

Increasing Physical Activity as We Age

Strength Training With Medicine Balls

Jessica Vincent
Program Associate -
AgrAbility

LaVona Traywick, Ph.D.
Associate Professor -
Gerontology

Lisa Washburn, DrPH
Assistant Professor -
Health

Why should we strength train?

As we age, muscle strength declines. We can lose up to one-half of our strength and muscle mass between the ages of 25 and 80 years if we do not do something to prevent the loss. Regular strength training can help to prevent muscle loss, increase strength and increase muscle mass. In addition, strength training can also increase bone density; reduce the risk for chronic diseases, such as diabetes, heart disease, osteoporosis and arthritis; improve one's ability to sleep; and reduce the effects of depression. Although all ages can strength train, this information is specific to adults and senior adults.

Why strength train with medicine balls?

Strength training for health is, for the most part, very different than body building. Medicine balls are an effective strength training tool for building core strength. This includes your abdominal muscles and your lower back. Many exercises involve full body movements. Full body movements allow you to combine cardiovascular and strength training in



the same workout. Medicine ball exercises can involve twisting, turning and bending motions that may not get incorporated into traditional strength training exercises. By incorporating all of your major muscle groups along with the muscle stabilizers, medicine ball exercises can build functional strength. Functional strength refers to your ability to

Trunk Stability Versus Core Stability

The terms core and trunk are sometimes used interchangeably, but there is a difference between the two. The trunk involves four regions: the neck, thorax, abdomen and the pelvis. The trunk is important for maintaining good posture and spinal alignment. The core involves all areas of the trunk plus the back, hip flexors, hip extensors and gluteus muscles. A strong, stable core is essential for all activities – daily and sports related – that involve movement and/or balance.

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carry out daily tasks with reasonable effort, such as climbing stairs, yard work, house work, shopping, standing and sitting. In addition, building functional strength can also help to improve your overall well-being.

What are the benefits of medicine ball exercises?

- They can improve your flexibility and increase your range of motion.
- They are an easy way to add resistance training to your abdominal workouts.
- They are a creative way to change up your strength training routine.
- They can be used for sport-specific strength training exercises.
- They can help to improve your coordination.
- They are suitable for people of all ages, fitness levels and abilities.
- They can be done alone or with a partner
- Medicine balls come in various styles and sizes.

What medicine ball should you use?

This depends on your gender, age, current strength and fitness levels, and the type of exercise. Medicine balls range in size from 1 pound up to over 30 pounds. According to the American College of Sports Medicine, many people use a heavier ball than needed. As a rule of thumb, the medicine ball should be heavy enough to slow the motion but not so heavy that the control, accuracy or range of motion is compromised during the exercise. If you lose control by the end of your exercise routine, the ball is too heavy. The weight of the medicine ball should also correspond to 30 to 50 percent of the one-repetition maximum for a similar strength training exercise. A one-repetition maximum is the total weight with which you can perform only one repetition of a specific exercise. For example, if you can perform only one biceps curl with a

25-pound dumbbell, then you would use a medicine ball between 7 and 12 pounds to complete three sets of eight to twelve repetitions of the same exercise. Lower weights, such as 4 to 10 pounds, can be used for tossing exercises. Mid-weights, such as 8 to 15 pounds, can be used for abdominal exercises. Heavier weights can be used for lower body exercises.

While most medicine balls are round, they are also available in other shapes, such as footballs, for sports-specific training and with built-in handles for improving your grip. Additionally, they are available with single or double handles or with an attached rope. The type of medicine ball you should use depends on the type of exercise you will be doing.



For example, if you will be doing a throwing or catching exercise such as the chest pass, you may choose a round ball made out of either leather or nylon so it is more comfortable on the hands. Medicine balls are also made out of rubber, which is an ideal choice for an exercise that requires the medicine ball to bounce.

What are the general guidelines for medicine ball exercises?

- Always perform a warmup before starting your medicine ball routine.
- If you use a partner, make sure you have plenty of room and you and your partner are similar in height and fitness level.

- Choose a medicine ball that is appropriate in weight – not too light and not too heavy.
- Choose a medicine ball that is an appropriate size and shape for the exercise being performed.
- Complete one to three sets of eight to twelve repetitions for each exercise.
- Make sure you wear closed-toe athletic shoes.

What is a complete exercise program?

According to the National Institute on Aging and the U.S. Department of Health and Human Services, a complete exercise program includes four types of exercise: balance, endurance or aerobics, strength training or weight lifting, and stretching or flexibility. The key to overall fitness is to do all four types regularly and increase the intensity level over time.

- Balance exercises help to prevent falls, which are a common problem in older adults. Falling is a major cause of broken hips and other injuries that often lead to disability and loss of independence. Some balance exercises build up leg muscles, while other exercises focus on stability.
- Endurance exercises increase your breathing and heart rate. They improve the health of your heart, lungs and circulatory system. Increased endurance keeps you healthier and improves stamina for daily activities. Endurance exercises may also delay or even prevent many diseases associated with aging, such as heart disease and diabetes.
- Strength training exercises make you stronger by building muscle. This increased strength allows you to perform daily activities on your own. Strength training also plays a key role in keeping obesity and diabetes at bay by increasing your metabolism, which helps you

maintain a healthy weight and normal blood sugar levels. Additionally, studies suggest strength training may help prevent the progression of osteoporosis.

- Stretching exercises keep your body flexible by stretching the muscles and tissues that hold your bones together. These exercises help give you more freedom of movement to do everyday activities such as reaching and looking over your shoulder. Specific stretches are recommended to prevent injuries, but others are recommended to recover from injuries. Flexibility may also play a part in the prevention of falls.

For more information on the four types of exercise, visit Fit in 10 at www.uaex.edu.

Safety Precautions

- Always check with your doctor before starting any exercise routine or program.
- Make sure you choose the correct amount of weight for the exercise being performed. The correct amount of weight helps prevent:
 - Loss of control of the medicine ball.
 - Limited range of motion.
 - Compromised accuracy.
- Always wear closed-toe athletic shoes.



Sample Exercise Routine

Warm Up:

Hip Circle

1. Stand with your feet shoulder-width apart and knees slightly bent. See Figure 1: Hip Circle Starting Position.
2. Hold the medicine ball in one hand and pass it around your body, switching hands behind your back. See Figure 2: Hip Circle.



Figure 1. Hip Circle Starting Position



Figure 2. Hip Circle

Ski Bends

1. Stand with your feet a little wider than shoulder-width apart.
2. Hold the medicine ball at your waist.
3. Bend slightly at the waist and slowly lean to one side and then to the other. See Figure 3.
4. In the direction you are leaning, bend that knee and move the medicine ball toward the hip on the same side. See Figure 4.



Figure 3. Ski Bends



Figure 4. Ski Bends

Total Body Stretch

1. Stand with your feet shoulder-width apart and knees slightly bent.
2. Hold the medicine ball down in front of you with your arms straight. See Figure 5.
3. Slowly lift your arms by raising the ball over your head and slightly arch your back. See Figure 6.
4. Slowly lower your arms and the ball to the starting position. See Figure 5.



Figure 5. Total Body Stretch Starting Position



Figure 6. Total Body Stretch

Overhead Lateral Flexion

1. Stand with your feet shoulder-width apart and knees slightly bent.
2. Hold the medicine ball over your head and slowly lean to one side by bending at the waist. See Figure 7.
3. Return the ball to the center and repeat on the other side. See Figure 8.



Figure 7. Overhead Lateral Flexion

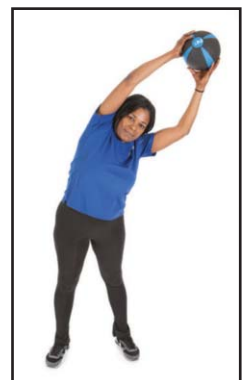


Figure 8. Overhead Lateral Flexion

Upper Body:

Overhead Press

1. Stand with your feet shoulder-width apart and knees slightly bent.
2. Hold the medicine ball at chest level. See Figure 9.
3. Press the ball and your arms overhead. See Figure 10.
4. Slowly lower the ball and your arms to the starting position. See Figure 9.



Figure 9. Overhead Press Starting Position



Figure 10. Overhead Press

Front Raise

1. Stand with your feet shoulder-width apart and knees slightly bent.
2. Hold the medicine ball down in front of you with your arms slightly bent. See Figure 11.
3. Raise the ball to chest level. See Figure 12.
4. Slowly lower the ball and your arms to the starting position. See Figure 11.

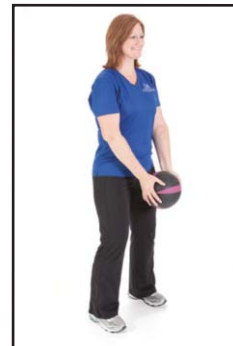


Figure 11. Front Raise Starting Position



Figure 12. Front Raise

Triceps Extension

1. Stand with your feet shoulder-width apart and knees slightly bent.
2. Hold the medicine ball over your head. See Figure 13.
3. Lower the medicine ball behind your head while keeping your elbows pointed forward. See Figure 14.
4. Slowly return the ball to the starting position. See Figure 13.



Figure 13. Triceps Extension Starting Position



Figure 14. Triceps Extension

Biceps Curl

1. Stand with your feet shoulder-width apart and knees slightly bent.
2. Hold the medicine ball down in front of you with your arms straight. See Figure 15.
3. Bend your arms upward, curling the ball toward your chest while keeping your arms close to your side. See Figure 16.
4. Slowly return the ball and your arms to the starting position. See Figure 15.



Figure 15. Biceps Curl Starting Position



Figure 16. Biceps Curl

Core:

Back to Back Pass

To do this exercise with a partner:

1. Stand back to back with your partner with one person holding the medicine ball at waist level. See Figure 17.
2. Twist your upper body at the waist to either the left or the right and pass the ball to your partner. See Figure 18.
3. Twist in the opposite direction and receive the pass from your partner.

This completes a circle and one repetition.

To do this exercise without a partner:

1. Stand with your feet shoulder-width apart and knees slightly bent.
2. Hold the medicine ball at waist level but away from your body.
3. Twist your upper body at the waist to one side.
4. Twist back to center and repeat on the other side.

The object of this exercise is to work your abdominal muscles. For the exercise to be effective, keep your hips pointed forward and only twist at the waist.

Abdominal Crunch

1. Lie with your back on the floor, your knees bent and your feet flat on the floor.
2. Hold the medicine ball slightly away from your chest. See Figure 19.
3. Contract your abdominal muscles to lift your head and shoulders off the ground. See Figure 20.
4. Lower to the starting position. See Figure 19.

To avoid injury when performing the abdominal crunch, lift within a comfortable range of motion and avoid pulling on the head and neck.

Chest:

Chest Pass

To do this exercise with a partner:

1. Stand facing each other at least three feet away with one person holding the medicine ball at chest level.
2. Step forward with one leg and throw the ball toward your partner, using both arms and pushing the ball outwards from your chest. See Figure 21.
3. Make sure to throw the ball so it is catchable by your partner.
4. Return the ball to starting position before repeating.

To do this exercise without a partner:

1. Stand in front of a wall approximately three feet away holding the medicine ball at chest level.
2. Step forward with one leg and throw the ball against the wall by pushing the ball outwards from your chest.
3. Catch the ball as it bounces back to you.
4. Return the ball to starting position before repeating.



Figure 17. Back to Back Pass Starting Position



Figure 18. Back to Back Pass



Figure 19. Abdominal Crunch Starting Position



Figure 20. Abdominal Crunch



Figure 21. Chest Pass

Whole Body:

Diagonal Chop

1. Stand with your feet shoulder-width apart.
2. Hold the medicine ball up over your head and to one side keeping your body in an upright position. See Figure 22.
3. Make a chopping motion by moving the ball diagonally across your body from the starting position down toward the opposite knee. See Figure 23.
4. While moving the ball diagonally, lower your body into a squatted position. See Figure 23.
5. Stand upright and return the ball to the starting position. Repeat on the other side. See Figure 22.

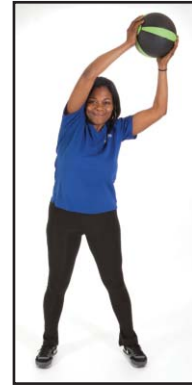


Figure 22.
Diagonal Chop
Starting
Position

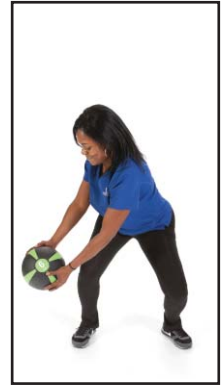


Figure 23.
Diagonal Chop

Lower Body:

Squat

1. Stand with your feet shoulder-width apart.
2. Hold the medicine ball down in front of you with your elbows slightly bent. See Figure 24.
3. While pushing your buttocks back and keeping your chest upright, slowly bend at the knees and raise your arms to chest level. See Figure 25.
4. Slowly stand upright and return the ball and your arms to the starting position. See Figure 24.

For this exercise, be sure to keep your weight on your heels and do not allow your knees to go past your toes.



Figure 24.
Squat Starting
Position



Figure 25.
Squat

Walking Lunge

1. Start with both feet together. Hold the medicine ball at your waist. See Figure 26.
2. Take a large step forward with one foot while keeping the other foot in the starting location.
3. Lower your body toward the floor by bending the front knee toward a 90 degree angle and slightly bending the back knee. See Figure 27.
4. Twist your torso by moving the medicine ball from your waist toward the hip of the leg you stepped forward with. See Figure 28.
5. Stand upright, bring your feet together and return the ball to the starting position. Repeat on the other side. See Figure 26.



Figure 26.
Walking Lunge
Starting
Position



Figure 27.
Walking Lunge



Figure 28.
Walking Lunge

Cool Down:

Warrior Pose

1. Stand with your feet wider than shoulder-width apart.
2. Hold the medicine ball down in front of you with your arms straight. See Figure 29.
3. Turn your right foot outward 90 degrees while keeping the left foot stationary.
4. Lunge and bend the right knee toward a 90 degree angle while keeping the left leg straight. See Figure 30.

Raise the ball to chest level. This is level one.

Level two: Hold the lunge position and press the ball and your arms upward and overhead. See Figure 31.

Level three: From the level two position, move the ball laterally to the right by bending slightly at your waist. See Figure 32.

Stand upright and return the ball and your arms to the starting position. Repeat on the other side. See Figure 29.



Figure 29. Warrior Pose Starting Position



Figure 30. Warrior Pose Level One



Figure 31. Warrior Pose Level Two



Figure 32. Warrior Pose Level Three

References

Borghuis, J., Hof, A.L., and Lemmink, K.A. (2008). The importance of sensory-motor control in providing core stability. *Sports Med*, 38 (11), 893-916.

Exercise and Physical Activity. (2009). National Institute on Aging, National Institute of Health, Publication No. 09-4258.

Kraemer, W. (2011). Selecting and effectively using a medicine ball. American College of Sports Medicine (ACSM). www.acsm.org.

Traywick, L. (2009). Increasing physical activity as we age: Exercise recommendations. University of Arkansas Division of Agriculture Cooperative Extension Service, Publication No. FSFCS30.

2008 Physical Activity Guidelines for Americans: Be Active, Healthy and Happy. (2008). Washington, DC: U.S. Department of Health and Human Services; Government Printing Office. ODPHP Publication No. U0036.

Printed by University of Arkansas Cooperative Extension Service Printing Services.

JESSICA VINCENT, program associate - AgrAbility, LaVONA TRAYWICK, associate professor - gerontology, and LISA WASHBURN, assistant professor - health, are with the University of Arkansas Division of Agriculture in Little Rock.

FSFCS37-PD-6-12N

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