

## Women and Weight Training

Just ten years ago, it was rare to see women in the weight room pumping iron along side the men. These days, however, there is an increasing number of women weight lifting. Not only are the young and fit lifting weights, it is not uncommon to see older or less fit women lifting as well.

So why the sudden interest in muscle building? For one, research supporting the health benefits of resistance training continues to pile up. Studies show that moderate to high intensity weight training just two to three days a week can improve strength and endurance, reduce body fat, increase bone mineral density (BMD), lower bad and increase good cholesterol, improve cardiovascular function, and boost metabolism. For women trying to lose weight, a regular resistance training program incorporated into an overall exercise program can help maintain lean body mass, so fat is lost instead of muscle, and boost resting metabolic rate. For older women (typically age 60 to 75), a regular resistance training program can help with daily activities such as carrying groceries, as well as reduce abdominal fat, increase BMD and walking speed, and significantly improve psychological well-being.

### Program Development

If you are a sedentary individual and are just starting a resistance-training program, you can expect a 25 to 30 percent increase in strength over six months of resistance training. For healthy individuals under age 60, performing eight to ten different exercises (that train major muscle groups) two to three days a week is a good place to start. One to two sets of eight to twelve repetitions per exercise is recommended, and as you get stronger, first increase the number of repetitions, then the weight. If you are a cardiac patient or are over age sixty, get your doctor's approval first. To avoid injury, start with less weight and perform only one set. As your comfort level improves, increase the repetitions to ten to fifteen before increasing the weight.

### Maximizing the Effectiveness of your Workout

Whether you are an avid group exercise class participant, enjoy the camaraderie of exercising with a couple of friends, or go it alone, it is important to find a format you like and will stick with. Once you find a format that works for you, there are a few basic weight-training principles that are important for maximizing the effectiveness of your workout:

- *Overload Principle* – The idea behind the *overload* principle is that to increase a muscle's strength, you must stress the muscle beyond what it is normally accustomed to. This means that if you want to see results, you have to continually stress your muscles by increasing the number of sets, the number of repetitions, the load being lifted, and/or the frequency of your workouts
- *Use it or Lose it Principle* – The *use it or lose it principle* is just that – if you don't use your muscles, they will become detrained.
- *Specificity Principle* – *Specificity* of training refers to the type of exercise performed. The idea behind specificity training is that if you want to improve strength or endurance of a specific muscle, you must train that muscle specifically for that purpose. For example, if you want to increase your bicep muscle endurance, you must perform endurance exercises for your bicep (i.e., high reps, relatively low weight), or if you want to improve your quadriceps strength, you should do quadriceps exercises using fewer reps and higher weight.

### Safety Considerations

To reduce the risk of injury and prevent soreness, it is important to include an adequate warm-up and cool-down routine, maintain proper body alignment, practice proper exercise and breathing techniques, progress at an appropriate rate for your fitness level, and include at least 48 hours of rest between workouts.

The knees and low back are especially susceptible to injury, so take precautions to prevent injuring these areas. If you have a pre-existing knee injury or are susceptible to knee injuries, limit your knee flexion during lower body exercises such as squats and lunges. Always perform lower body exercises in a

controlled manner and for squats and lunges in particular, keep the knees aligned with and do not extend beyond the toes.

To protect the low back, perform exercises with weights as close to the body as possible. One way to do this is to use weight machines instead of free weights, as weight machines typically require less skill and provide greater support for the lower back. Strengthening the abdominal muscles also provides low back support. When performing abdominal curls, 30 to 45 degrees of spine flexion is enough to improve strength. Any more than that and you start to engage the hip flexor muscles. For abdominal exercises performed while lying on your back, keep your pelvis in a neutral position and low back on the floor. If you have any pain in your low back, stop immediately.

For upper body exercises performed in a standing position, keep your rib cage lifted, abdominals contracted, knees relaxed, and pelvis in a neutral position. Exercise in a controlled manner (i.e., without using momentum) and over a full range of motion without hyperextending your joints.

Breathing technique is also important when lifting weights. If you hold your breath during strenuous exercise, you can limit blood flow to the heart and brain which can make you dizzy or even cause you to faint. Also avoid hyperventilating or breathing too hard. Keep your breathing as natural as possible and practice exhaling during the exertion phase of the exercise.

Before beginning any new weight-training program, however, it is recommended that you get a check-up or clearance from your physician.

## **Resistance Training During Pregnancy**

If you are pregnant, it is crucial that you get clearance from your doctor before starting a weight-training program. Assuming you have been given the okay and you don't have any adverse maternal or perinatal risk factors, the American College of Obstetrics and Gynecology recommends taking the following precautions for exercising during pregnancy.

- Avoid exercising lying on your back after the first trimester.
- Be aware of loss of balance – use a spotter or weight machines (only if proper fit can be maintained)
- Avoid prolonged periods of motionless standing
- Exercise to fatigue but not exhaustion
- Avoid situations involving the potential for even mild abdominal trauma

## **Conclusions**

If you feel as though you are “stuck in a rut,” then resistance training can be a much needed change to your workout program, or help you move to the next level. Keep in mind that you don't have to become a body builder or even strive to look like one to reap the benefits of a regular, well-designed resistance-training program. To increase your workout effectiveness, keep a log of the weight lifted, reps, and sets. Most importantly, remember to move at your own pace and keep it fun!