

Strength and Balance Exercises

Modified guide from the
National Institute on Aging

About Strength Exercises

Special points of interest:

- Strengthening exercises
- Balance exercises
- Exercising safely
- Exercise progression
- Examples of strength and balance exercises

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Even very small changes in muscle size can make a big difference in strength. This is especially true in people who already have lost a lot of muscle. Increased strength improves your ability to do things such as getting up from a chair or climbing stairs.

Your muscles are active even when you are sleeping. Their cells are still doing routine activities they need to do to stay alive. This work is called metabolism, and it uses up calories. That can help keep your weight in check, even when you are asleep!

To do most of the following strength exercises, you need to lift or push weights. You will need to keep gradually increasing the amount of weight you use. You can use hand/ankle weights sold in sporting goods stores. You can also use things such as empty



milk jugs filled with sand or water, or socks filled with beans and tied shut at the ends.

There are many alternatives to the exercises shown here. For example, you can buy a resistance band at a sporting goods store for under \$10 to do other types of strength exercises. It looks like a giant rubber band. Or you can use special strength training equipment at a fitness center.

Do strength exercises for all your major muscle groups at least 2-3 times a week. Don't do strength exercises of the same muscle group on any 2 days in a row.

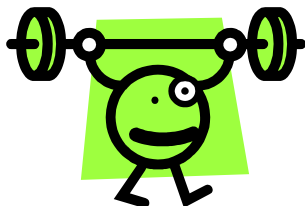
Depending on your condition, you might need to start out using as little as 1 or 2 pounds of weight, or no weight at all. The tissues that bind the structures of your body together need to adapt to strength exercises. Use a minimum of weight the first week. Then, gradually build up the weight. Starting out with weights that are too heavy can cause injuries.

At the same time, remember that you have to gradually add a challenging amount of weight in order to benefit from strength exercises. If you don't challenge your muscles, you won't benefit from strength exercises. The "Progressing" section below will tell you how.

When doing a strength exercise, do 8 to 15 repetitions in a row. Wait a minute, then do another set of 8 to 15 repetitions in a row.

Strength and Balance Exercises

About Strength Exercises



Here is a tip- While you are waiting between sets you might want to perform a different strength exercise that uses a different set of muscles.

Take 3 seconds to lift or push a weight into place. Hold the position for 1 second, and then take another 3 seconds to lower the weight. Don't left the weight

drop. Lowering it slowly is very important.

It should feel somewhere between hard and very hard for you to perform the exercises. If you cannot perform 8 repetitions in a row, then the weight is too heavy for you. Reduce the amount of weight. If you can lift a weight more than 15 times in a row, it's too

light for you. Increase the amount of weight.

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About Balance Exercises

Each year, U.S. hospitals have over 300,000 admissions for broken hips. Falling is often the cause of these fractures. Balance exercises can help you stay independent by avoiding the disabling (and often permanent) results from a fall.

As you review the exercises listed, you will notice that there is a lot of overlap between strength and balance. Very often one exercise serves both purposes. Any of the lower body exercises for strength are also balance exercises.

To improve your balance even more, add the following modifications- Note that these exercises instruct you to hold onto a table or chair for balance. Try holding onto a table with only one hand. As you improve, try holding on with one fingertip. Next, try these exercises without holding on at all. If you are very steady on your feet, move on to doing the exercises without using your hands and with your eyes closed. Have somebody stand close by you if you are unsteady.

If you exercise regularly, do not do more than your normal amount of strengthening exercises. Simply incorporate these balance modifications into your normal routine. Perform the suggested exercises 2-3 times a week if you do not have a regular exercise routine. Do not perform the exercises everyday. Performing a strengthening exercise program too often can do more harm than good.



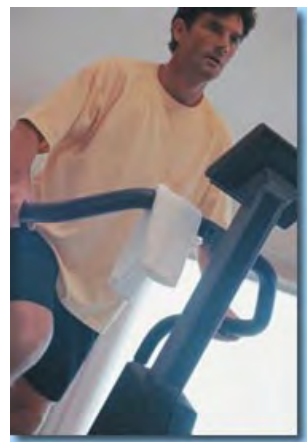
Progressing Exercises

Gradually increasing the amount of weight you use is crucial for building strength.

When you are able to lift a weight between 8 to 15 times, you can increase the amount of weight you use at your next session.

Here is an example: Start out with a weight that you can lift only 8 times. Keep using that weight until you are able to lift it 12 to 15 times. Add more weight so that, again, you can lift it only 8 times. Use this weight until you can lift it 12 to 15 times.

Then add more weight. Keep repeating.



Safety

Do not hold your breath during exercises. Breathe normally. Your breathing can cause changes in your blood pressure. This is especially important for people with known cardiovascular disease. Breathe out as you lift or push. Breathe in as you relax between repetitions. This may not feel natural at first. You will probably have to think about it as you are doing it.

If you have had a hip replacement, check with your surgeon

before performing lower body exercises. Normally, you have movement precautions after a hip replacement. These precautions include not crossing your legs or bending your hip more than 90 degrees.

When performing exercises, do not jerk or thrust the weights into position. Use smooth, steady movements to avoid injury.

Avoid “locking” the joints in your arms or

legs into a straightened positions.

Muscle soreness lasting up to a few days and slight fatigue are normal after strengthening exercises. But exhaustion, sore joints, and unpleasant muscle pulling are not normal. This could be a symptom that you are overdoing it.

Exercises should never cause pain! The range within which you move your arms and legs should never hurt.

Exercises should never cause pain!



Physical Therapy

You may benefit from seeing a Physical Therapist if you have an extensive medical history or experience pain from your home exercises. A Physical Therapist can review

your medical history and evaluate your physical condition. Based on these findings your therapist can give you an exercise program

catered to your unique needs.

Contact your doctor to see if Physical Therapy is appropriate for you.

Arm Raises

Purpose: Strengthens shoulder muscles

Directions: Sit in a chair. Keep feet flat on the floor and feet even with shoulders. Rest your arms by your side with palms facing inward. Raise both arms at the same time to shoulder height. Hold position for 3 seconds. Slowly lower arms. Repeat 8-15 times. Rest and repeat 8-15 more times.



Chair Stand

Purpose: Strengthens abdominals and thighs

Directions: Place pillows against back of chair. Sit in the middle or front of chair with your knees bent and feet flat on the floor. Lean back in a half-reclining position. Keep back and shoulders straight. Raise upper body forward until sitting upright, using hands as little as possible. Take 3 seconds to slowly stand up, using hands as little as possible. Slowly sit back down. Repeat 8-15 times. Rest. Then repeat 8-15 more times.



Biceps Curl

Purpose: Strengthens upper arm muscles

Directions: Sit in an armless chair with your back supported. Keep your feet flat on the floor and even with shoulders. Hold hand weights at sides with arms straight and palms in. Slowly bend one elbow, lifting weight toward your chest (Rotate palm to face shoulder while lifting weight). Hold position for 1 second. Slowly lower arm. Perform with other arm. Repeat 8-15 times each arm. Rest. Then repeat 8-15 more times.



Heel Raises

Purpose: Strengthens ankle and calf muscles;
Improves balance

Directions: Use ankle weights if you are ready. Stand straight with feet flat on the floor. Hold onto a chair or table for safety if needed. Rise up on your tiptoes as high as you can and hold 1 second. Take 3 seconds to slowly lower yourself back down. Try performing this exercise with one leg only as you get stronger. For a greater balance challenge, perform with only one hand, then one fingertip, then no hands. Repeat 8-15 times each arm. Rest. Then repeat 8-15 more times.



Triceps Extension

Purpose: Strengthens muscles in the back upper arm

Directions: Sit in an armless chair near front edge. Keep your feet flat on the floor and even with shoulders. Raise one arm straight toward ceiling. Support this arm below the elbow with the other hand. Bend raised arm at elbow, bringing weight toward same shoulder. Slowly re-straighten arm toward ceiling. Hold position for 1 second. Slowly bend arm toward shoulder again. Repeat 8-15 times each arm. Rest. Then repeat 8-15 more times. Repeat with other arm.

If your shoulders aren't flexible enough to do this exercise, see alternative "Dip" exercise below



Alternative "Dip" Exercise

Purpose: Strengthens muscles in the back upper arm

Directions: Use ankle weights if you are ready. Stand straight with feet flat on the floor. Hold onto a chair or table for safety if needed. Rise up on your tiptoes as high as you can and hold 1 second. Take 3 seconds to slowly lower yourself back down. Try performing this exercise with one leg only as you get stronger. For a greater balance challenge, perform with only one hand, then one fingertip, then no hands. Repeat 8-15 times each arm. Rest. Then repeat 8-15 more times.



Knee Flexion

Purpose: Strengthens muscles in back of thigh

Directions: Use ankle weights if you are ready. Stand straight, holding for balance. Take 3 seconds to bend your left knee so that your calf comes as far up toward the back of your thigh as possible. Don't move your upper leg at all. Take 3 seconds to lower your leg. Repeat on the other side. Alternate legs until you have performed 8-15 times each leg. Rest. Then repeat 8-15 more times.



Hip Flexion

Purpose: Strengthens thigh and hip muscles

Directions: Use ankle weights if you are ready. Stand straight. Hold onto a table or chair for balance. Take 3 seconds to bring your knee toward your chest. Stand straight throughout without bending at the waist or hip. Hold for 1 second. Take 3 seconds to lower your leg. Repeat with right leg. Alternate until you have performed 8-15 repetitions each leg. Rest. Then repeat 8-15 more times.

Shoulder Flexion

Purpose: Strengthens shoulder muscles

Directions: Sit in chair with feet flat on the floor and even with shoulders. Arms straight down at sides with palms inward. Take 3 seconds to raise both arms in front of you (keep them straight and rotate so palms face downward) to shoulder height. Stop when at shoulder height. Hold position for 1 second. Then take 3 seconds to slowly lower down. Repeat 8-15 times each arm. Rest. Then repeat 8-15 more times.



Knee Extension

Purpose: Strengthens front of thigh

Directions: Use ankle weights if you are ready. Sit in chair. Place a rolled towel under your knees if your feet are flat on the floor in this position. Take 3 seconds to extend your right leg. With your leg in a straightened position, flex your foot so that your toes are pointing toward your head. Hold for 1-2 seconds. Lower your right leg taking 3 seconds to do so. Repeat with the left leg. Alternate legs until you have done 8-15 repetitions each leg. Rest. Then repeat 8-15 more times each leg.



Walk Heel-to-Toe

Purpose: Improve balance

Directions: Position your heel just in front of the toes of the opposite foot each time you take a step. Your heel and toes should touch or almost touch. You can perform this exercise as often as you like. Perform near something sturdy to hold onto should you become unsteady.



Single Leg Balance

Purpose: Improve balance

Directions: Stand on one leg holding up to 10 seconds. Lower leg down. Alternate legs. Perform near something sturdy in order to hold onto should you become unsteady. You can perform this exercise as often as you like.



Sit-to-Stand

Purpose: Improve balance

Directions: Sit in a chair with feet flat on the floor. Slowly stand up without using hands to help you, as able. Return to a seated position. You can perform this exercise as often as you like.



Hip Extension

Purpose: Strengthens buttock and lower back muscles

Directions: Use ankle weights if you are ready. Bend forward from the hips at a 45-degree angle, holding onto a table or chair for support. Take 3 seconds to slowly lift the left leg backwards. Hold position for 1 second. Take 3 seconds to slowly lower back down. Repeat with the right leg. Alternate legs until you have performed 8-15 repetitions each leg. Rest. Perform another set of 8-15 repetitions.



Side Leg Raises

Purpose: Strengthens sides of hips and thighs

Directions: Use ankle weights if you are ready to. Stand straight, directly behind a table or chair. Hold onto the table or chair for balance. Have feet slightly apart. Take 3 seconds to lift your right leg 6-12 inches out to the side. Don't point your toe outward. Keep back and both knees straight throughout the exercise. Hold the position for 1 second. Take 3 seconds to lower your leg back down. Alternate legs. Perform 8-15 repetitions. Rest. Repeat another set of 8-15 repetitions.