



GETTING STARTED WITH RESISTANCE TRAINING

Resistance training helps with weight management by building more muscle tissue, which burns more calories at rest than fat tissue. Resistance training also helps to maintain muscle mass that would otherwise be lost with age and inactivity. This makes it easier to perform many daily tasks (e.g. carrying groceries, snow shoveling, etc.) throughout life. In addition, resistance training helps to build strong bones and prevent osteoporosis.

The American College of Sports Medicine (ACSM) recommends performing:

- at least one set (8-12 repetitions)
- of 8-10 exercises that work all the major muscle groups
- 2-3 days per week (You should not do resistance exercises for the same muscle groups on consecutive days.)

Free weights (e.g. dumbbells, barbells), machines, elastic bands, or one's own body weight (e.g. push ups) can be used to create resistance. You should choose a form of resistance training you are comfortable using.

For the first 4 to 6 weeks of resistance training, choose weights or resistance levels that allow you to complete 12-15 repetitions of an exercise with minimal fatigue. During this time, your muscles will be adapting to resistance training; a lot of resistance is not necessary for these early adaptations to occur. Lifting too much too soon will make you quite sore, increasing the time you need for recovery between workouts and slowing your progress.

After 4 to 6 weeks, you can increase the level of resistance. Select a weight or resistance level at which you feel fatigue after 8-12 repetitions. If you cannot perform 8 repetitions of an exercise, the resistance is too great and should be decreased. If you can easily perform more than 12 repetitions, the resistance is probably not adequate and needs to be increased. Adequate resistance is necessary to enhance muscular fitness and improve body composition.

The following muscle groups should be targeted in any resistance training program:

- Chest (pectorals)
- Upper and middle back (trapezius and latissimus dorsi)
- Shoulders (deltoids)
- Front of arm (biceps)
- Back of arm (triceps)
- Back (erector spinae)
- Abdominals (rectus abdominus, obliques)
- Front of thigh (quadriceps)
- Back of thigh (hamstrings)
- Calves (gastrocnemius)

The following are examples of exercises that could be used to work the different muscle groups that should be targeted in a basic weight training program. These are just examples; there are many other exercises that can be used to work these same muscle groups. Video clips of how to properly perform exercises can be viewed on the Web site www.exrx.net. (Click on the "exercise and muscle directory" link on the site's home page.)

Chest

- Push-ups OR
- Bench press with barbell or dumbbells

Upper and middle back

- Bent-over dumbbell row
 - Works trapezius, latissimus dorsi, rhomboids, rotator cuff muscles, and posterior deltoid

Shoulders

- Lateral (middle) deltoid
 - Upright rows with barbell OR
 - Lateral raises with dumbbells
 - *If you are only going to do one exercise for the shoulders, it is best to pick one that targets the middle (lateral) deltoid.* Chest exercises also work the front (anterior) deltoid. Many exercises for the upper back also target the rear (posterior) deltoid.
- Anterior (front) deltoid
 - Overhead press with dumbbells or barbell OR
 - Front raise with dumbbell or barbells
- Posterior (rear) deltoid
 - Rear deltoid row with dumbbells OR
 - Seated rear lateral raise with dumbbells
 - These exercises are good choices because the back is supported. Exercises in which the back is unsupported (e.g. standing rear lateral raise with dumbbells or standing rear delt row with a barbell) are not recommended generally.

Front of arm (bicep)

- Dumbbell or barbell curl

Back of arm (triceps)

- Triceps extension with dumbbell or barbell OR
- Bench dips
 - This also works some shoulder, chest, and back muscles.

Back

- Back extension (with or without added weight)
 - Works the erector spinae
 - Also works the hamstrings and gluteus maximus

Abdominals

- Crunch (with or without weight or an incline)
 - Works middle abdominals (rectus abdominus)
- Twisting crunch (with or without weight or incline)
 - Works side abdominals (obliques)

Front of thigh (quadriceps)

- Squats with dumbbells or barbells or sled OR
- Lunges with dumbbells or barbell OR
 - The above exercises also work the buttocks (gluteus maximus) and inner thigh (adductor magnus)
- Leg extension machine

Back of thigh (hamstring)

- Standing leg curl with elastic band OR
- Seated or lying leg curl machine

Calves (gastrocnemius)

- Standing calf raise with barbell OR
- Calf raise or calf press with sled

Again, there are many other exercises that work these muscle groups. For other options see the exercise directory at www.exrx.net. Periodically changing the exercise you use to target muscle groups provides slightly different stimulus for your muscles and can enhance muscular fitness.

You may choose to add exercises to target additional muscle groups in order to personalize your workout. For example, working the shins (tibialis anterior) with reverse calf raises may help to prevent shin splints in some runners.

To learn more about resistance training, attend a group fitness class focusing on resistance training or schedule a session with a personal trainer. For information about group fitness classes and personal training visit the Recreational Sports Web site www.recsports.osu.edu.