



## FREE WEIGHT EXERCISES

The following basic exercises use free weights to work the major muscle groups. The exercises that use barbells (bar and weights) can also be performed with dumbbells (small bar and weights or fixed-weight dumbbells). The

last two exercises require dumbbells. You can determine your 1RM for the various muscle groups using some of these exercises, but because resistance machines exercises are safer, they are the preferred method.

### SEATED OVERHEAD PRESS

Weights: barbell

This exercise requires two spotters, standing by the lifter's shoulders on either side of the bench. If you are serving as a spotter, keep your hands under the bar with your palms up. Be ready to take the bar if the lifter loses control (especially at the top of the lift), if the barbell begins to move backward, or if the lifter begins to tremble.

1. Sit on the end of a bench in front-stride (split-foot) position.
2. Hold the barbell at chest height in preparation for pushing the bar vertically. Grasp the barbell with your hands facing away from your body and positioned slightly more than shoulder-width apart.
3. Tighten your abdominal, back, and arm muscles. Tip your head back slightly.
4. Push the bar straight up, directly overhead.

Caution: Do not let the bar go forward or backward. Do not lock your elbows. Do not arch your back.



**This exercise uses the muscles at the top of your shoulders, between your shoulder blades, and on the back of your arms.**

### BENCH PRESS

Weights: barbell

This exercise requires two spotters, who stand by the lifter's shoulders on either side of the bench. If you are serving as a spotter, place the bar into the lifter's hands. During the exercise, keep your hands under the bar with your palms up. Be prepared to take the bar if the lifter loses control.

1. Lie on your back on a bench with your feet on the floor and your lower back flat. Extend your arms into the up position (perpendicular to the floor).
2. Grasp the bar with a palms-up grip and your hands slightly farther than shoulder-width apart, your elbows straight, and the bar approximately over your collarbones.
3. Lower the bar until it touches your chest just below your armpits. When the bar touches your chest, your forearms should be perpendicular to the floor and your elbows should point neither toward your feet nor out to the sides but halfway between (at 45 degrees).

4. Tighten your abdominal, back, and arm muscles. Tip your head back slightly.  
Caution: Do not lock your elbows.
5. Push the bar up to the starting position with your arms perpendicular to the floor. The bar follows a slightly curved path.

Caution: Do not lock your elbows or bounce the bar off of your chest. Do not arch your back or lift your hips. If the weight gets in front of or behind your arms, you may lose control.

**This exercise uses the muscles on the front of your chest (pectoral) and the back of your arms (triceps).**



## KNEE EXTENSION

Weights: weighted boot or ankle weight

One person can help the lifter put on the boot or ankle weight.

1. Put the weight on one foot or ankle. Sit on a bench with your lower leg hanging over the edge. Grasp the bench with your hands.
2. Lift the weighted boot by extending your knee until your leg is straight.  
Caution: Lift slowly. Do not lock your knee when you extend, and do not kick your leg upward.
3. Repeat the exercise with your other leg.



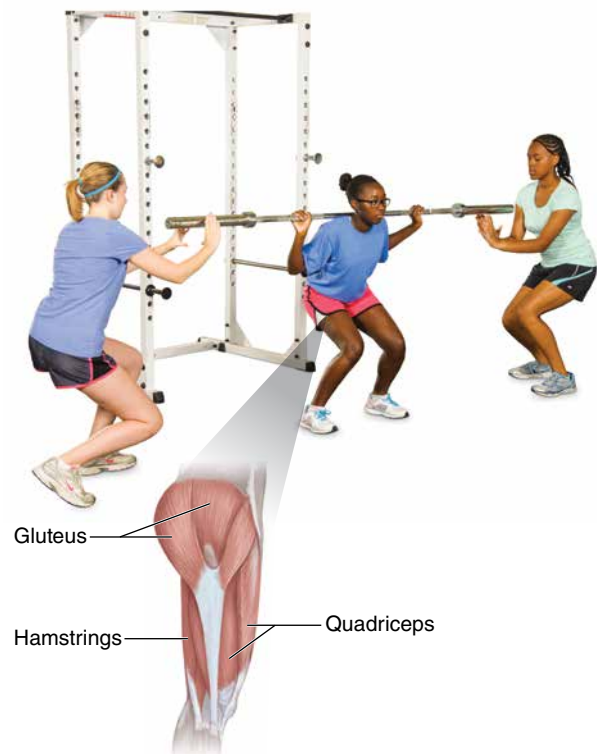
**This exercise uses the muscles at the top of your thighs (quadriceps). The fourth quadriceps muscle, the vastus intermedius, lies beneath the rectus femoris and therefore is not shown in the illustration.**

## HALF SQUAT

Weights: barbell

Note: This exercise can be done only if a squat rack is available.

1. Stand in a side-stride position with your feet shoulder-width or slightly farther apart. Your toes should point straight ahead or be slightly turned out. Keep your head up and your back straight.
2. Hold the barbell across the back of your shoulders at the base of your neck with your hands slightly farther than shoulder-width apart and your palms facing forward. Point your elbows toward the floor with your forearms perpendicular to the floor.
3. Squat until your knees are at a right angle, then rise. Keep your heels flat on the floor. Do not let your knees get in front of your toes. Focus on a spot on the wall slightly higher than your standing height. Look at this spot for the duration of the lift—when lowering and when straightening.



This exercise uses the muscles on the front of your thighs (quadriceps) and your buttock muscles (gluteal).

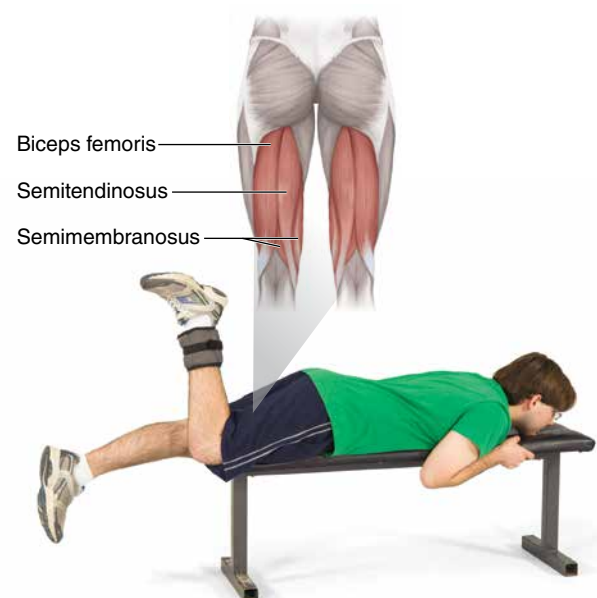
Caution: Do not round your back. Do not lean too far forward at your hips or let your knees get in front of your toes. Do not squat too deeply.

## HAMSTRING CURL

Weights: weighted boot or ankle weight

One person can help the lifter put on the boot or ankle weight.

1. Put the weight on one foot or ankle. Lie facedown on a bench, with your knee-caps hanging over the edge. Grasp the bench with your hands.
2. Lift the weighted boot by flexing your knee to a right angle.  
Caution: Do not lock your knee when you extend.
3. Repeat the exercise using your other leg. To determine your 1RM for this exercise, use the hamstring curl on the resistance machine.



This exercise uses the muscles on the back of your thighs (hamstrings).

## BICEPS CURL

Weights: barbell

Spotters are not required, but they can place the barbell in the lifter's palm-up hands.

1. Stand erect with your feet in side-stride position. Tighten your abdominal and back muscles.
2. Grasp the bar with your palms up and your hands slightly more than shoulder-width apart. The arms are fully extended.
3. Keep your elbows close to your sides and lift the weight by bending your elbows only. Raise the weight to near your chin, then return to the starting position.

Caution: Do not move other joints, especially in your back.

4. You can also perform this exercise with your palms down.



This exercise uses the muscles on the front of your upper arms (biceps) and other elbow flexor muscles.

## HEEL RAISE

Weights: barbell

This exercise requires two spotters, who stand by the lifter's shoulders, one on each side.

1. If the weight is manageable, lift the bar above your head as you would in an overhead press (with spotters). Then lower the bar to your shoulders. If the weight is heavier than you can easily press, have spotters lift the weight to your shoulders.
2. Once the bar is on your shoulders, stand with the balls of your feet on a 5-centimetre board and your toes turned in slightly.
3. Rise onto your toes, then lower to the starting position.

Caution: Keep your spine straight.

4. Advanced lifters may also try this exercise with their toes pointing straight ahead (more difficult) or with their toes turned outward (even more difficult). To determine your 1RM for this exercise, use the heel raise on the resistance machine.



This exercise uses your calf muscles.

## SEATED FRENCH CURL

Weights: dumbbell

This exercise requires one spotter.

1. Sit on the end of a bench with your arms extended overhead and your palms facing up.
2. Hold one end of a dumbbell in both hands above and behind your head. Tighten your abdominal and back muscles. Slowly lower the weight toward the back of your neck until your arms are fully flexed at the elbows. Keep your elbows high.
3. Slowly return to the starting position, moving only your elbow joints. To determine your 1RM for this exercise, use the triceps press.



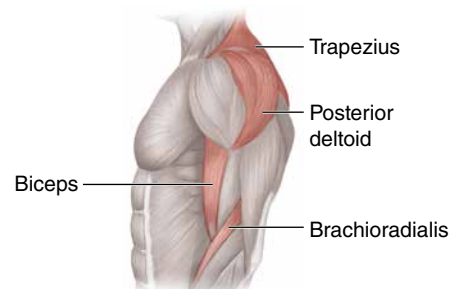
This exercise uses the muscles on the back of your upper arms (triceps).

## BENT-OVER DUMBBELL ROW

Weights: dumbbell

This exercise requires no spotters.

1. Hold the dumbbell in one hand and rest your opposite hand and knee on a bench to support the weight of your trunk and protect your back.
2. Pull the dumbbell upward until it touches the side of your chest near your armpit and your upper arm is parallel to the floor.
3. Slowly lower the weight.
4. Repeat the exercise with your other arm. To determine your 1RM for this exercise, use the seated row.



This exercise uses your biceps muscles, your shoulder muscles, and the muscles between your shoulder blades.