

Get Pumped: Seated Strength Training Basics

LaVona Traywick, Ph.D.
Associate Professor -
Gerontology

Lisa Washburn, DrPH
Assistant Professor -
Health

Jessica Vincent
County Extension
Agent - Family and
Consumer Sciences

Lauren Copeland
Program Technician -
Health

Introduction

Regular strength training offers many health benefits. Strength training, also referred to as resistance training or weight lifting, helps build muscle, increases bone density and reduces fall risk. As with other forms of exercise, strength training helps reduce chronic disease risk, relieves arthritis symptoms and improves energy level and sense of well-being. See Table 1. Those new to strength training may not know how to get started. They may be intimidated by the machines in fitness centers and may not be strong enough to perform the advanced moves seen on exercise videos. Learning the basics of strength training, as described here, can increase confidence to add strength training to your fitness routine.

Table 1
Benefits of Strength Training

- Increases lean body mass
- Increases resting metabolic rate
- Improves body composition
- Increases bone mineral density
- Reduces the risk of osteoporosis
- Maintains functional capacity
- Improves nerve-muscle coordination
- Improves balance
- Reduces risk of several chronic diseases
- Reduces incidence of low back pain
- Enhances athletic performance



Before starting any new fitness routine, including strength training, check with your doctor to be sure you do not have any restrictions.

Learning the language of strength training and some simple guidelines can be helpful in developing a personal fitness plan, whether you are new to strength training or looking to expand current strengthening activities.

Common Strength Training Terms and Explanations

Learning commonly used terms and definitions makes understanding strength training instructions much easier. The following list includes some basic strength training terms.

Exercise: Planned, structured and repetitive movement performed by the large muscles of the body for an extended period of time to improve or maintain one or more components of physical fitness. There are four main types or categories of exercise – strength, balance, aerobic/cardiovascular and flexibility. In strength training, *exercise* may be used to refer to a particular movement. For example, an instructor might say, “The next *exercise* will be the biceps curl.”

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Lifting: This term is short for weight lifting, which is also referred to as strength training, resistance training or pumping iron.

Workout: This refers to a period of physical exercise to improve fitness. A workout may be a combination of different types of exercise. For example, a workout may include aerobics followed by strength training or a series of different exercises of one specific type. (This fact sheet provides a sample strength training workout routine.)

Reps: Short for repetitions, this means the number of times an exercise is performed. An instruction to do eight to twelve reps means to perform the exercise eight to twelve times in good form. Many individuals split the difference and perform ten reps when lifting weights.

Sets: This is a group of reps. Generally, two to three sets of a strengthening exercise are recommended. Three sets of ten reps means the exercise is performed a total of 30 times. Each set has a “rest” period in between.

Rest: This is sometimes referred to as *recovery*. Rest is the break between sets to allow muscles a chance to recover. The amount of time needed during a rest period varies depending on the amount of weight lifted and the individual’s fitness level. The rest period can range from 30 seconds to several minutes. (For the exercise routine in this fact sheet, a one- to two-minute rest period between sets of ten reps is sufficient.) Some may choose to alternate exercises for different muscle groups so one muscle group can rest while a different muscle group is targeted. For example, a set of arm exercises may be followed by a set of leg exercises. After the first set of leg exercises, return to the arms for the second set, followed by the second set of the leg exercises. If working with a partner, you will rest while your partner performs the exercise and you act as the spotter.

Spotter: The person supporting you during an exercise is called a spotter. A spotter can help by standing by in case assistance is needed or by actually helping lift the last few reps. “Can I get a spot?” is a common way those who strength train will ask someone to spot. Having a spotter is a good practice when progressing to heavier weights or performing an exercise with which you are not comfortable. A spotter can prevent injury due to the accidental drop of the weight, sprain of ligaments or strain of muscles or tendons.

Progression: Quite simply, progression means that as muscle strength increases, the challenge to muscles (overload) continues to increase. Gradually increase the amount of weight, repetitions, number of sets or the frequency of exercise sessions to ensure progression. See Table 2. Muscles will adapt to an exercise routine. Progression is necessary to continue making fitness gains. Check to see if you are ready to progress to a heavier weight by counting the number of reps performed for a particular exercise. The weight is too heavy if you cannot perform at least eight reps in good form. If you can perform more than twelve reps in good form, it is time to progress to a heavier weight.

Table 2
Strength Training Progression Strategies

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- **Increase weight**
Increase resistance; add more weight or stronger resistance equipment

 - **Increase reps**
Increase the number of reps in each set or increase the number of sets

 - **Decrease stability**
Increase intensity by increasing instability
For example, do the exercise standing instead of sitting; do the exercise standing on one leg or with both legs on an unstable surface (more advanced)
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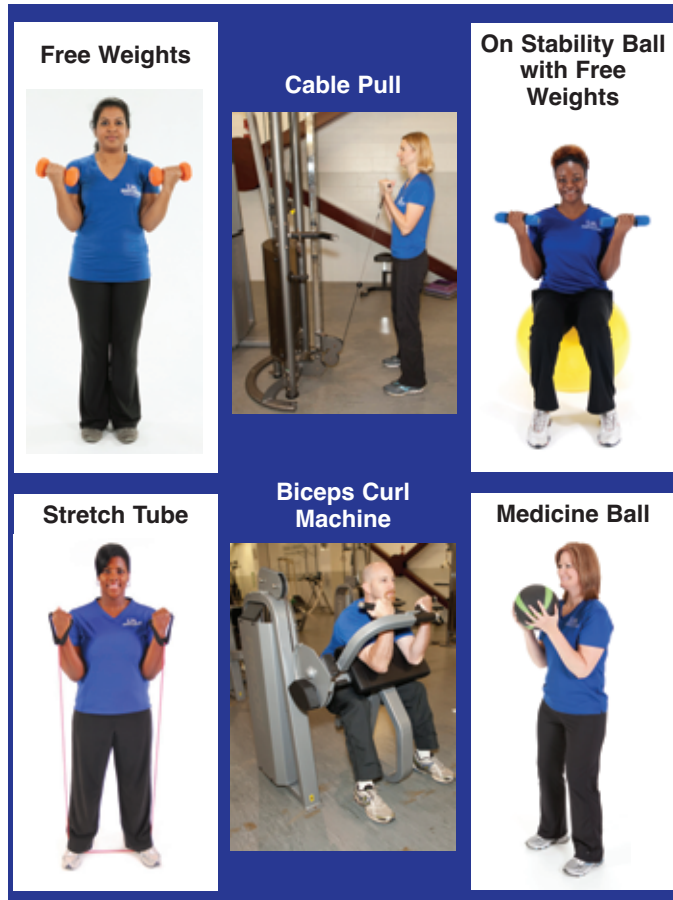
Form: Each exercise has a specific movement designed for body mechanics, safety and to increase muscle strength. It is better to perform fewer reps in good form than to do more reps in poor form. Poor form and incorrectly performing exercises increase injury risk.

1-RM: This stands for one repetition maximum, also known as the 1-rep max, which is the maximum or heaviest amount of weight you can lift one time in good form for a specific exercise. The 1-RM is used to help determine the intensity of the workout. In general, begin exercising at 45 to 65 percent of your 1-RM if new to strength training. For example, if your 1-RM on the bench press is 100 pounds, use weights between 45 to 65 pounds for the bench press exercise. For sedentary individuals or senior adults who have not been exercising, 40 to 50 percent of the 1-RM is a good starting point for strength training. Note that the 1-RM is exercise specific. Different weight levels are needed for different exercises.

Types of Strength Training Equipment

Different types of strength training equipment are available. The most common type is free weights or dumbbells, but strength training exercises can be performed using other types of equipment, such as medicine balls, kettlebells, sandbags, stretch tubes and resistance bands, to name a few. Strength training is often performed on machines. Machines may be multipurpose or made to focus on one particular body part or muscle. Your own body weight can also be used as a strength training tool. Body weight training exercises, such as push-ups and sit-ups, use your body weight for resistance. Body weight training can also use equipment such as a high mounted bar for pull-ups or a chair for triceps dips. When choosing what equipment to use, be sure equipment aligns with your fitness goals and available space for exercise. For example, one person may prefer multiple sets of free weights in different pounds while another may prefer a multipurpose exercise machine. When purchasing equipment for personal use, look for quality equipment and read equipment reviews when available. Figure 1 shows the biceps curl with various exercise equipment.

Figure 1. Biceps Curls



Before You Start Exercising

Be sure to warm-up before starting any exercise regimen. A warm-up increases blood flow to the muscles by performing simple, large muscle movements. When blood flow to the muscles increases, they literally “warm up.” A warm-up should last 5 to 10 minutes. One way to warm-up is walking with large arm movements. You can also warm-up before strength training by performing several of the lifting exercises without any weights. There are many warm-up options.

Wear comfortable clothing that does not restrict your movement. Some prefer loose-fitting clothing, while others prefer close-fitting or compression clothes. Wear what is comfortable for you. Wear closed-toed, sturdy shoes. Shoes specifically for weight lifting are not necessary unless you are doing heavy lifting or a specific training plan requiring them. Most beginners already have appropriate shoes. Do not lift weights in sandals, flip-flops or shoes with a dress heel.

It is important to stay hydrated while exercising. Whether you are exercising at home or another location, keep water close. A general rule of thumb is to drink 64 ounces of water a day. You may find you need more when exercising.

Sample Exercise Routine

The following is a sample exercise routine to work all the major muscles groups. Perform two to three sets of eight to twelve reps of each exercise. If you are new to strength training, start out with two sets of eight reps. After a couple of weeks, try to progress to two sets of ten reps. Then progress to three sets of ten reps or increase the amount of weight lifted.

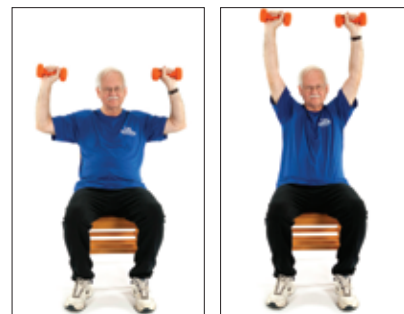
Perform this exercise routine two or three days a week with a “rest” day in between. Just as you rest between sets, muscles need a recovery period between strength training workouts. This rest period is specific to strength training. You can still engage in the other three categories of exercise: aerobics, balance and stretching.

Do not forget to warm-up before performing the exercise routine and cool-down when finished. To cool down, perform light exercises or stretch for five to ten minutes.

Sample Exercises

Overhead Press

1. Sit up straight with feet flat on floor.
2. Hold a dumbbell in each hand at shoulder height with palms facing forward.
3. Slowly raise both arms up over your head, keeping your elbows slightly bent and in line with your body.
4. Pause for a breath, approximately 1 second.
5. Lower the dumbbells back to your shoulders. Repeat.



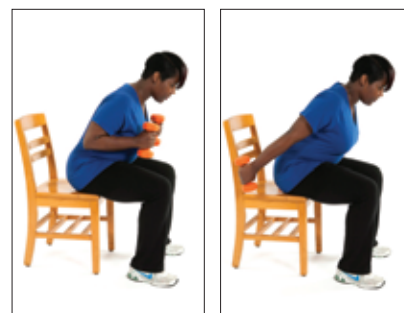
Concentration Curl

1. Sit on the edge of a chair with feet flat on the floor spaced wider than hip-width apart. Lean forward from the hips to about a 45-degree angle. Hold a weight in one hand and place the elbow of that arm on the inner thigh of the leg on the same side of the body.
2. “Curl” the weight by bending the elbow of the hand with the dumbbell up so your arm makes a “V” shape and the dumbbell is up near your chin.
3. Slowly lower the dumbbell toward the floor until your arm is straight but elbow is not locked.
4. Repeat until set is finished, then repeat with the other arm.



Triceps Kickback

1. Sit towards the front of a chair, lean forward from the hips until your torso forms a 45-degree angle to the chair back.
2. Hold a dumbbell in each hand, palms facing in, close to your shoulders.
3. Keep your upper arm and elbow close to your body. Slowly extend the lower part of your arm until it forms a straight line with the upper arm.
4. Keeping the upper arm and elbow in the same position, bend the elbow to bring the weight back toward the shoulder. Repeat.



Modified Side Arm Raise

1. Sit up straight in a chair. Hold a weight in each hand, palms facing towards each other, with elbows bent to a 90-degree angle.
2. Keeping the bend in your elbows, raise both arms to shoulder height.
3. Stop when your arms are parallel to the floor and no higher.
4. Slowly lower to the starting position. Repeat.



Bent Over Row

1. Sit towards the front of a chair. Lean forward from the hips until your torso forms a 45-degree angle to the chair back. Keep your back as flat as possible.
2. Hold a weight in each hand, with arms straight on either side of your legs, palms facing your legs.
3. Draw the shoulder blades together to bring the weights close to your torso, keeping your elbows close to your body.
4. Slowly lower back to the starting position. Repeat.



Rocking Chair

1. Sit on the front edge of a chair with feet flat on floor and back straight. Cross your arms across your chest.
2. Keeping your back straight, tighten your abdominal muscles and lean back towards the back of your chair, stopping just before touching it.
3. Hold for a breath and then raise yourself back to the starting position. Repeat.



Butt Squeeze

1. Sit up straight with feet flat on the floor.
2. Squeeze your buttocks as tight as you can and hold.
3. Release and repeat.



Flamingo Legs

1. Sit up straight with your shoulders down and back away from your ears and your feet flat on the floor.
 2. Pick your right leg up and take a wide side step out.
 3. Hold for a breath, and then return to center.
 4. Do the same on the left side.
 5. Repeat.
- *Note: You can also perform this exercise with both legs at the same time.



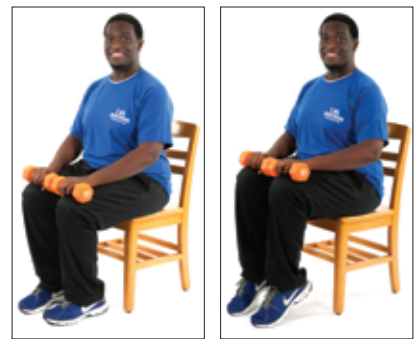
Knee Extension

1. Sit up straight with your shoulders down and back away from your ears and your feet flat on the floor.
 2. Lift your right leg slightly off the floor, and then straighten your leg out in front of you. Try to get your leg parallel to the floor without locking your knee.
 3. Bend the knee to return the leg to starting position. Try to keep your foot slightly off the floor.
 4. Once set is complete on the first leg, repeat on the opposite leg.
- *Notes: 1) If this exercise is uncomfortable for your knees, you can place a rolled up towel under your knees for comfort.
2) For added resistance, wear ankle weights.



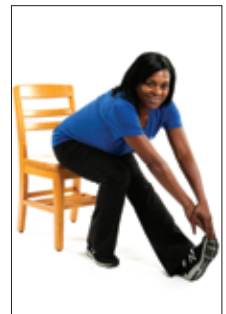
Seated Calf Raise

1. Sit up straight with feet flat on floor, about hip-width apart.
 2. Raise your heels while keeping the toes on the floor.
 3. Lower and repeat.
- *Note: For added resistance, place weights on the legs slightly behind the knees or wear ankle weights.



Isometric Hamstring Hold

1. Sit towards the front of your chair. Keeping one foot flat on the floor, straighten the opposite leg and place the heel on the floor directly in front of you.
2. Keeping your back straight, bend at the hips and reach towards the toes of the straight leg. Stack your hands on top of each other to help prevent you from twisting.
3. Squeeze your upper leg and buttock muscles for isometric strengthening. Hold for a count of five then return to starting position. Repeat.
4. Once set is complete on the first leg, repeat on the opposite leg.



The accompanying poster for this fact sheet, MP528, *Get Pumped: Seated Strength Training Basics*, is available at www.uaex.uada.edu (click the "Publications" link).

Photos Credit: Kerry Rodtnick, Extension Videographer, Communications, University of Arkansas Division of Agriculture, Little Rock

DR. LaVONA TRAYWICK is associate professor - gerontology, **DR. LISA WASHBURN** is assistant professor - health, **JESSICA VINCENT** is county Extension agent - family and consumer sciences, and **LAUREN COPELAND** is program technician - health. All are with the University of Arkansas Division of Agriculture. Traywick, Washburn and Copeland are located in Little Rock and Vincent is located in Hot Springs.

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