress

By improving your ability to exercise without pain, exercise therapy can also make it easier to get the recommended amount of daily exercise (at least 30 minutes a day most days each week) after your program ends.

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### **Can a home exercise program replace supervised exercise training for PAD?**

Although many women with PAD are simply told by their doctor to "go home and walk," research shows that home-based exercise programs are not as effective as a structured rehabilitation program for women with PAD.<sup>10-12</sup>

Although home exercise is not a replacement for a supervised exercise program, you should continue to exercise at home after your program is over. This will help maintain the improvements you made in your program and lower your risk of heart attack and stroke. Home exercise can be as simple as a 30-minute walk most days each week. A study of 417 patients with PAD (41% were women) found that patients who walked for exercise 3 or more times a week were less likely to lose walking ability over time, and their walking ability declined more slowly, than patients who walked less.<sup>13</sup>

Be sure to talk to your doctor about how much physical activity is right for you before starting a home exercise program. You may also want to talk to your physical therapist as your exercise program nears its end about safe ways you can continue to exercise on your own.

### See also:

[Exercise & Heart Risk](#)  
[Exercise & Stroke Risk](#)

### Learn More:

Visit [www.cleverstudy.org](http://www.cleverstudy.org) to see if you are eligible to participate in a free trial comparing exercise therapy with angioplasty and stents to treat PAD.

### References

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