UofA UNIVERSITY OF ARKANSAS DIVISION OF AGRICULTURE

Family and Consumer Sciences

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Increasing Physical Activity as We Age

Balance

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Introduction

Balance is a state of bodily equilibrium. Whether or not you have good balance depends on your ability to maintain or regain your body's stability—whether standing still or in motion. It's that sense of coordination of body movement that gives us poise and steadiness. Good balance is dependent on many different factors, some of them inherited or biological factors while some are cultivated through lifestyle and activity level.

Poor balance can be attributed to weakened muscles due to lack of physical activity, but poor balance can also be due to medical complications, the side effects of certain medications or other balance disorders. For example, difficulty in balance caused by dizziness can be a result of (1) a disease in the vestibular (inner ear balance) system, (2) a side effect of drugs, (3) an interaction between multiple drugs, (4) problems with inadequate or poorly balanced diet, (5) trouble with blood pressure (high or low) and/or (6) hyperventilation associated with anxiety. Since good balance and body orientation depend on many factors, there are various opportunities to try to improve balance.

Why Is Balance Important?

From early childhood on, we use our ability to balance on a daily basis. From learning to walk, to walking on logs or beams while playing, to walking down the street, we want to have good balance. Why? Good balance helps us to not fall and helps us with stability. Falls are especially dangerous for older adults and others with osteoporosis. Reduce your risk of falls and fractures by improving your balance. We can also "train" our bodies for better balance, which is good news for everyone.

Balancing Systems

Good balance comes from several systems in our bodies. The visual system helps us to see and to adjust our position so that we can get around obstacles. The vestibular system includes our ears. Nerves in our inner ears help our brains figure out where our bodies are positioned. Proprioceptors, or receptors in the skin, joints, ligaments, tendons and muscles, get signals that tell our brains the position, orientation and movement of our bodies. Our brains create a map that changes as we move. For example, when you lift your left leg, the map changes and you maintain your balance by shifting your weight to your right leg. You need input from

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your senses, motor control and muscle power to maintain your balance during movements you plan (such as lifting your leg) and reflexive movements (such as when you stumble). Injury, illness, medications, advancing age and neurological disorders can affect all the systems involved in maintaining balance.

Some Common Balance Disorders

Many individuals experience balance problems as they get older. Lack of muscle strength, especially in the legs and ankles, contributes to poor balance. One of the main reasons for poor balance is disturbances of the inner ear. This leads to feelings of unsteadiness, floating, spinning and/or other sensations of movement even while being still. There are, however, many different types of balance disorders, some of which have underlying medical conditions.

Of the many different types of balance disorders, one of the most common is vertigo or benign paroxysmal positional vertigo (BPPV). This disorder gives people a brief, intense feeling of dizziness when they move their head. It may also be experienced when rolling over, getting out of bed or looking up. In severe cases, the individual may experience the symptoms while his/her body is stationary. Other symptoms include sensations of spinning or swaying and, in some cases, nausea and vomiting. BPPV is more common in adults ages 60 and older, but it can also occur in younger people.

Labyrinthitis is another type of balance disorder. This is an infection or inflammation in the inner ear that causes dizziness and loss of balance. It is named for the labyrinth, which is the organ in your inner ear that helps maintain balance.

Ménière's disease is another disorder that can affect adults of any age. It causes a person to experience vertigo, hearing loss that comes and goes, tinnitus (ringing or roaring in the ears) and a feeling of fullness in the ear. The cause of this balance disorder is unknown. Along with these, there are many other disorders that can contribute to poor balance.

Better Balance and Good Posture

Our balancing skills may erode over time, especially if we are not active. The saying "use it or lose it" applies to your balance also. The good news is that you can exercise your balance skills. Good balance starts with good posture, which can be practiced anytime, anywhere—even while brushing your teeth.

"Sit up straight! Don't slouch!" You probably heard those words many times growing up, and you may have said them to someone else. Good posture *is* important for your body. It is good prevention against many problems associated with poor posture. Check your posture by standing in front of a full-length mirror.

- Is your head held straight?
- Are your shoulders level?
- Are the spaces between your arms and sides equal?
- Are your hips level?
- Do your kneecaps face straight ahead?
- Are your ankles straight?

To check your posture from the side, have someone take a picture of you from the side and then note:

- Is your head held erect?
- Is your chin parallel to the floor?
- Are your shoulders in line with your ears?
- Is your chest held moderately elevated and the upper back erect?
- Is your tummy flat?
- Does your lower back appear to have a slight forward curve?
- Are your knees straight?

Practice good posture while sitting, standing and moving. Sit or stand up straight. Keep your head up and avoid leaning forward. Good posture contributes to good balance. For good balance, you also need strength and strong hip, knee and ankle muscles.

Balance Exercises

Balance exercises not only help prevent falls—a common problem in older adults—but also help with everyday activities such as getting dressed and recreational activities such as dancing. Some balance exercises build up your leg muscles, while other exercises focus on your stability. Strength training balance exercises should be performed two or more days a week, but not on any two days in a row, whereas the balance exercises for stability can be performed as often as you like, preferable daily. Part of the adult and senior adult exercise recommendations of 150 minutes a week can be accomplished through balance exercises when performed for at least 10 minutes.

Sample Exercises

Toe Stand

1. Stand up straight with your feet shoulder-width apart. You may stand behind a sturdy chair, holding on for balance. *See Figure 1: Toe Stand Starting Position.*
2. Slowly stand on tiptoes, as high as possible. Hold position for 1 to 5 seconds. *See Figure 2: Toe Stand.*
3. Slowly lower heels to the floor.
4. Repeat 10 times (also known as repetitions).
5. Rest approximately 30 seconds to 1 minute, then do two to three more sets.

Figure 1. Toe stand starting position.

Figure 2. Toe stand.

Forward Leg Lift

1. Stand with your feet shoulder-width apart, toes facing forward, knees slightly bent. You may stand beside a chair or wall holding on with one hand for support if needed. *See Figure 3: Forward Leg Lift Starting Position.*
2. Lift one leg slightly off the floor; 6 to 8 inches is a good goal. Hold for 1 to 5 seconds. *See Figure 4: Forward Leg Lift*.
3. Slowly lower your leg in a controlled movement.
4. Strive for 10 repetitions on one side, then switch to the other leg.
5. Exercise both legs two to three times.

Figure 3. Forward leg lift starting position.

Figure 4. Forward leg lift.

Side Leg Lift

1. Stand with your feet shoulder-width apart, toes facing forward, knees slightly bent. You may hold on to a sturdy chair for support if needed. *See Figure 5: Side Leg Lift: Starting Position.*
2. Slowly lift one leg out to the side, keeping your back straight and your toes facing forward. Hold for 1 to 5 seconds. *See Figure 6: Side Leg Lift.*
3. Slowly lower your leg.
4. Strive for 10 repetitions on one side, then switch to the other leg.
5. Exercise both legs two to three times.

Note: As you progress, you may want to add ankle weights to this exercise.

Figure 5. Side leg lift starting position.

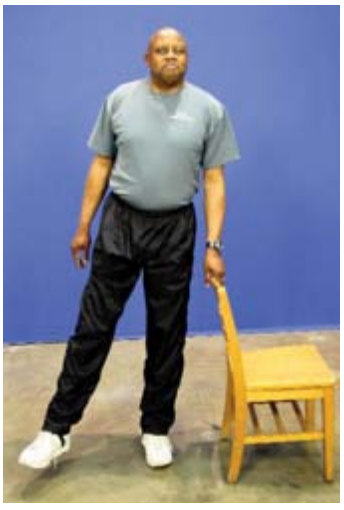

Figure 6. Side leg lift.

Forward Toe Touch/Arm Reach

1. Place your feet shoulder-width apart. Raise your hands to your shoulders with your palms facing forward. *See Figure 7: Forward Toe Touch/Arm Reach Starting Position.*
2. Extend your right arm and place your left foot forward, pointing down with your toes and touching the floor. *See Figure 8: Forward Toe Touch/Arm Reach.*
3. Return to the starting position.
4. Extend your left arm and place your right foot forward, pointing down with your toes and touching the floor.
5. Return to the starting position.
6. Do two to three sets of 10 repetitions.

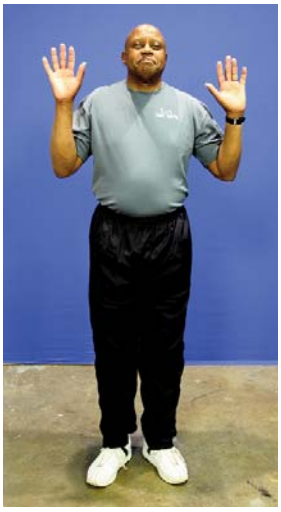

Figure 7. Forward toe touch/arm reach starting position.

Figure 8. Forward toe touch/arm reach.

One-Legged Stork

1. Stand with feet about shoulder-width apart and knees slightly bent. You can stand near a wall or sturdy chair if needed. *See Figure 9: One-Legged Stork Starting Position.*
2. Raise your left foot, turn your knee out to the side and place the bottom of your left foot against the side of your right shin. Raise your arms out to the side (or place one hand on the wall or chair for balance). Strive to hold this position for 30 seconds. *See Figure 10: One-Legged Stork.*
3. Lower arms and legs.
4. Repeat with the opposite leg.

Figure 9. One-legged stork starting position.

Figure 10. One-legged stork.

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