

Physical Activity and Optimal Health

There is a fountain of youth – an anti-aging miracle! Millions have discovered it - the secret to feeling better and living longer. It's called active living or a physically active lifestyle.

Being physically active and exercising regularly can improve mood and relieve depression, and prevent or delay bone loss, some types of cancer, heart disease, and diabetes. It can also reduce arthritis pain, anxiety and depression. It can help older people stay independent.

For all people, some activity is better than none! If you aren't limited by chronic health problems you should be as active as you can be. Avoid being inactive.

What kinds of exercise should you do?

There are four main types of exercise and all adults [particularly older adults] need some of each to gain health benefits:

- **Endurance** activities - like walking, swimming, or riding a bike - which build "staying power" and improve the health of the heart and circulatory system
- **Strengthening** exercises which build muscle tissue and reduce age-related muscle and bone loss
- **Stretching** exercises to keep the body limber and flexible
- **Balance** exercises to reduce the chances of a fall

Physical Activity, Falls and Skeletal Health

How do we define good bone health? One way to define good bone health is the absence of a bone fracture. And guess what – having weak bones, or low bone mass, *is not the biggest risk factor for fracture.* The greatest risk factor for fracture is a fall.



- 95% of hip fractures and over 50% of spine fractures are from a fall
- Falls are more dangerous if you have weak bones
- Learning how to prevent falls can help you avoid broken bones and the problems they can cause.

Why Do People Fall?

Some of the reasons people fall are:

- Tripping or slipping due to loss of footing or traction
- Slow reflexes, which make it hard to keep your balance or move out of the way of a hazard
- Balance problems
- Reduced muscle strength
- Poor vision
- Illness
- Taking medicines
- Drinking alcohol



How Can We Prevent Falling?

At any age, people can make changes to lower their risk of falling. The National Center for Injury Prevention and Control suggests doing the following four things to reduce fall risk:

1. Begin a regular exercise program

Exercises that improve coordination and balance are the most helpful for reducing your risk of falling. We'll learn several balance and strength activities today to help you get started. [See attached handouts]

2. Make your home safer

About half of all falls happen at home. But there are some simple things you can do to make your home safer.

Use the space below to make a list of all the things you can think to do to make your home safer.

✓ **Homework Assignment!** Use the Home Safety Checklist in your packet to help you find the places in your home that need a fall safety upgrade!

3. Have your health care provider review your medicines

Have your doctor or pharmacist look at ALL the medications you take. It is important to include medications that do not need a prescription like aspirin, Tylenol or cold medications. Some medications or combinations of medicines can make you light headed or dizzy which can lead to a fall.

OSU Extension has developed a series of trainings called Mastery of Aging Well.



This 5 part series has one section devoted to managing your medications. You can view it online at the following link:

<http://outreach.oregonstate.edu/programs/agingwell/modules/>

4. Have your vision checked

Make sure to have annual eye exams and to have your eyeglasses checked regularly. You may be wearing the wrong glasses or have a condition such as cataracts or glaucoma that limits your vision.

More information regarding about the four most important things you can do to avoid a fall were adapted from the **Centers for Disease Control Website:**

<http://www.cdc.gov/ncipc/duip/spotlite/falltips.htm#1>

Physical Activity and Fracture Risk

Being physically active is very important to bone health. Weight bearing physical activity can slow bone loss in older adults and can reduce the risk of falls. Physical activity strengthens muscles, improves coordination and balance, and increases flexibility. Remember that weak muscles, poor balance and poor coordination all increase your fall risk.

There are some very simple exercises you can do in your home that can improve strength and balance. However, before we learn how to do these activities, it is important to get a sense of your readiness to participate in falls risk prevention exercises.

Let's take a few minutes to rate your readiness to exercise. Please refer to the *Are You Ready to Exercise Questionnaire* in your packet. Readiness to exercise is a function of both physical and mental readiness (motivation). If you don't feel ready to exercise, your likelihood of participating in physical activity may be low compared to someone who feels ready.

Action Plan

Changing a specific behavior that will help to reduce your risk of falls takes planning and commitment. You are encouraged to document your intention to change a specific falls risk prevention behavior by completing the following form:

What are you going to do? (Example: “I will modify my home...;” “I will participate in balance activities...”)

I will... _____

How much of it will you do? (Example: “one room per week...;” “repeat every exercise once a day...”)

I will complete... _____

When are you going to do it? (Example: “beginning this week and every week until...;” “every other day, every week for the next...”)

I will do this... _____

Use the following weekly chart to record your action plan progress.
 Re-evaluate after 4 weeks.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Are You Physically Ready to Exercise?

The purpose of this quiz is to help you decide whether it's safe for you to start an exercise program, or to return to exercise after a health-related absence AND whether you are mentally ready or 'motivated' to exercise.

Section 1. Rate Your Health

Please answer these questions first:

1. Has your doctor or other health care professional told you **NOT** to exercise, or told you that you must restrict your activity? Yes No

2. Is **PAIN** preventing you from exercising? Yes No

3. If you answered **YES** to question 2, please circle the number that describes your pain on a scale of 0 (no pain) to 10 (severe pain):

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
No pain *Medium pain* *Severe pain*

4. If you answered **YES** to question 2, did you rate your pain at 5 or higher? Yes No

If you answered YES to ANY of the questions in Section 1, you may not be physically ready to start or return to an exercise program. Please discuss exercise with your doctor.

If you answered NO to ALL of the questions in Section 1, please go to Section 2.

Section 2. Rate Your Abilities

Can your body do the following activities?

5. Can you dress and bathe/shower without the help of another person? Yes No

6. Can you prepare or obtain your own meals? Yes No

7. Can you do your usual home chores? (cleaning, laundry, gardening) Yes No

8. Can you use the telephone? (look up numbers, dialing, and answering) Yes No

9. Can you do your own errands and shopping? Yes No

If you answered NO to AT LEAST THREE of the questions in Section 2 because of your **health, you may not be physically ready to start or return to an exercise program. Please discuss exercise with your doctor.**

If you answered YES to AT LEAST THREE of the questions in Section 2, please go to Section 3.

Section 3. Rate Your Strength and Walking Ability

Please answer these next questions:

10. Can you walk without the help of another person? (It's okay to use a walker or cane.) Yes
 No

11. Can you get up from a chair that doesn't have arms without the help of another person? (It's okay to use a walker or cane.) Yes No

12. Can you drive or arrange your own transportation when needed? Yes No

13. Can you leave your home for one hour or more for an activity other than a doctor's appointment? (This includes social activities like visiting friends, going to a movie or restaurant, or shopping.) Yes No

If you answered NO to ANY of the questions in Section 3, you may not be physically ready to start or return to a regular exercise program yet. Please talk with your doctor about what kinds of exercise you can do to get stronger safely.

If you answered YES to ALL of the questions in Section 3, it is safe for you start or return to regular exercise, at your own pace.

Sections 1-3 adapted from *Stay Independent and Active for Life*, developed by the Washington State Department of Health, Injury & Violence Prevention Program, 2006.

Are You Mentally Ready to Exercise?

For each of the following three questions, please check Yes or No. Please be sure to read the questions carefully and with the following definition in mind:

Reducing your risk of falls by incorporating balance and strength exercises into your daily life includes doing activities such as those recommended in this lesson, including seated and standing balance and strength exercises, and other activities, like brisk walking, on a daily basis.

Even people who are physically ready to exercise may not be mentally ready or motivated to exercise.

1. I am currently reducing my risk of falls by doing balance and strength exercises.

Yes No If YES, proceed to question #3.

1. I intend to reduce my risk of falls and do balance and strength exercises in the next 6 months. Yes No

*For falls risk prevention exercises to be effective, they must be done on a **regular** basis. **Regular** means that you are including balance, strength and endurance exercise on multiple days of the week. Refer to the Physical Activity Guideline for Adults for more detail.*

People who are mentally ready or motivated to exercise find it easier to fit regular exercise into their daily routine and life.

2. I am currently and have been regularly engaged in falls risk prevention exercises.

Yes No



Scoring Your Readiness to Reduce Your Risk of Falling and Fit Balance and Strength Exercises into Your Daily Life

- If question 1 and question 2 = NO, then you may not be motivated to start or return to a regular exercise program. You are in the **contemplation stage** of mental readiness.
- If question 1 = YES and question 3 = NO, then you are motivated and preparing to start or return to a regular exercise program. You are in the **preparation stage** of mental readiness.
- If question 1 = YES and question 3 = YES then you are motivated and participating in a regular exercise program. You are in the **action stage** of mental readiness.

What do mental readiness stages mean?

Contemplation – You may or may not have thought about trying to fit balance and strength exercises into your life, and have not taken any steps to make this happen. You may not be motivated to exercise.

Preparation – You have every intention of adding strength and balance exercises into your life and may have already tried or taken some steps in this direction. You are motivated to begin to fit exercise into your life.

Action – You have already made changes and have been fitting regular strength and balance activities into your life for at least 6 months. You show your motivation by making exercise a regular part of your life.

If you are unsure about your readiness for moderate exercise – begin by making an appointment with a physician to talk about what is appropriate for you. In the meantime, try the chair-based activities that are appropriate for everyone!

Balance Task #1: Seated Balance with Voluntary Arm Movements

- Beginning with arms at your side raise one arm up at your side as high as you can; hold for 3 slow counts, then lower arm back to starting position. Repeat with the opposite arm.
- With palms facing down, raise both arms up at your side to shoulder height and hold for three counts (inhale); turn palms forward and bring arms together in front until your palms touch (exhale); hold for three counts (inhale), then lower the arms to your lap

Balance Task #2 Standing Balance with Changing Base of Support

- Begin by standing with feet hip-width apart and flat on floor.
- Slowly bring feet together so your stance is narrower and hold this position for 10 seconds.
- Finally (make sure to have a sturdy table, chair or wall for support), bring one foot in front of the other (heel to toe) and try to maintain balance for up to 30 seconds.

Balance Task #3: Tandem Walk

- Stand close to the wall or table in case you need to check your balance; walk heel-to-toe in a straight line for at least 10 feet (about 20 steps); keep your eyes forward and do not look down at your feet.
- Increase the distance as your tandem walk improves.

Once you are able to do these balance exercises, you are ready to progress to the next level!

Strength Task # 1: Seated Leg raises (bent knee)

- Sit upright with hands in one of three starting positions: hands holding the chair, hands at sides, or hands crossed at chest. Keeping one foot firmly on the floor, raise the other foot up (keep your knees bent and you will feel this on the front of your upper leg); hold for 3 seconds and bring your foot slowly back to the floor. Repeat on the other side. Perform 5-10 raises on each leg.
- To increase the difficulty – perform the raise with an extended leg.
- For a strength and balance double challenge - perform the exercise with your eyes closed!

Strength Task # 2: Chair Stands

- Sit upright with hands in one of three starting positions: hands resting on chair arms, hands on thighs, or hands crossed at chest. With feet shoulder width apart, lean forward slightly and bring yourself slowly to a standing position.
- Use your arms (or an assistive device such as a cane) to assist you as needed. Your goal is to be able to raise yourself up without the use of your hands.
- Making sure to locate the seat behind you, slowly return to the seated position; repeat 5-10 times.
- If this is not challenging, see how many you can do with good form for 30 seconds or 1 minute.

Bone Strength Task # 3: Stomps

- Begin by standing with feet shoulder width apart. Stomp your feet 4 times (left, right, left, right) hard enough to pop bubble wrap.
- Repeat this sequence 5 times (20 stomps). If possible, perform 20 stomps each morning, noon and evening.
- This is a great exercise for balance, strength and bone health!

NOTE: If maintaining standing balance is a challenge, perform the stomps from a seated position until balance improves.

Use this Home Safety Checklist to identify areas in your home that need updating. You are on your way to reducing your risk for falls!

- Are the front steps and walkways leading to your house or apartment in good repair?
- Are stairs and walkways kept free of snow, ice or leaves?
- Does the surface of stairs and walkways provide good traction?
- Throw rugs and scatter mats are dangerous. Can you do without them?
- If you insist on having rugs, do they have non-skid backing to keep them from slipping?
- Are your traffic areas clear of telephone and electrical cords?
- Is your home, including stairwells, well lit?
- Are interior stairs in good condition, with a non-skid surface?
- Are there solid handrails on both sides of the stairway?
- Are stairs free of clutter?
- Do you have a rubber bath mat or a non-slip surface to make your bathtub or shower less slippery?
- If you have trouble getting on and off the toilet, do you have a raised toilet seat and a grab bar?
- In your kitchen, do you have a stable step stool (with a safety rail) for reaching high places?
- Do you frequently have to walk around furniture in your home?
- Do you have a phone near your bed?
- Do you have nightlights in your bedroom and bathroom?

Source: Adapted from *The Safe Living Guide*, Health Canada.

PHYSICAL ACTIVITY for LIFE – Older Adults

2008 Physical Activity Guidelines for Americans

How Much Physical Activity Should I Do?

For **all people**, some activity is better than none! If you aren't limited by chronic health problems¹ you should be as active as you can be. Avoid being inactive.

Older adults should:

- Do 2 hours and 30 minutes a week of moderate-intensity² aerobic activity,
OR
- 1 hour and 15 minutes (75 minutes) a week of vigorous-intensity³ aerobic activity
OR
- Combine equal amounts of moderate- and vigorous-intensity aerobic physical activity.
- Do aerobic⁴ activity at least 10 minutes at a time throughout the week.
- Do activities that strengthen arm, leg, chest, back, and shoulder muscles at least 2 days per week.
- Do exercises that maintain or improve balance if they are at risk for falling.

¹**People with chronic conditions** (such as diabetes, heart disease, or osteoarthritis) should talk to a health care provider about physical activity.

²**Moderate intensity activity:** breathing is harder and faster than normal, but you can still talk while you exercise.

³**Vigorous intensity activity:** breathing is hard enough that you cannot talk while you exercise.

⁴**Aerobic means** "with oxygen." Exercises like walking, running, biking, swimming and dancing.

Note: Certain medications affect your heart rate when you exercise so be sure to check with a health care provider first!

Health Benefits of Physical Activity for Older Adults

Lower risk of:

- Early death
- Heart disease
- Stroke
- Type 2 diabetes
- High blood pressure
- High cholesterol
- Metabolic syndrome
- Colon and breast cancers
- Lung and endometrial cancers
- Hip fracture

Added benefits:

- Less weight gain
- More weight loss (with diet)
- Better heart and muscle fitness
- Fewer falls
- Less depression
- Better cognitive function
- Better physical function
- Better bone density
- Better sleep quality

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Sources:

HHS, USDA (2005). *Dietary Guidelines for Americans*.
HHS (2008). *Physical Activity Guidelines for Americans*.