

# DIY: A Strength Training Program for Your Home

by Stephen Ball, Ph.D.



Muscular strength and endurance is a component of fitness that is necessary for optimal well-being and quality of life. Unfortunately, the cost of joining a health club or gym is a major barrier for many people who want to do resistance training. Membership costs vary depending on the city and facility's services, but fees generally range from \$25 to \$100 per month. Additional initiation fees may run into the hundreds. In addition, the inconvenience of traveling to a facility and working out with strangers is not appealing to everyone.

A cost-effective and convenient alternative to a gym membership is turning your living room or basement into your own personal training facility. Of course your home gym will not have expensive strength training machines, such as hip sleds or assisted pull-up machines. However, with a moderate investment and a good imagination, you can get a great workout in the comfort of your own home.

## What You Need

1. Space. You'll need an open space that allows freedom of movement and is void of hazards that you might step on, bump into or trip over. A rearranged living room or an open garage stall with adequate traction will work well. You will need about 100 square feet (10' x 10').

2. Equipment. Invest in a few dumbbells (new about \$0.50 per pound) or resistance bands (\$10-\$20) and a stability ball (\$30). Most strength training exercises can be performed with this basic equipment. An adjustable bench that changes angles for your upper body is not necessary, but it would offer additional variety.
3. Plan. Don't begin resistance training until you have developed a plan. It is important that you have a structured program that includes 8-10 exercises to target the major muscle groups of the body. It is always wise to consult a local fitness expert and follow the ACSM guidelines for strength training. If you are a novice, a fitness professional will be able to give you advice beyond what is described here. Perform 1-3 sets of 8-12 repetitions at least twice a week. Make sure to do a brief warm-up before starting your session.

## Tips for Strength Training

- Control the weight. It is important to perform each exercise in a controlled manner. Lower the weight slowly since you are working the same muscles as when you are lifting. To control speed of movement, try using a one-two-three count. The up phase (concentric or lifting) is completed quickly to a count of "one," and the down phase (eccentric or lowering) is completed slowly to a count of "two-three."
- Breathe. Ideally, you should exhale when the weight is being raised and inhale when the weight is being lowered. Don't ever hold your breath. It might help to count out loud the one-two-three count during the movement.
- Go to failure. An estimated 70 percent of strength gains can occur in the first set of training if performed to failure, otherwise called "rep out." Failure or "repping out" means doing as many reps as possible for whatever resistance selected. Going to failure is challenging, but it will maximize your fitness response in a minimal amount of time. The takeaway is that you can get away with doing only one set if you perform that set to failure. Ideally, you should select a weight so that you fail between 8-12 repetitions. As you get stronger, you will need to increase the weight or the repetitions to elicit more gains.
- Progress slowly. The famous saying "Rome wasn't built in a day" applies here. Don't expect miraculous results immediately. Rather, work toward your goals slowly, and appreciate the process of being active. During your first few workouts, use a light resistance, focus on

your form and don't go to failure just yet. Also, be sure to allow time for recovery between sets (30-120 seconds) and between workouts (1-2 days). Your first few workouts might only last 15-20 minutes.

- Include variation. It is not unusual for workouts to become stale and for fitness gains to level off. These plateaus are expected and indicate that you are becoming more trained. Don't get discouraged. If your workout gets old and boring, try different exercises and vary the number of repetitions, the weight or resistance, and the amount of rest between sets. These changes are likely to stimulate muscle adaptation and promote greater enjoyment of exercise.
- Add on. Creating your own home gym is not a massive financial obligation and will not take much space. Over time, add more equipment to your collection, and continue to expand the possibilities of your home training center. For example, build on to your collection with a medicine ball, Bosu® ball or additional free weights.
- Do something. When it comes to strength training—and exercise in general—doing something is truly better than continuing to be sedentary. Of course, more is better than some, and it's possible to train too much. It is not necessary to join a gym to enjoy the benefits of strength training. You can definitely do some in the comfort of your own home.

## Full Body—A Sample Home Workout Plan

### Squat—for hips, thighs and buttocks



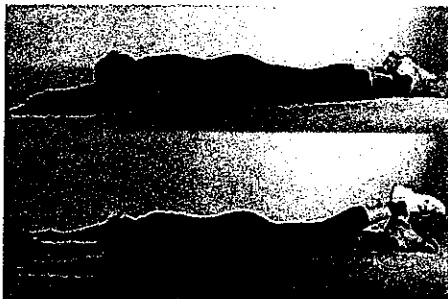
1. From the sitting position with your feet shoulder-width apart and your toes in front of your knees, lean forward slightly and stand up without locking your knees.
2. Slowly lower your body back to a seated position where your upper legs are approximately parallel to the floor.
3. Alternative—Place a stability ball between your middle-back and a wall, and lean back into the ball while performing these same movements.

### Chest Press—for chest muscles and triceps



1. Lie on your back with your feet flat and knees bent.
2. Grip dumbbells and extend upward but don't lock the elbows. Slowly lower to the starting position.
3. Alternatives—Sit on a stability ball and perform same movement. Simple push-ups also work these muscles. A variation in push-ups could be putting your feet on a chair simulating an incline chest press.

### Back Extension—for buttocks (gluteals) and low back



1. Lie face down on the floor.
2. Raise left arm and right leg off the floor with head and neck in line with the arm. Hold for 1-2 seconds, and then slowly lower the arm and leg back to the starting position. Repeat this movement for the right arm and left leg.
3. Alternative—Perform the movement on all fours or lying face down on a stability ball.

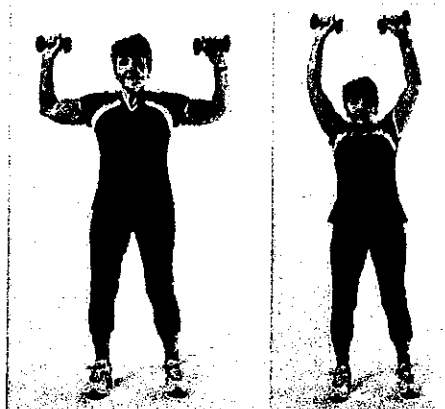
### Standing Lunges—for front of thighs (quadriceps) and buttocks



1. With one leg, step backward until the thigh of the forward leg is parallel to the ground or as far as feels comfortable. Your back knee should come close to the floor but not touch it.

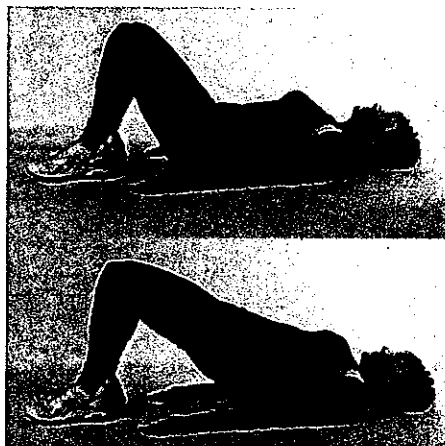
2. Push with the front leg, driving your heel into the floor, to return to the starting position.
3. Alternative—Using a regular-height chair, do bench step-ups from the floor in an "up-up-down-down" pattern. To increase resistance in this exercise, hold dumbbells in your hands.

### DB Shoulder Press—for shoulders



1. Perform this movement sitting in a regular chair, standing or sitting on a stability ball. Hold a dumbbell in each hand with an overhand grip. Make a 90-degree angle with your arms by raising the dumbbells so they are level with your ears.
2. Slowly raise dumbbells over your head until arms are fully extended, but do not lock your elbows. Slowly lower the dumbbells to the starting position.
3. Alternative—Perform a lateral raise by lifting the arms to the sides with a slight bend in the elbows. Keep the weights and arms below shoulder height. You will likely need lower weight for this exercise compared to shoulder press.

### Pelvic Tilt—for abdominals and buttocks



1. Lie on the floor with feet flat on the ground and knees bent. Keep arms at your sides with palms facing the floor.

2. Raise your pelvis so your buttocks and lower back are off the floor. Pause, and then slowly lower your pelvis to the floor.
3. Alternatives—Perform a standard crunch while sitting on a stability ball or on the floor. Try a reverse curl by lying on your back and place arms to the side with the palms face down and knees bent. Raise the knees to the chest lifting the hips off the floor.

### Leg Curl—for back of thighs (hamstrings)



1. Stand behind a chair, and with your foot flexed, slowly bend one leg at the knee, raising your heel up toward your buttocks. Keep your support leg slightly bent.
2. Slowly lower your foot back to the ground. Add ankle weights to increase resistance or use a resistance band.
3. Alternative—Perform a hamstring roll using a stability ball. Lie on your back with your knees bent and your heels on the ball. Raise your hips off the floor and roll the ball away from you until your legs are straight. Roll the ball inward and outward.

### Dumbbell Row—for back musculature and biceps



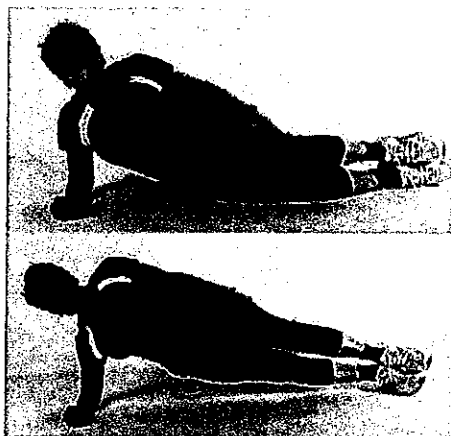
1. Stand with feet shoulder-width apart. Hold a dumbbell in each hand with elbows slightly bent. Bend forward at the waist and keep a slight bend in the knees.
2. Pull dumbbells up to your sides until your upper arms are almost parallel to the ground. Slowly return the dumbbells to the starting position.
3. Alternative—With resistance bands, stand on the band in its most middle section while holding the ends of the resistance band with your hands.

### Biceps Curl—for biceps



1. Stand with a dumbbell in each hand and your palms facing your thighs.
2. Slowly lift the weights and rotate your forearm so that your palms end up facing your shoulders at the top of the movement. Slowly lower to the starting position so that your palms are facing your thighs.
3. Alternative—With resistance bands, stand on the band in its most middle location while holding the ends of the resistance band with your hands while performing the movement.

### Side Plank—for core



1. Lie on your side with left leg on top of the right. Raise upper body and place right elbow beneath the right shoulder.
2. Your elbow should be bent at a 90-degree angle and resting on the ground. Hold for up to 60 seconds.
3. Alternative—Perform a standard plank by lying face down resting on the forearms with your palms flat on the floor. Rise up onto your toes and rest on your elbows, keeping your back straight and flat.

*The exercise photos under "Full Body—A Sample Home Workout Plan" were provided by Stephen Bell, Ph.D., and the University of Missouri.*

## THEME: DIY EXERCISE

# DIY: Improving Your Flexibility and Balance

by A. Lynn Miller, P.T., Ph.D., FACSM



Two parts of fitness that are often overlooked are flexibility and balance. This may be because of conflicting information regarding their importance or relevance. However, both can play a vital role in overall fitness and function. Tight muscles can contribute to back pain or difficulty performing simple tasks, such as putting objects into overhead cupboards. While poor balance is known to increase the risk of falls in older persons, it may also affect sports performance in younger individuals. Luckily, it is very easy to work on both flexibility and balance on your own.

To train flexibility, stretching or repeated movement through a joint's complete range of motion will work to increase joint range or prevent loss of motion, respectively. To stretch a muscle, it should be put in a position that produces a slight pull on the muscle but not to the point of pain. With a static stretch, the position in which a slight stretch is felt should be held 15-30 seconds, and each stretch should be repeated 3-5 times on each side of the body. The primary note regarding stretch position is that it should not cause pain or take the joint past the normal range. There are several forms of dynamic stretching, with the key difference being that dynamic stretches take the joint and muscles through the full range of motion, often repeatedly.



ACSM guidelines recommend that stretching activities be done at least two days per week. If you have lost some joint motion or feel stiff, range of motion or stretching activities should be done daily. The muscles that are most often tight are the hamstrings, hip flexors, calves and chest muscles. Each of these can be stretched using different positions, and some general motions may stretch more than one muscle group. For simplicity's sake, only common static stretches will be described below.

- **Hamstrings.** Sit on the ground with legs straight in front of you. Gently lean forward from the hips (try to keep the back fairly straight) until a stretch is felt on the back of the thighs.
- **Hip flexors.** Stand on one foot, and bring the other foot to the buttocks. Pull back gently, while keeping your knee pointed at the ground and your hip straight. If needed, hold onto a counter or chair to keep your balance.
- **Calves.** Step forward with one leg. Shift your weight toward the front leg while keeping the back heel on the ground. If you press the hip of your back leg forward, this will also help stretch the hip flexors.
- **Chest muscles.** Standing in a corner, bring hands up to shoulder height and place against the wall on either side. Keeping hands in position, lean body forward until a stretch is felt in the front of the chest. This can also be done using a doorway, turning away from the hand that is on the wall.

Problems with tripping or falling often indicate difficulty with balance. Ideally, you should be able to stand on one leg for at least 20 seconds unsupported for static (not moving) balance. Balance activities can be started with simple position shifts for those that already have balance issues. Shifting should take place in all directions, including angles, with different placements of the feet. Improving balance requires a progressive challenge. This can be done by increasing the number of repetitions or

the length of a balance activity, adding movement to make the activity more dynamic, or by reducing input from other senses, such as by closing the eyes. In addition, the amount of support from the arms can be progressed by using both hands, then one hand, then one finger, and finally no assistance. ACSM guidelines suggest such activities be done at least two days per week. A simple progression at home might be:

- Weight shifts. Step side-to-side, forward and backward. Then step forward and backward at an angle.
- Single leg stance. Stand next to a counter or chair for support. Stand on one leg and touch the toe of the other leg to the front, side and back.
- Single leg stance with movement. Stand next to a counter or chair for support. Stand on one leg and perform a partial squat. Repeat five times with each leg. This will also help with thigh strength. Alternative: turn slightly to the left, then right, moving only at the hip. Repeat five times with each leg.

Other activities can also be used for flexibility and balance. Tai chi, an activity based on martial arts, is excellent for balance because it uses multiple types of weight shifts as well as standing on one leg for short periods of time. Yoga uses different body positions and more sustained holds, thus it can also be used to improve static balance and flexibility. There are numerous DVDs and other aids available for those wishing to learn one of these activities. The key to any stretching or balance program is regularity, and these activities are not meant to be done at a high intensity.



## THEME: DIY EXERCISE

# DIY: Stress Management for the Modern Adult

by Greg Chertok, M.Ed., CC-AASP



When addressing your overall health, it's critical to view mental health as a key component. Your mental health is based upon a number of factors, one of which is your ability to manage stress. Stress is what happens when we perceive an event in a way that causes negative emotions, anxiety and tension. If not managed quickly or properly, a great deal of your bodily energy and resources will be consumed by stress, and this will compromise your immune system and may lead to physiological effects such as impaired sleep, headaches, muscle pain, depression and more. It serves us well, then, to learn how to effectively manage stress, as doing so greatly improves our overall wellness. Below are convenient do-it-yourself strategies that can help.

## Breathing Exercises and Muscle Relaxation Exercises

Many people respond positively to both, which are considered "muscle-to-mind" relaxation strategies. Breathing properly is relaxing, in part because it increases the amount of oxygen in the blood. Oxygen plays a key role in supplying energy to the body's muscles, and good circulation facilitates the removal of waste products from the tissues. Unfortunately, many individuals have never learned deep, diaphragmatic breathing, and most are unaware that their breathing patterns are

disrupted under stress (we tend to either hold our breath or breathe quickly and shallowly from the upper chest when anxious).

Do it yourself: Put one hand on your abdomen and the other hand on your upper chest. If you are taking a proper deep breath from the diaphragm—the thin muscle that separates the chest and abdominal cavities—the hand on your abdomen should move out while inhaling. While exhaling, the hand on your chest should remain relatively still. Once you're comfortable with the breath cycle, commit to taking several minutes per day to simply concentrate on your breathing. This meditative break in the day can induce very calming relaxation.

Progressive muscle relaxation, a technique developed by in the early 1920s, is another strategy that involves the tensing and relaxing of key muscle groups. Since muscle tension accompanies anxiety, learning to relax the muscular tension may effectively reduce anxiety.

Do it yourself: Sit or lie in a comfortable position. With your eyes closed, tense the muscles in your legs for 10 seconds, then release the tension for 20 seconds, noticing the difference between the feelings of the tension and relaxation. Try this with other muscle groups, particularly those in the abdomen, chest, arms and face. Find time to practice once a day for 10 minutes. The technique becomes more effective with practice, so stay committed!

## Stretching

Stretching has a positive effect on physical and mental health. Stretching promotes mind/body awareness, as successful completion of each physical stretch requires mindfulness of your bodily positions, breathing and control of your tension level. Stretching also improves circulation and range of motion, decreases muscle tension and reduces pain and soreness after exercise. A stretched, lengthened muscle is typically less likely to strain or tear than a tight, shortened one.

Do it yourself: Dedicate 10 minutes per day to stretching your muscles, particularly those in your legs, arms and neck. Engaging in relaxation breathing during the stretch will help maximize the activity.

## Cardiovascular Exercise

Individuals who exercise aerobically report fewer symptoms of anxiety and depression and lower levels of stress and anger. Exercise appears to affect particular neurotransmitter systems in the brain like an antidepressant would. Cardiovascular exercise may also reduce one's fear of bodily sensations, such as a racing heart and rapid breathing. Both of these, perhaps once associated with losing control or high anxiety, may now become an indication of health-enhancement and physical success. ACSM suggests that we engage in 150 minutes per week of moderate-intensity activity.

**Do it yourself:** Walk or jog on the treadmill/elliptical, swim, dance or bike for 30 minutes per day, five days per week. Working out to an exercise DVD can also act as a convenient substitute.

## Massage

Therapeutic massage may also act as a valuable tool in relieving the psychological and physical suffering of stress. Psychologically, the touch of the therapist helps relieve anxiety and fear, which aids the individual in regaining some sense of control over a stress-inducing situation. Physically, a skillfully applied massage sends soothing, pleasant sensations to the brain, which slows the secretion of stress hormones, slows and deepens one's breathing, lowers blood pressure, slows one's pulse rate and relaxes the body to the point that it begins to recover and rejuvenate.

**Do it yourself:** While you may be able to massage some muscles (like your calves), you may choose to turn to a professional masseuse to get the full effect. Treat yourself to a 30-60 minute professional massage, and reap the benefits of relaxation.

## Yoga

Researchers have found that yoga may be superior to other forms of exercise in its positive effect on mood and anxiety. Research reveals an association between yoga postures and decreased depression and other widespread anxiety disorders.

**Do it yourself:** Purchase a yoga DVD—an introductory disc will do—and practice three times a week for one hour each session.

## THEME: DIY EXERCISE

# DIY: Improving Your Nutrition in Four Simple Steps

by Pamela S. Hinton, Ph.D.



Improving your diet doesn't require significant resources to invest in a nutritionist or personal trainer. Whether you need a complete diet overhaul or minor adjustments, you can positively affect your health with just a few simple changes to your diet and eating habits. Follow these do-it-yourself nutrition tips to achieve a healthy body weight, reduce your risk of chronic disease and maybe even spice up your daily plate.

## Achieve a healthy body weight.

For most people, this means reducing daily energy intake by several hundred calories to sustain weight loss. Although this task sounds daunting, just one or two small changes will do the trick if they are maintained over time. For example, you can:

- Substitute water for sugary soda and fruit drinks. If it's the carbonation you crave, choose unsweetened, carbonated water.
- Beware the coffee-based drinks that are made with whole milk, sweetened with syrup and topped with whipped cream. Ask for your latte with skim milk and "no whip" to cut calories.
- Reduce the amount of added fat. At 100 calories per tablespoon, salad dressing, butter, margarine, cream cheese and peanut butter are energy-dense. You can save a significant number of calories by using these sparingly or selecting low-fat alternatives.

- Use less fat in cooking and baking. Substitute fruit purées for a significant portion of the oil or butter in baked goods. Thicken soups and sauces with vegetable purées. Buttermilk is an excellent substitute for sour cream or whole milk in cream soups, sauces or mashed potatoes. And, for your holiday pies, try a crust of ground almonds with a minimal amount of oil and syrup rather than lard or butter.
- Revamp your snacks. Rather than snacking on chips, crackers, cookies or candy, which are high in fat, trans fat and calories, opt for a piece of fresh fruit, baby carrots, air-popped popcorn or a cup of low-fat yogurt. If you crave a salty snack, like chips or crackers, choose the baked or reduced-fat version.

## Reduce your intake of saturated fat, trans fat, sugar and sodium.

Not only do added fat and sugar pile on unwanted calories, but consumed in excess, they contribute to weight gain and chronic diseases such as cardiovascular disease, diabetes and some types of cancer. In some people, too much sodium leads to high blood pressure. To combat these problems, you can:



- Limit your intake of processed grains and snack foods, such as cookies, crackers, corn and potato chips, and snack cakes. Although these snacks are highly palatable, they are also laden with trans fat, sugar and sodium. Instead, choose unprocessed foods for snacks, such as dried fruit, pretzels or nuts.
- Limit your intake of processed meats—such as bacon, lunch meat and sausage—and of cheese and pizza, which are also high in saturated fat and sodium. Instead, prepare lean cuts of fresh meat and choose low-fat cheese. Several times per week, choose beans, legumes or tofu as a source of protein in place of meat.
- Use less salt at the table and during cooking. In place of salt, enhance the flavor of your food with added herbs and spices.