Exercise and Vascular Disease

What's good for your heart?

Regular daily activities, such as grocery shopping and housework, are good for improving muscle tone and staying active, but for those suffering from vascular disease, exercise that brings on cramping, tightness or fatigue in the calves, thighs and/or buttocks is needed to improve circulation. These symptoms are referred to as *intermittent claudication.* When walking, insufficient blood supply in the legs can cause claudication pain; however, if done on a regular basis, this promotes circulation and has been shown to decrease symptoms and increase walking distance. Many patients with vascular disease never suffer from intermittent claudication; however, regular exercise is still needed to manage the disease.

What are the benefits?

Regular exercise can delay progression of peripheral vascular disease (PVD) symptoms, as well as decrease cardiovascular and cerebrovascular risks. Regular exercise can also help you to:

- Increase exercise tolerance and improve quality of life
- Improve heart and lung fitness
- Lose weight or maintain a desirable weight
- Prevent limb loss
- Control blood cholesterol, blood pressure and diabetes

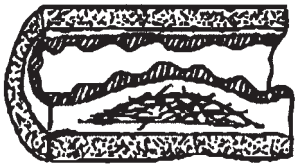
How do you start a program?

If you're not used to exercise, talk with your health care provider before starting an exercise program. Your exercise specialist will set up an exercise program based on recommendations from your health care provider. This program will be geared toward your needs specifically, gradually advancing with duration and intensity of exercise. It doesn't matter at what level you begin; ***what matters is that you keep going.***

What causes intermittent claudication?

- The majority of patients with this condition have damaged arteries that are narrowed or partially blocked due to a buildup of plaque lining the arteries of their legs.
- Exercising muscle needs an increased supply of oxygen; when arteries bringing blood and oxygen to the muscle are narrow or blocked, the muscle is not able to receive sufficient oxygen.
- Similar risk factors that cause heart artery disease also are associated with claudication, including family history, cigarette smoking, high blood pressure, diabetes and high cholesterol levels.

Normal artery



Artery narrowed by atherosclerosis

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General Guidelines for Exercise

1. You don't have to exercise strenuously to become fit. All it takes is a moderate amount of activity. And remember that some days will feel easier than others; even the athletes would agree.

2. Always warm up and cool down with exercise:

   - A warm-up gradually increases your heart rate and body temperature, preparing the heart and muscles for activity. Skipping the warm-up could result in chest pain or muscle injury.

   - A cool-down allows blood to keep moving rather than becoming trapped in the muscles. Skipping the cool-down could result in dizziness, faintness, irregular heartbeats or nausea. Stretch the muscles during the cool-down phase to help improve flexibility and prevent muscle soreness.

3. Stop exercise if you feel:

   - Lightheadedness
   - Dizziness
   - Excessive shortness of breath
   - Chest pain

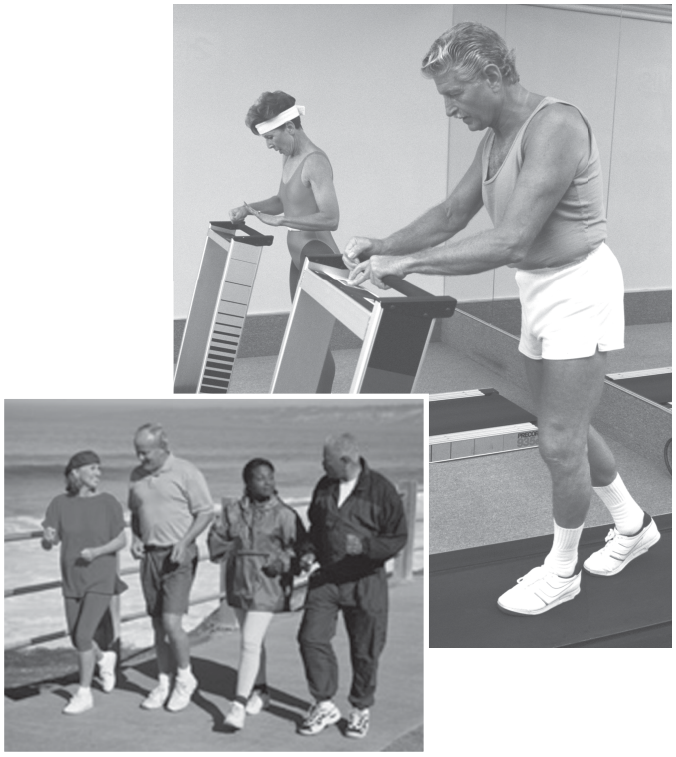
   Report these symptoms to your doctor.

4. Use common sense regarding weather:

   - On warm or humid days, reduce your pace and distance as needed and exercise during the cooler times of day. Drink plenty of fluids before, during and after exercise. Do not exercise outdoors if the temperature is above 80° F, especially if the humidity is above 75 percent.

   - If cold weather causes you discomfort, you may want to cover your mouth and nose with a scarf or exercise indoors. Avoid exercising outdoors if the temperature is below 20°F with or without the windchill factor.

   - Exercise indoors during ozone alerts or on days when the air quality is poor.



5. Dress comfortably and wear proper exercise shoes. In cool weather, wear layers of clothing you can put on or take off according to how you feel. In warm weather, avoid overdressing; body heat should be allowed to escape naturally.

6. Some medications will affect your body's response to exercise. Check with your doctor, nurse, or pharmacist if you have questions or concerns. Never stop or start taking any medications unless instructed to do so by your doctor.

7. Plan your day so that you are well rested prior to beginning your exercise.

8. Try to give yourself at least 30 minutes after a meal before engaging in strenuous activity. If you are diabetic, you need at least 1 hour.

9. Avoid saunas and hot whirlpools.

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Common Questions About Exercise

How hard should I exercise?

Each person responds differently to a given level of activity. The best way to find out exactly how much you should do is to consult your doctor or an exercise specialist before starting a program.

One way to measure how you are doing is to use a rating scale for how you feel (see the scale on page 4). In general, a good workout should be the level that you would rate "moderate" to "somewhat hard."

How often should I exercise?

Your own reasons for exercise can help determine how often you do it. For heart and lung fitness, you need at least 20 minutes of aerobic activity 4 to 6 times a week. If weight loss is a goal, try to work up to 60 minutes 4 to 5 times a week.

For most people, we recommend 30 minutes of exercise 4 to 6 times a week.

How can I stay motivated?

First, avoid the "terrible too's" – too much, too fast, too soon. Pushing yourself at the start may result in injury or disappointment. Here are a few more ideas:

- Be sure you enjoy the activities you choose. For example, don't ask yourself to use a bike that's uncomfortable.
- Try to vary your activities. Two walking sessions combined with two swimming or aerobic dance sessions each week may keep you from becoming bored with exercise.
- Exercise with a friend or group of friends. That way you can help keep each other on track.
- Keep a log of your progress. Set realistic goals and reward yourself, even in a small way, when you achieve them.

What if I stop?

Fitness levels regress quickly if exercise is stopped for two weeks or longer. Almost everyone will have times when exercise is interrupted – perhaps because of illness, career demands or loss of motivation.

If you stop exercise for two weeks or longer, start up again slowly. Reduce your time and pace, then increase one step at a time until you're back to your normal level.

Where can I get more information?

Call your health care provider or cardiopulmonary rehab department.

As a quick review, remember these key points:

- Concern yourself with time first, then pace. Work up to 30 minutes (or whatever your goal is) at a moderate pace. With any mode of exercise, you should always be able to carry on a comfortable conversation.
- A warm-up and cool-down should be part of every exercise session.
- Listen to your body for any signs or symptoms that should prompt you to slow down or stop exercising.
- Many people like to add stretching/toning exercises or weight training to their programs. These activities can be a great addition, but they should not take the place of aerobic exercise.

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Individual Exercise Program

	Warm-up	Exercise	Rest	Exercise	Rest	Exercise	Cool-down	Total
Week 1		____ mins.		____ mins.		____ mins.		_____ mins.
Week 2		____ mins.		____ mins.		____ mins.		_____ mins.
Week 3		____ mins.		____ mins.		____ mins.		_____ mins.
Week 4		____ mins.		____ mins.		____ mins.		_____ mins.

- This program is only a guide. Duration should be increased as tolerated.
- Walking should be done until claudication pain reaches a 3 (intense pain) on the pain scale.
- Rest should then be taken until pain resolves (1 to 4 minutes).
- The exercise-rest-exercise schedule is repeated several times so that a total of 35 minutes of ***total*** walking time is achieved, eventually working toward 50 minutes.

How do you know if you're progressing?
A good sign that progress is occurring is when you are able to walk a longer distance or a greater number of minutes before the onset of claudication pain.

Claudication pain scale

0	**No pain**
1	**Mild pain**
2	**Moderate pain**
3	**Intense pain**
4	**Maximal pain**

Signs/symptoms

- While moderate pain in the leg is expected and desirable, pain that occurs elsewhere in the body is an indication to stop.
- Stop if you have any of the following:
  - Lightheadedness
  - Shortness of breath
  - Chest pain/pressure/discomfort
  - Extreme fatigue

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When Shouldn't You Exercise?

First, listen to your body. If you don't feel well (for example, you have a cold or the flu), then don't exercise for a day or two until you feel better.

Second, do not try to exercise if you have any of the symptoms listed below. Report these symptoms to your doctor if you notice them with exercise, during normal activities or at rest.

Call your doctor right away if you have:

- Chest pain or discomfort you think may be angina or heart pain – *It may be a pain, pressure, heaviness, squeezing, tightness or burning in the chest, neck, jaw, throat, shoulders, arms or back. It may also feel like indigestion.*
- Fainting or blackout spells
- New onset of palpitations or an irregular heartbeat accompanied by dizziness, lightheadedness or chest pain

Call your doctor within 24 hours if you have:

- Unexpected shortness of breath or an increase in shortness of breath
- Awakening at night with shortness of breath
- Sudden swelling in ankles, feet or lower legs
- Lightheadedness or dizziness
- Prolonged fatigue or exhaustion unrelieved with rest

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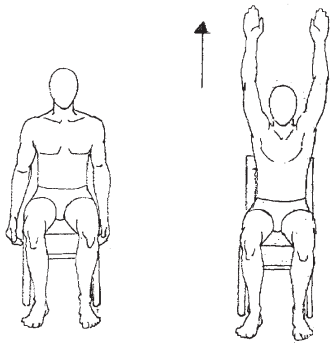
Homestretch Light Calisthenics

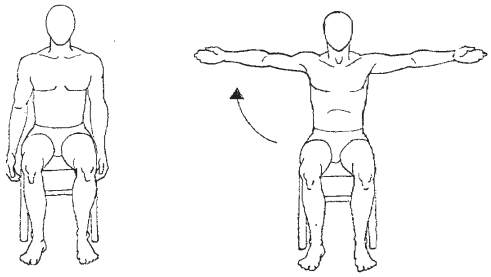
Calisthenic exercises are movements aimed at developing mobility and strength. Each calisthenic should be done slowly, with no jerking movement. Use the pursed lip breathing pattern throughout each exercise and avoid holding your breath (if you are not familiar with pursed lip breathing, ask your health care provider or exercise specialist). Don't try to force the body further than it will go easily.

Complete 5 to 10 repetitions each unless otherwise noted.
Exercises can be done standing or sitting.

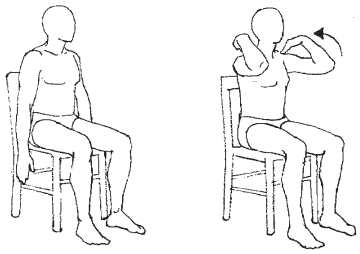
1. Arm raises
Raise both arms straight and up over head. Return to starting position.



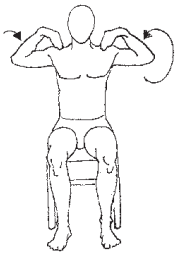
2. Arm raises to side
Raise both arms straight out in front of you and then extend arms to the side. Return to starting position.



3. Elbow flexion
Bring fingertips up to the shoulders by bending the elbows. Return to starting position.



4. Arm circles
Bring fingertips to shoulders. Rotate elbows in large circles forward and then backward. Return to starting position.



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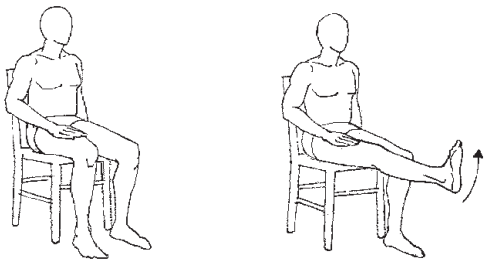
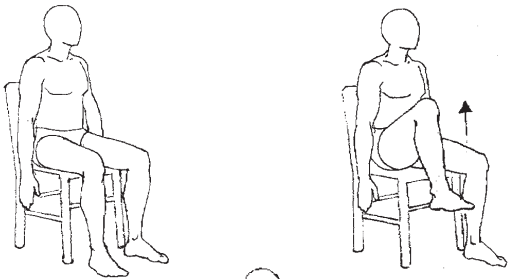
5. Knee extension

Extend right leg, with toes pointed toward the ceiling. Gently lift lower part of leg toward the ceiling 5 to 10 times. Return to starting position. Repeat with left leg.



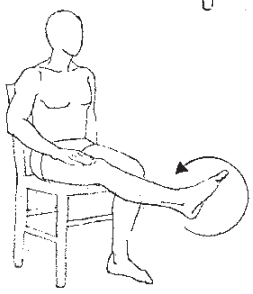
6. Knee lift

Raise knee up toward head to comfortable height. Return to starting position. Repeat with other knee.



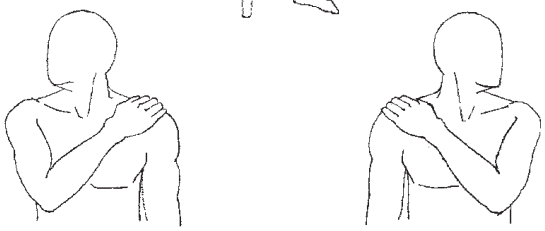
7. Ankle exercise

Raise leg off of floor. Point toe and then turn ankle in circles in each direction. Repeat with other leg.



8. Neck stretch

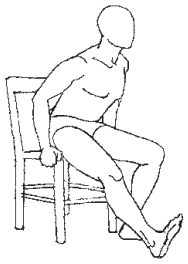
Place your left hand on the right upper shoulder. Turn head to the left. Hold this stretch for a count of 5. Then switch hand and head in opposite direction. Hold again for count of 5. Repeat each side.



9. Hamstring stretch

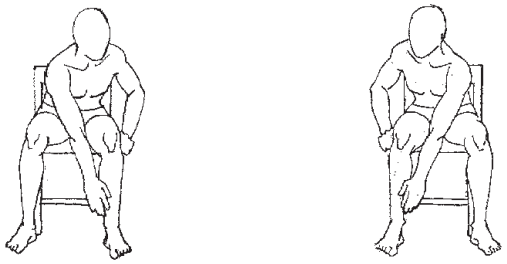
Sit out to edge of chair. Extend right leg with toes pointed up. Bend forward. Hold stretch for 10 seconds. Switch to left side and hold stretch for 10 seconds. Repeat each side.

You may hold on to chair for support.



10. Reaching exercise

Inhale through your nose. Blow out through pursed lips as you reach your right arm toward the opposite ankle. Repeat with left arm to opposite ankle. Perform 4 repetitions.



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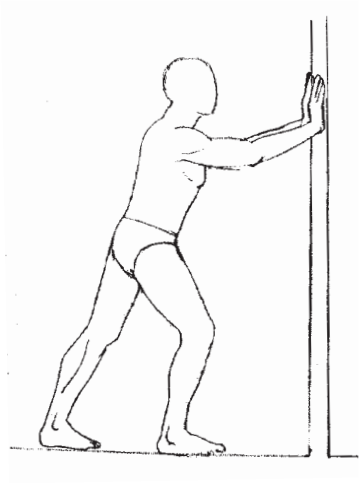
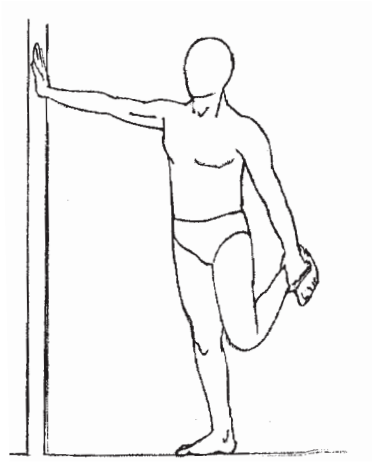
11. Calf stretch (*2 times each side)*
Point both feet forward, back heel stays down and bend front knee. Hold for count of 10, then switch legs.



12. Thigh stretch (*2 times each leg)*
Grab ankle or pants leg and lift heel to buttocks. Hold for count of 10, then switch legs.



13. Hamstring stretch (*2 times each side)*
Point "toes toward your nose" and bend at waist slightly to get best stretch. Hold onto a table or chair for support. Hold for a count of 10, then switch legs.