

Activity and Exercise for the Elderly

Karen Doy, M.S. Exercise Physiology, ACSM-certified Exercise Specialist

Is it safe for me to start an exercise program?

Consider discussing your decision with your physician before participating in a moderate or vigorous exercise program. Moderate exercise is the amount of activity that feels about the same as walking up a flight of stairs. Also, consult your physician before starting your program if you have:

- Shortness of breath and/or fatigue at rest or with moderate activity
- Loss of balance due to dizziness or loss of consciousness
- Swelling in the ankles (or if you are on medication to reduce swelling)
- Irregular heart beat (or if you are on medication for your heart)
- Discomfort in the back of your legs that increases with walking
- Discomfort in the chest, neck, jaw, arms or other areas that increases with activity
- A known heart murmur
- Bone or joint problems that could be made worse by a change in physical activity
- Any cardiovascular risk factors (smoke, high blood pressure, high cholesterol, diabetes, overweight)
- Concerns about the safety of an exercise or activity
- Any other reason that would require you to exercise with medical supervision (for example: recent heart attack, pulmonary disease, or severe arthritis)

The consultation with your physician will help you to optimize the results of your exercise program. Improvements in endurance and intensity may be seen at any age. Exercise has the potential to greatly increase the demands upon your cardiovascular system, muscles and joints, so be safe by checking first!

What other safety measures should I take?

Think about the type of exercise you plan to do. Then take a look at the area where you plan to do that activity. Consider:

- Are there throw rugs in the way?
- Are there lamp cords that need to be moved?
- Does a path need to be cleared?
- Do I have the proper footwear?
- Do I need a cane or walker for improved balance?
- Do I need a helmet or padding?
- Are my clothes comfortable and flexible enough for the activity?
- Would I be safer exercising with someone?

Senior exercisers are more susceptible to heat injury because the elderly have a decreased ability to regulate temperature and feel thirst. Medications can make this situation worse. Drink plenty of fluids. A good rule of thumb is to consume a cup of water every 20 minutes of activity starting ½-hour before exercise.

Avoid exercise if you are running a temperature or are otherwise ill.

Exercise should feel very light to somewhat hard. If the activity feels very hard, reduce the intensity.

Particularly when just getting started, keep the activity simple and comfortable. Then, as you gain confidence, add new activities to keep exercise enjoyable and free from monotony. Activity does not have to be difficult to produce results. You only need to be consistent in your efforts and strive to achieve steady, safe progress.

Why Should I Become More Active?

If you want to improve your health – ***think exercise!*** Physical activity promotes independence. In fact, exercise is essential in helping you to remain self-sufficient as you age. The most common reason for admission into a nursing home is the inability to get out of a chair by oneself. The American Heart Association states that every year, 12 percent of total deaths in the United States are attributed to a lack of regular physical exercise.

Some health benefits of exercise include:

- Enhanced weight control
- Better sleep
- The feeling of more energy
- Relief from depression
- Reduced stress
- Improved memory and concentration
- Better ability to fight off colds and other illnesses
- Arthritis relief
- Less risk of osteoporosis with weight-bearing activity
- Stronger muscles for better balance
- Better control over blood sugar, cholesterol and blood pressure, leading to a decreased risk of heart disease
- Less risk of colon cancer

Exercise improves the quality of life, making life more rewarding. Through exercise we are able to achieve efficiently-working muscles, allowing the joints to work more effectively with less pain and fatigue, even if the joint has some arthritis or wear and tear. This translates into being able to carry your grocery bag into the house and climb the stairs more easily.

More muscle means less weight gain, since muscle burns more calories than fat. Control of obesity decreases the work of the heart and improves blood sugar and cholesterol and blood pressure levels.

Think of the alternatives:

- Less muscle mass means less strength, slower movements, less coordination, poorer balance, less stamina, longer recovery time, more stiffness and soreness

- after exercise, altered posture, altered appearance and body proportions, the need for fewer calories and diet modification.
- Less flexibility means less stride length when walking.

How much exercise is enough?

Some activity is better than no activity. Ideally, in order to attain health benefits, aim for at least 30 minutes of moderate physical activity most, and preferably, all days of the week. A brisk walk is the most common way to achieve this result. However, there are many other ways of reaching the same goal.

Once you are comfortable with the level of activity needed to attain health benefits, work on achieving cardiovascular benefits. This requires more vigorous activity for at least 30 minutes, three days per week, along with a moderate level of physical activity most days of the week. Eventually, working your way toward high-level physical activity (>2,000 Calories weekly) improves your chance of a healthy life compared with individuals with lower physical activity levels.

Pattern your activities using suggestions from the activity pyramid, which can be found at this web link:

<http://www.healthyeatingclub.org/info/articles/phys-act/phys-pyramid.htm>

Most importantly, ***listen to your body.*** **If you are in pain – STOP!** Inform your physician if your activity results in chest pain, dizziness, shortness of breath, rapid heart rate or other symptoms that last longer than a few minutes after stopping.

How do I become more active?

Whatever your current level of activity is, you have the potential to improve. Start slowly and gradually build up your activity level. Going all-out is a sure way to burn out fast.

Determine your barriers:

- Have you set aside time for exercise?
- Are you embarrassed that you are not in very good physical condition?
- Do you need help to get started?

Determine your goals:

- Increased nerve and muscle function and loosened joints (flexibility)
- Increased heart and lung function (aerobic activity)
- Enhanced muscle strength (strength training)
- Improved health (aerobic, strength and flexibility training)
- Better balance to reduce falls (balance activities)

For the greatest success, incorporate your fitness goals into your lifestyle. What are your current activities? Do you like them? If you do, you might want to do more of these

activities. If not, you might want a smorgasbord of activities to choose from to reduce the monotony of a single activity. Consider:

- Joining a yoga, Tai Chi, or other flexibility class
- Walking or hiking
- Using equipment such as a stationary bicycle or stepper
- Joining an exercise class that caters to the elderly
- Using the weight machines at a local health club
- Purchasing an exercise video or book as a guide
- “Playing” with your grandchildren or neighbor kids

Never increase the frequency, timing or intensity of your workout by more than 10 percent each week.

Exercise at a level at which you can maintain a conversation (even if it is with yourself).

If you desire more detailed instruction or just need someone to help motivate you, consider joining a class, hiring a personal trainer, exercising with a friend, or joining a monitored exercise session, such as a cardiopulmonary rehabilitation maintenance program.

Think about what you are currently doing. Think about what you enjoy doing. Think about how you are going to progress week by week, month by month. Maybe you will increase the frequency or the intensity or add an activity, but don’t do all three at once!

How do I stay motivated to stay active?

Remember- your most recent activity is the one that you derive the most benefit from. What you did yesterday or today counts more than what you did last week!

Tips to keep you on target are:

- Exercise with a friend. You can socialize, encourage each other, and keep each other accountable to meeting your established goal(s).
- Chart your progress by keeping an exercise log.
- Schedule your workouts, as you would an important meeting.
- Keep activity a priority in your life. Strive toward 30 minutes of activity every day.
- Keep reminding yourself of your goal(s).
- Remember inactivity leads to stiffness, soreness, less flexibility.
- The activity you choose should be accessible, convenient and enjoyable.
- Most people stop an exercise program almost as soon as they get started because they work too intensely. Take the conservative approach by starting slowly and working your way toward more intense activity.

What are the essential elements of an exercise program?

The four building blocks of an exercise program are: *endurance, strength, flexibility* and *balance*. Each is important for total fitness. If you are just starting to become more

active, you will want to start with one of these elements and gradually add the others. Eventually, you will be able to include all of the elements over the course of a week on a regular basis. (*See table at the end of this chapter.*)

Where you start depends on your current level of ability. If you are able to walk, you might want to start by walking a few minutes several times a day. If slow, light walking is difficult for you, you may want to begin with some muscle-strengthening exercises, such as sitting down and getting up from every chair at your kitchen table.

Whatever activity you choose, incorporate a short warm-up period first. A warm-up involves moving the same muscles you will be using. An example would be to sit or stand while marching in place for a few minutes.

Complete your activity with a cool-down. A cool-down (the reverse of the warm-up) is when you gradually slow down the activity you were doing. This is important to keep your muscles, including your heart, working properly. You will have less of a tendency to feel dizzy or sore if you cool down slowly. Eventually, the end of a cool-down is a perfect place to add a few flexibility exercises.

As you become more proficient at exercise, you will increase the duration and decrease the frequency of activity. A good goal to work toward would be 30 minutes of fairly light to somewhat hard activity you enjoy doing most days of the week. Once you achieve this level, you might consider reaching a vigorous level of activity for 30 to 60 minutes, 3-5 days a week. Whatever you do, do not increase your time, distance, repetitions or weight by more than 10% per week.

Let's review! Eventually your exercise routine will look like this:

- Warm-up (Balance)
- Workout (Endurance and/or Strength and Balance)
 - Type: Activities that include the large muscle groups for at least 20 minutes (walking, swimming, etc.)
 - Strength-training machines, free weights, bands, etc.
 - Stability balls, etc.
- Cool-down (balance, flexibility stretches)

Why Should I Stretch?

If you have ever had a difficult time bending over to pick something up or reaching for that object just over your head, you might have benefited from being more flexible. Flexibility comes with stretching. Stretching several times a week leads to improved performance, balance and agility. It is this habitual stretching that will reduce your risk of injury with activity. Remember to:

- Stretch safely, as overzealousness can lead to injury. This means **no bouncing!**
- Stretch after physical activity when muscles are warm and ready to lengthen and less prone to an overstretching injury.
- Breathe slowly and deeply as you stretch.
- Hold the stretch for 10 to 30 seconds and repeat the stretch up to 3 times.

- Stretch all of the major muscle groups: the calf muscles, front and back thigh muscles (quadriceps and hamstrings), hip flexors, chest (pectoral) muscles, upper back muscles, neck, shoulder, wrists, ankles.

Other benefits of stretching include:

- Improved balance
- Better posture
- Enhanced pain relief
- Improved circulation

Common types of activities are Yoga, Pilates, ballet, Tai Chi, martial arts, swimming, and stability-ball exercises.

What is aerobic or endurance exercise?

Aerobic or **endurance exercise** is any activity that uses the large muscle groups of your body for long periods of time. That means continuous activity using the legs, trunk and/or arms for at least several minutes without stopping. Building the muscles used in the activity helps to make the **cardiorespiratory system** more efficient. Examples are:

- Walking
- Running
- Stair climbing
- Dancing
- Skating
- Aquatic exercise
- Stationary cycling
- Rowing

If your goal is to also lose weight, this is the type of activity you will want to do at a fairly light to hard level for up to sixty minutes most days of the week.

Why Strength-Train?

As we age, we can lose up to one percent of our strength per year after the age of 25. Why does this happen? Because we don't use those muscles! By including strength training in your fitness plan, you will help to develop your level of fitness and prevent injury regardless of your age. ***Muscles are trainable at any age, so it is never too late to start.*** Strength training improves muscular strength, endurance, and neuromuscular function, counteracting muscle weakness and physical frailty. A measurable difference may be seen in as few as eight weeks. Remember to:

- Strength-train a minimum of two days per week.
- Warm up the muscles first by walking, marching, etc.
- Work all of the major muscle groups (arms, legs, chest, shoulders, back and stomach)
- Never work the same muscles two days in a row.
- Include a variety of activities such as calisthenics (push-ups, sit-ups, chin-ups), barbells, weight machines, bands, Pilates and other classes.

- Incorporate daily activities such as gardening and housework.
- Breathe normally.
- Control movements. Avoid explosive movements.
- Perform the exercises in a range of motion that does not elicit pain or discomfort.

Weight machines are safer for the beginner because they “position” the body. Initially use light weights and build up gradually. The weight is too heavy if you can not repeat 8 exercises in a row with good form. The weight is too light if you can lift it more than 15 times in a row with good form. An easy number to remember to try to achieve is one set of 12 repetitions for each muscle group. You may rest and repeat a set if you want, but never do more than 3 sets. The greatest amount of conditioning is accomplished in the first set.

Where should I exercise?

Anywhere! Become more active by looking for ways to include activity into your daily routine:

- Park the car farther away than usual and walk.
- Walk instead of driving the car.
- Take the stairs instead of the elevator.
- Do a variety of household chores.
- Do stomach exercises at your desk or while watching TV.
- Stand while you talk on the phone.
- Play with your kids, grandkids, neighbor kids and friends.

For more structured activity, think about your personal preferences. Where are you most likely to stick with the program?

A fitness facility offers a variety of exercise, equipment, training advice, safe activity, and a social atmosphere. However, it may be intimidating, inconvenient and expensive. Look around for a facility that caters to your needs.

Your home is private and convenient, but you may be less safe if exercising alone.

Personal trainers may be contracted to help you with your exercise at home or in a club setting.

Contact your local hospital for a list of exercise classes that fit your need. Many offer classes for special populations (elderly, cardiac, pulmonary, diabetic, arthritic, cancer and others). These classes are safe, usually offer a variety of activities with specialized educational classes, have a built-in social network, and are inexpensive.

How can I tell if I am exercising too hard?

If you are not able to talk to someone while you are exercising, you are working too hard.

Remember to breathe while you exercise. People tend to hold their breath while they are exerting against a weight, such as lifting an object. Never hold your breath. Breathe out as you lift, push or exert.

Increase your activity level by no more than 10% each week. Significant pain should not be experienced unless the amount, duration or frequency of the exercise has changed significantly. Seek medical advice if the pain starts during exercise or continues for more than a few minutes after you stop the activity.

When you exercise for health benefits (to reduce the risk for disease), the activity should feel fairly light to somewhat hard. When you exercise for fitness benefits (to enhance cardiopulmonary status), the activity should feel fairly light to hard. Reduce activity if it feels very hard.

Each time you have a change in a medication, discuss with your physician the effect that medication might have on your heart rate. Your physician or health care provider will be able to tell you what your safe exercise heart rate range is. Be sure to have the provider help you verify that you or the machines you are using are indicating your exercise heart rate correctly.

How do I stay active when I travel?

You will need to work on your resolve during times when there is a change in your routine. One such time is when you travel. Don't worry! You will find many options available to you if you look for them:

- Explore the area by walking instead of driving. (Be sure to walk only in safe areas.)
- Use resistance bands. They don't take up much room in the suitcase and can be used anywhere.
- Use the hotel exercise equipment or pool.
- Do sit-ups, balance and flexibility activities in your room. These require no special equipment. You might want to pack an extra-large towel to sit on.

Does my medicine affect my ability to exercise?

Any time you are given a new prescription, ask your physician how it will affect your exercise response or routine. Medications may affect your heart rate, rhythm and blood pressure responses toward activity. You may have to time your activity around taking your medication.

Your health care provider should be able to show you how to alter your activity while continuing to receive benefits from the activity and the medication.

How should I alter my exercise routine for my medical condition?

Our bodies change physiologically as we age. Exercise routines may be compensated to take into account the cardiovascular, metabolic and orthopedic problems that may occur with advanced age.

Resting and exercise heart rates and blood pressures may be higher due to deconditioning or disease. Blood sugars may be less stable. Shortness of breath may be more evident. Work with your physician to optimize these. Exercise with your physician's approval at a lower intensity until these are stabilized. Remember-the desired exercise heart rate decreases with age, so exercise until you feel the activity is fairly light to somewhat hard. Slow down if the activity feels hard.

Reaction times are slower and recovery times are longer as we age, so start slowly and gradually increase the intensity as you feel comfortable.

Flexibility decreases with age, so warm up slowly and stretch at the end of your exercise session.

If you have not been active for a while, your percent body fat may be higher than desired. Start slow and gradually work toward expending 2000 calories per week through activity.

Bone mass decreases with advanced age, leading to osteoporosis. Concentrating on safe balance activities and using a cane or walker, if necessary, will reduce the risk of falling.

Strength may have to be increased before attempting aerobic, flexibility or balance activities. Begin building strength by sitting down in and getting up from every chair in your house.

Eliminate more intense strength-training exercises during active periods of pain or inflammation of arthritis.

Consider joining an aquatic exercise program. Water is very easy on the joints and is a safe way to increase muscle strength. Use slip-resistant water shoes to prevent the risk of falling.

Stationary cycling and sitting stepping machines are a great way to get a workout if it is difficult to walk.

You may accomplish more by initially attempting intermittent activity. For instance, if you have pain in your calves when you walk, walk for a few minutes, rest until the pain in your calves is gone, walk for a few minutes, rest, walk and rest. Continue this cycle until you have walked 30 minutes for the day.

What if I stop exercising for a while?

When returning from a layoff of more than three weeks, start at 50% or less of your previous time or intensity, and then gradually increase until you reach your previous level.

Remember: Any movement is better than no movement at all!

Good luck . . . and keep moving!

	Type	Duration	Frequency	Intensity	Progression	Comments	
Step 1	Any activity that uses the large muscle groups of your body. Examples are walking on land or in the water, stationary cycling, getting up from/sitting down in a chair.	5 minutes	6 times per day	Fairly light	Start slowly. Add one minute per day to the duration during 3 bouts.	Work at a rate that you can talk to others. Increase time, but not intensity. Include a warm-up and cool-down period.	
Step 2		10 minutes	3 times per day	Fairly light	Add one minute per day to the duration to 2 bouts.	Go back to the previous step or see a physician if problems occur.	
Step 3		15 minutes	twice per day	Fairly light	Add a minute per day to the duration to one bout.		
Step 4		20 minutes	Twice per day	Fairly light	Add two minutes per day to one bout		
Step 5	Use above mode. Add lower-level exercise which	30 minutes daily	One time per day.	Fairly light to somewhat hard			

Step 6	may include flexibility, strength, endurance or balance activities.	30 minutes plus other lower-level activity for a few minutes at another time of the day	One time per day on most days of the week.	Fairly light to somewhat hard	Gradually increase the time spent at the low activity from a few to 10 minutes.		
Step 7		30 minutes plus other lower-level activity	One or multiple times per day on most days of the week.	Fairly light to hard	Consider gradually increasing the time up to one hour a few days of the week.	It is not necessary to attempt to get to this step if you desire only health benefits from exercise.	
Step 8	Add strength training using machines, free weights, bands, etc.	One set of 12 repetitions of 8-10 exercises using the major muscle groups	Two to three non-consecutive days per week.	Start with light weights (no more than 50% of the maximum amount of weight you think you can lift). Fairly light to	May consider working up to 3 sets.	To avoid burn-out and injury, the total amount of time spent exercising at the fairly-light to somewhat-hard range should be no more than an hour daily.	

				somewhat hard			
Ultimate step	Try to incorporate a year- round program of strength training, aerobic, balance and flexibility exercises for 30 minutes to one hour most days of the week. Exercise at an intensity of fairly light to hard. Vary your routine. Warm up before exercising and cool down upon completion of the activity.						

