

# Strength Training Basics

## What is strength training?

Strength training, or weight training, means doing exercises that build muscle strength. To build muscle you can lift free weights, use weight machines, or do exercises that use your own body resistance (such as push-ups, pull-ups or sit-ups). Proper strength training makes muscles stronger by asking them to do more than usual. The body responds to this challenge by becoming stronger. Strength training must be done gradually and carefully, but can be done at any age.

## What are the benefits of strength training?

Strength training helps you keep and can even increase the range of movement in your joints. It strengthens bones, muscles, tendons, ligaments, and improves your fitness and health. It can also help prevent injuries and speed up your recovery when injuries do occur. It also improves your ability to do everyday chores and activities.

Strength training has many more benefits including:

- ▶ **Burn more calories:** Your base metabolic rate can stay elevated 18 to 24 hours after a strength workout (even higher and longer than an aerobic workout). This means that your body burns calories at a faster rate long after you are done lifting weights.
- ▶ **Weight loss:** You lose unhealthy body fat while sparing good lean muscle mass.
- ▶ **Strong bones:** Weight bearing exercise increases bone density. This decreases your risk of having osteoporosis.
- ▶ **Better insulin sensitivity:** Your body is able to control your blood sugar levels with less insulin and puts less stress on your pancreas. This is particularly beneficial for people with diabetes.
- ▶ **Lower cholesterol:** Training helps lower LDL (bad cholesterol) levels and triglyceride levels and raise HDL (good cholesterol) levels.
- ▶ **Lower blood pressure:** Strength training lowers your blood pressure and help your heart work better.

- ▶ **Mood:** Your alertness, energy, overall attitude, and sex drive is likely to improve.

## How many days a week should I train?

How often you should train depends on your overall health and is different from person to person. Most people can make excellent progress lifting 2 to 4 days per week for only 20 to 40 minutes per workout.

## What exercises should I do?

There are many exercises to choose from. Try to select a good balance of exercises so that you are doing exercises for your upper body, lower body, and abdominal muscles.

- ▶ **Good basic upper body exercises include:** bench press, lat pull-downs, pull-ups, triceps extensions, dips, and curls. (See Upper Body Exercises)
- ▶ **Good basic lower body exercises include:** squats, lunges, calf raises, leg curls, leg extensions. You can strengthen your abdomen by doing crunches (sit-ups). (See Lower Body Exercises)

You can use either free weights or weight machines. One is not better than the other. Each has its own benefits and drawbacks.

- ▶ **Free weights:** Free weights use dumbbells, barbells, or your body weight for resistance (such as push-ups). Dumbbells are the weights that you hold in each hand. Barbells are the longer bars that can be used for exercises such as squats or bench press.
- ▶ **Weight machines:** There are many different types of machine exercises. The machine balances the weight load for you, which makes the exercise easier because you don't have to worry as much about balancing the weight.

## What do rep and set mean?

- ▶ **Rep:** Rep is short for a repetition. A rep means that you have completed the range of motion once for an exercise. For example, doing 1 pull-up would be 1 rep.

- ▶ **Set:** A set is the number of reps of a particular exercise that you should do before resting or moving to another exercise. For example, if a workout calls for 3 sets of 10 reps of bench press with 3 minutes of rest in between sets, you would bench press the bar 10 times, then rest for 3 minutes before doing another set of 10.
- ▶ **One rep max (1RM):** 1RM is the maximum amount of weight you can lift for a given exercise for only one rep.

### ***How much weight should I lift and how many reps should I do?***

How you design your training program depends on your goal. If you want to become lean and lose body fat, you train differently than if you want to build your muscle size.

#### **To become lean and lose body fat:**

- ▶ Strength training can really help you lose weight because after a strength training workout your body burns calories at a faster rate for up to 24 hours. So, you are still helping your body lose weight hours after your workout. To lose weight you need to burn more calories than you eat. However, one of the biggest mistakes people make is not eating enough protein. You need to eat fewer calories that come from sugar or carbohydrates, but make sure that you continue to eat enough of protein. Protein helps you build lean muscle.
- ▶ One good way to weight train for fat loss is to do circuit training. In circuit training, you move quickly from one exercise to the next with little or no rest between sets. Because you are not taking a rest between sets, do not try to lift a lot of weight during each set (use a weight that is 40% to 60% of your 1RM for each exercise). So, for example, if your 1RM for leg curls is 100 pounds, then you should use 40 to 60 pounds for each set. Do 2 to 4 sets of 8 to 12 reps for each exercise. Rest no more than 90 seconds between sets.
- ▶ Women do not need to worry that lifting weights will make them gain weight and get bulky. Since muscle takes up much less space than fat does, women who weight lift will start to notice their clothes fit more loosely. Also women are less likely to gain muscle size compared to men who lift weights because women have much lower (nearly 20 times) testosterone levels than men. Testosterone helps muscle growth.

#### **To gain muscle size:**

- ▶ If your goal is to gain muscle size, then nutrition is very important. To build bigger muscles you need to eat more calories than you burn. You want to make sure you gain quality weight (lean body muscle) by eating enough quality protein (such as lean red meat, chicken, fish, eggs and nuts) and doing a proper training program, otherwise you will just gain fat.
- ▶ To gain muscle size, you need to increase the amount of weight you lift from one workout to the next. Try to train in the 4 to 8 rep range per set using a weight that is between 60% to 80% of your 1RM for a given exercise. So if your 1RM for bench press is 200 pounds, you should lift between 120 and 160 pounds for each set. Do 3 to 5 sets and rest about 1 to 3 minutes between sets.

There are many types of training programs. Ask a certified strength and conditioning coach or personal trainer to design a program that will work for you.

### ***What else do I need to know before starting a strength training program?***

Before starting any strength training program, talk to your health care provider. You should also make sure to:

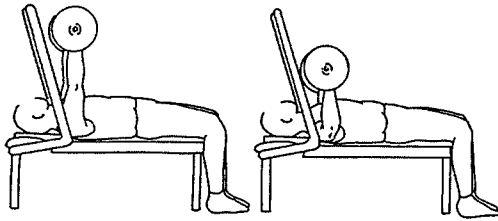
- ▶ **Eat right:** The time your body is getting stronger is actually in between workouts, during the recovery period. If you train hard, but eat poorly, your body won't respond to the workouts as well.
- ▶ **Change the workout:** Every so often change the exercises in the workout, the rep ranges, the rest times, the exercise order, or the number of sets. If you do the same workout week after week without altering some of the variables, your progress will stall.
- ▶ **Use good form:** Do not sacrifice proper posture and form for the sake of lifting more weight. If necessary, use less weight and do the exercise correctly. Be careful toward the end of a set or workout when it is harder to have good posture and form. Exhale when you are lifting a weight, inhale when you are lowering a weight. Don't hold your breath.
- ▶ **Exercise your entire body:** Most people undertrain their legs and overtrain their upper body. Be balanced in your training approach. Try to train opposing muscle equally (for example, train both biceps and triceps, quads and hamstrings, back and chest).

- ▶ **Be realistic:** Make sure you are realistic about your exercise program. It is better to design a program where you lift 2 days a week and always do your workouts than to plan to lift 4 days a week and have trouble finding time to complete your workout plan.
- ▶ **Don't overtrain:** Overtraining is when your body is not able to recuperate between workouts. You may

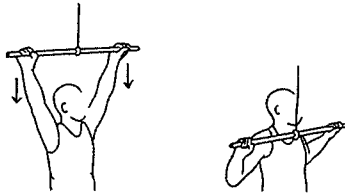
be overtraining if you are getting headaches or nausea or have a fast heart rate when you wake up. If you find yourself dreading going to the gym, feeling run down, or lacking a good night's sleep - take a day or two off before training again.

## Strength Training: Upper Body Exercises

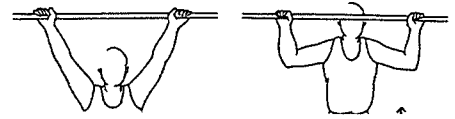
**1. BENCH PRESS:** Lay down on a flat bench with your head under the bar. Grab the bar with your palms facing away from you. Your hands should be placed about 3 inches wider than your shoulder width on each side. Place your feet firmly on the ground. Push your buttocks and back flat into the bench. Lower the barbell down to your chest. Push the barbell up, away from your chest and slightly towards your head. Note: This can also be done holding dumbbells.



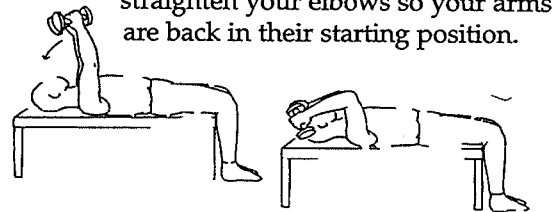
**2. LAT PULL-DOWNS:** Grab the lat bar with your hands placed 2 to 3 inches wider than shoulder width. Sit on the seat and face the machine. Look straight ahead and slightly upwards. Pull the lat bar down. Pull it in front of your face until it touches the top of your chest. Pause for one second. Slowly let the lat bar rise up until your arms are straight.



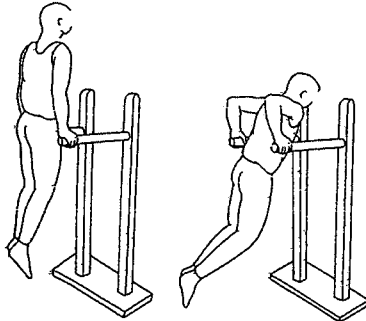
**3. PULL-UPS:** Grab the bar using a grip 2 to 3 inches wider than your shoulder width. Start with your arms straight. Pull your body up until your chin is over the bar. Pause for one second. Slowly lower your body back until your arms are straight.



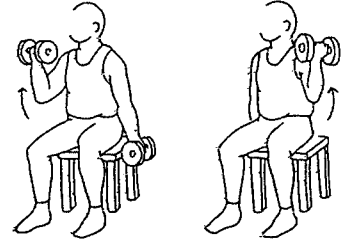
**4. TRICEP EXTENSIONS:** Grab a dumbbell in each hand. Lay down on a flat bench. Push the dumbbells up so that your arms are straight. Slowly bend your elbows and lower the dumbbells toward your head until they are next to your ears and your elbows are fully bent. Now fully straighten your elbows so your arms are back in their starting position.



**5. DIPS:** Use a set of parallel bars at a dip station. Place one hand on each bar with your palms facing the floor. Start with your elbows locked and your arms straight. Look straight ahead. Slowly lower your body down. Stop when your elbows are at or a little past 90 degrees. Pause for one second. Push your body up, until your arms are straight once again.

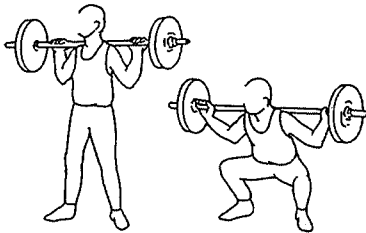


**6. CURLS:** Sit on a bench with a dumbbell in each hand. Grip the dumbbell so that your palms face up. Keep your back straight and look forward. Bend your right elbow to raise the dumbbell. Raise the dumbbell until your right elbow is fully bent. Slowly lower the dumbbell back down until your right arm is straight. Now do this same motion for your left arm.

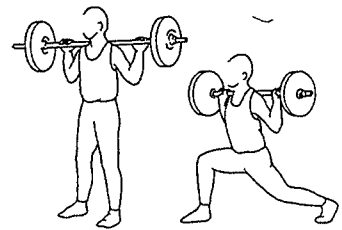


## Strength Training: Lower Body Exercises

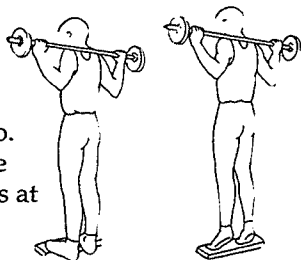
**1. SQUATS:** Place the barbell on your upper back. Grab the barbell with a wider than shoulder width grip. Stand with your feet wider than shoulder width. Keep your head up and your back straight. Now bend your knees and squat down until your thighs are parallel to the floor. Do not bend your upper back or lean forward. Once your thighs are parallel, push upwards into the standing position. This exercise can also be done holding dumbbells at your sides.



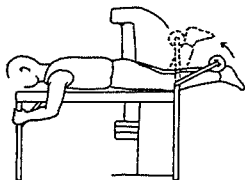
**2. LUNGES:** Place the barbell on your upper back. Stand tall and look straight ahead. With your right foot, step straight ahead a little more than a normal stride. Bend your left knee until it almost touches the ground. Your right knee should also be bending and pointing straight ahead. Keep your trunk, head, and shoulders upright and pointed straight ahead. Push off with your right foot, return it next to your left foot, and return to the standing position with both feet next to each other. Now step forward with your left foot, and repeat the lunge with your left leg. This exercise can also be done holding dumbbells at your sides.



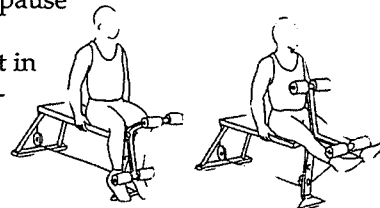
**3. CALF RAISE:** Place a 2 x 4 piece of wood on the floor (you could also use one of the large round pound weight plates). Place the barbell on your upper back. Stand on top of the board with the heel half of your foot hanging off the back. Now raise up on the balls of your toes. Pause at the top for a count of two. Lower your feet back down. Let your heels go below parallel and pause for a count of two. This exercise can also be done holding dumbbells at your sides.



**4. LEG CURLS:** Adjust the leg pads to rest above your ankles but below your calves. Select the appropriate weight in the weight stack. Lay down on your stomach. Curl your legs up towards your buttocks. Pause at the top for a count of one. In a controlled manner lower the weight back until your leg is straight.



**5. LEG EXTENSIONS:** Sit down on the machine. Adjust the leg pads so that it is placed at mid shin level. This should be above the ankles, but below the knees. Select the appropriate weight in the weight stack. Straighten out your knees, pushing out and away the leg pads. Once your legs are straight, pause for one second. Lower the weight in a controlled manner by bending your knees back to the starting position.



**6. CRUNCHES:** Lay flat on the floor or a mat. Cross your arms across your chest. Place your right hand on your left shoulder. Place your left hand on your right shoulder. Bend your knees and put your feet firmly on the ground. Slowly lift your head, neck, and shoulders off the ground several inches towards your knees. Pause at the top for one second. Lower your head, neck, and shoulders back to the ground.



