

# Muscular strength & endurance

## Warm up

Before you do resistance exercises, you will want to warm your muscles up with 5-10 minutes of low intensity activity such as walking or marching in place.

**Disclaimer:** These exercises and recommendations are for apparently healthy individuals. It is always best to discuss your new activity plans with your doctor who may have some additional advice for you.

Men older than 40 years and women older than 50 years who plan a vigorous program or who have either chronic disease or risk factors for chronic disease should consult their physician to design a safe, effective program.

*Muscular strength is how **much** weight you can lift at one time. Muscular endurance is how **many times** you can lift a certain amount of weight. Resistance training (also referred to as weight training or strength training) helps increase muscular strength and endurance.*

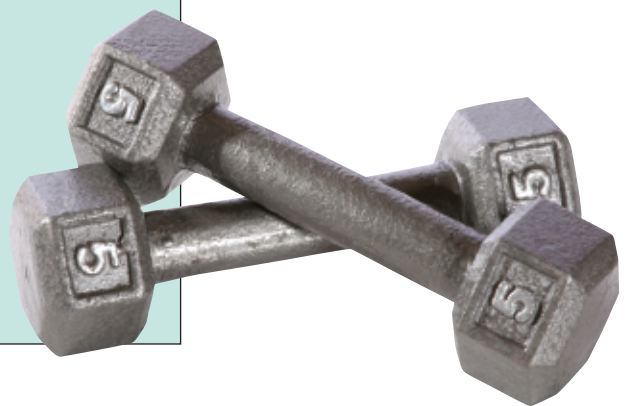
## Resistance training tips

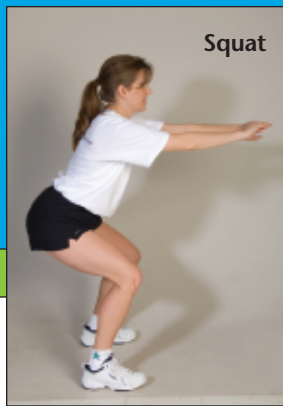
- Perform exercises for each of the major muscle groups: legs, back, chest, shoulders, arms and abdomen.
- Perform one set of each exercise to the point where you feel your muscles are fatigued, while maintaining proper form.
- Exercise each muscle group 2 to 3 nonconsecutive days per week if possible.
- Use good form. Using good form is as important as the amount of weight you use!
- Allow enough time between exercises to perform the next exercise in proper form.
- Perform both the lifting and lowering portion of the resistance exercises in a controlled manner.
- Maintain a normal breathing pattern; breath-holding can cause excessive increase in blood pressure. Breathe out during the lifting phase; breath in during the lowering phase.
- If possible, exercise with a training partner who can provide feedback, assistance and motivation.

**REPETITION:** how many times an exercise is performed in a row before resting

**SET:** a group of repetitions

**Example:** 8 push-ups (repetitions), rest for one minute, 8 push-ups (repetitions) = 2 sets of 8 repetitions of push-ups.





Squat



Lunge



Standing  
straight  
leg  
extension



Outer thigh lift



Inner thigh lift

## LEGS

### Squat

- Start by standing with your feet shoulder-width apart, knees slightly bent.
- Slowly lower your body, with the hips moving back as if sitting in a chair.
- Keep your weight directly over the heels.
- Bend your knees to about 90 degrees.
- Pause, then slowly return to the starting position.
- Do 8-12 in a row.

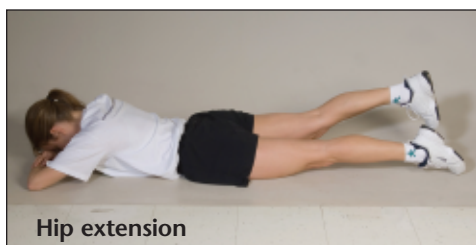
### Lunge

- Step your left foot in front of your right foot.
- Look straight ahead, keep your shoulders back.
- Slowly lower your body weight down by bending your right knee.
- Let your right heel lift off the ground.
- Keep the knee of your left leg over your ankle; if you cannot see your toes, shift your body weight back or move your legs farther apart.
- Focus on your front foot during the exercise. Keep your weight in the heel of your left foot.
- Do 8-12 in a row.
- Repeat with the other leg.

## HIPS

### Hip extension

- Lie on your stomach with your arms folded and your head down resting on your arms.
- Keep your head in line with your spine.
- Slowly raise your left leg, keeping your right leg on the floor. Pause, then slowly return to starting position.
- Do not arch your back.
- Do 8-12 in a row.
- Repeat with the opposite leg.



Hip extension

### Standing straight leg extension

- Stand with weight on your left foot, keeping knee slightly bent, your right foot flexed and in front.
- Use a wall or chair for balance.
- Slowly lift your right foot, pause and return to the starting position.
- Do 8-12 in a row.
- Repeat with the opposite leg.

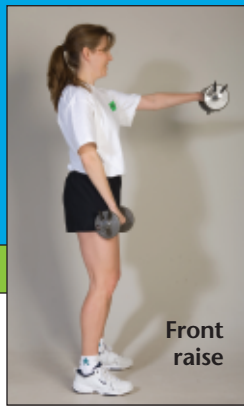
## THIGHS

### Outer thigh lift

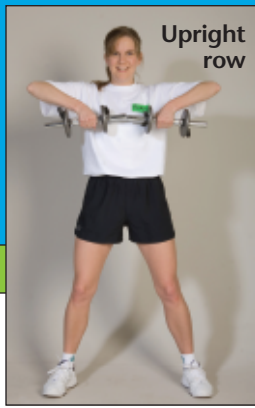
- Lie on your right side. Extend your right arm and rest your head on your arm.
- Keep your neck in line with the rest of the spine.
- Tighten your abdominal muscles so that you do not roll forward or backward.
- Lift your left leg, keeping your foot flexed and knee slightly bent.
- Keep your hips in line; do not turn your hip out. (Hint: if you are lifting your left leg high, your hip is turning out.)
- Pause, then slowly return to the starting position.
- Do 8-12 in a row.
- Repeat with the other leg.

### Inner thigh lift

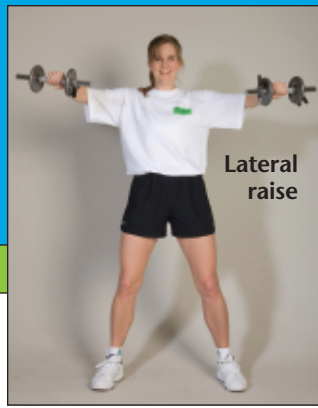
- Lie on your right side, arm extended, resting your head on your arm.
- Keep your neck in line with the rest of the spine.
- Tighten your abdominal muscles so that you do not roll forward or backward while doing this exercise.
- Straighten your right lower leg.
- Cross your left leg over the right leg and place your foot on the floor.
- Flex your right foot and slowly lift the right leg; pause and then return the leg to the starting position.
- Do 8-12 in a row.
- Repeat with the other leg.



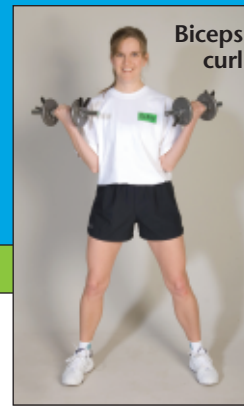
Front raise



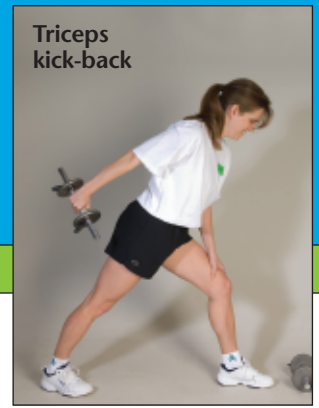
Upright row



Lateral raise



Biceps curl



Triceps kick-back

## SHOULDERS

### Front raise

- Stand with your feet shoulder-width apart, palms facing toward your thighs.
- Using your shoulders, keeping elbows slightly bent, slowly lift your left weight until your arm is parallel to the floor.
- Pause, then slowly return to the starting position.
- Keep your wrist straight throughout the entire motion.
- Do 8-12 and repeat with the opposite arm.

### Upright row

- Stand with your feet shoulder-width apart, knees slightly bent, palms facing your thighs.
- Using your shoulders, slowly raise your elbows until your palms are at chest level.
- Pause and then slowly lower your arms to the starting position.
- Keep your wrists straight throughout the entire motion.
- Do 8-12 in a row.

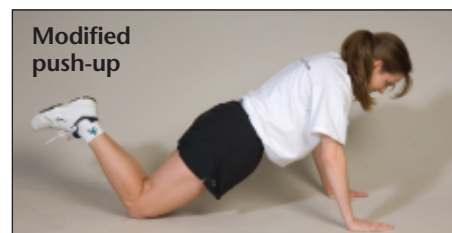
### Lateral raise

- Stand with your feet shoulder-width apart, knees slightly bent, palms facing in.
- Using your shoulders, slowly raise your arms to the side until they are parallel to the ground, keeping elbows slightly bent.
- Pause and then slowly lower your arms to the starting position.
- Keep your wrists straight.
- Keep your upper body straight; avoid rocking.
- Do 8-12 in a row.

## CHEST

### Modified push-up

- Place your hands on the floor, shoulder-width apart, finger tips facing forward.
- Keep your head, neck and spine in line.
- Bend your knees.
- Slowly lower down to the floor, to the point right before your nose touches the floor.
- Pause and slowly lift your body weight back up to the starting position.
- Do 8-12 in a row.



Modified push-up

## ARMS

### Biceps curl

- Stand with your feet shoulder-width apart.
- Keep your knees slightly bent.
- If you are using hand weights, do not grip the weights tightly.
- Place your arms at your side, with palms facing up.
- Bend your elbows and slowly lift the weight, keeping your upper arms next to your body.
- Focus on using your bicep, the muscle in the front of the upper arm.
- Pause, then slowly return to the starting position.
- Do 8-12 in a row.

### Triceps kick-back

- Place one leg behind you.
- Use your front leg for balance.
- Lean forward to about a 45-degree angle.
- Hold up the arm you are working, palm turned in.
- Slowly straighten the arm behind you, until your arm is almost straight, keeping a slight bend in the elbow.
- Pause, then slowly bend your arm, returning to the starting position.
- Only your forearm should move during this exercise; keep your shoulders relaxed.
- Do 8-12 in a row and repeat on the opposite side.



Rear fly



Abdominal crunch



Oblique crunch

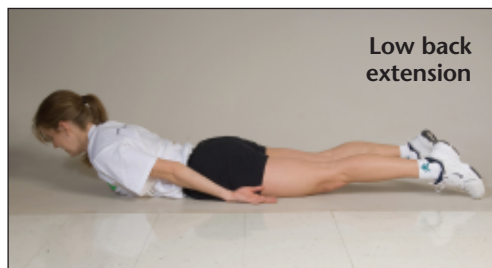
## BACK

### Rear fly

- Sit on chair; lean forward slightly.
- Begin with your arms to the side, palms in, slight bend in elbows.
- Pull your shoulder blades back and together.
- Pause and slowly return to the starting position.
- Keep the motion in your shoulder blades, not the arms.
- Keep in mind, this is a small movement.
- Do 8-12 in a row.

### Low back extension

- Lie on your stomach, arms extended behind you at your side so that your hands are at your hips.
- Slowly raise your head and shoulders off the floor.
- Pause and slowly return to the starting position.
- Do 8-12 in a row.



Low back extension

## ABDOMEN

### Abdominal crunch

- Lie on your back, finger tips behind your head, elbows to the side.
- Using your abdominal muscles, slowly lift your head and shoulder blades off the floor.
- Pause and slowly lower back down to the floor until your shoulder blades touch the ground.
- Do 8-12 in a row.
- Do not lace your fingers behind your head.

### Oblique crunch

- Lie on your back, finger tips of your left hand behind your head, left elbow to the side, right arm extended out to the side on the floor.
- Cross your right leg over the left leg, keeping the left foot flat on the floor.
- Using your abdominal muscles, slowly lift your head and left shoulder toward the right knee and pause. Slowly return until your shoulder blade touches the floor.
- Do 8-12 in a row, and repeat on the opposite side.
- Avoid putting pressure on your neck; do not lace your fingers behind your head.
- Start and stop when your shoulder blades touch the ground.