



Creating Health & Nutrition

Ins and Outs of Weight Training

What Is Strength and Weight Training?

Strength training is the act of participating in exercises that use resistance to cause muscles to contract. This activity results in increased strength and exercise endurance, and can increase the size of skeletal muscles. Weight training is a type of strength training that generally refers to the muscles moving against some type of opposing force provided by equipment or body weight.

Participating in weight training with proper technique and on a regular basis can provide many beneficial outcomes that affect not only your health but your everyday well-being.

What Are My Muscles Doing When I Lift Weights?

When you lift a weight, your muscles contract. There are two types of

muscle contractions: concentric and eccentric. A concentric muscle contraction is when the muscle shortens and generates a force greater than that of the weight. By producing a greater force than the weight, this enables you to lift the weight. If the concentric muscle contraction does not produce enough force, you will not be able to lift the weight. Lifting a weight in your hand and pulling it up toward your shoulder (for example, doing an arm curl) causes a concentric contraction in your bicep.

The opposite occurs during an eccentric contraction. Due to a force stronger than the muscle can produce, the muscle lengthens. An example of this is when you are lowering the weight during an arm curl by slowly straightening your arm and bringing the weight away from your

shoulder and back down toward your side. This is an eccentric contraction of the bicep.

When you lift weights, your muscles work together, and concentric and eccentric muscle contractions happen at the same time. As you lift the weight up toward your shoulder during an arm curl, your bicep muscle shortens (concentric muscle contraction) and your triceps lengthen (eccentric muscle contraction). When you lower the weight away from your shoulder back to your side, your muscles do the opposite: the bicep lengthens (eccentric muscle contraction) and your triceps shorten (concentric muscle contraction).

Weight Training: Not Just for Muscles

While weight training works at improving muscle strength, it also benefits other parts of your body. In fact, weight training has

positive effects on your bones. It has been found that people who are physically active have higher bone mineral density than those who do not participate in exercise. By participating in exercise, your risk of bone density loss decreases. By having higher bone mineral density, your bones are stronger and less likely to fracture or break. Weight training helps your bones because bone is a living tissue and can rebuild itself when stress is placed on it. Lifting weights places stress on your bones, which results in your bones increasing in density in order to support the stress being placed on them.

Weight training also plays a role in brain health. Physical activity helps you maintain a healthy weight and blood pressure, lowers anxiety and stress, lifts moods, and keeps your



heart healthy. All of these aspects contribute to brain health. Another result of weight lifting and exercise is increased blood flow, which improves blood circulation to different regions of your brain. Physical activity can elevate memory performance as well. With improved memory performance comes increased blood flow to the hippocampus, which is a part of the brain responsible for short- and long-term memory along with spatial navigation. The hippocampus is one of the first parts of the brain to be affected by Alzheimer's disease, as memory loss and disorientation are some of the early symptoms.

Benefits of Regular Weight Training

Participating in a regular weight training regimen can provide many benefits:

- Increases muscle strength, tone, and endurance
- Increases bone density, joint strength, and support
- Improves posture, balance, coordination, and mobility
- Reduces risk of injury from everyday activities
- Can help reduce overall blood pressure

Stay Safe While Weight Training: Tips and Techniques for Proper Form

Have you ever heard the saying “lift with your legs, not with your back”? This applies to weight lifting. When picking weights up off the floor or at a lower level, the proper form is to “lift with your legs.” This means instead of bending at the waist to pick up the weights, bend your knees to lower yourself closer to the weights, all while keeping your back straight and abdominal muscles engaged to support your back. Then straighten your legs until you are in a standing position. This decreases the chance of back injury.

Here are some more tips for proper weight training:

- Do not attempt to lift too much weight, as this will also increase your chance of injury. Start at a low weight and work your way up. In order for your muscles to continue to grow stronger, weight must be increased over time. This allows your muscles to gradually strengthen and will yield better results.
- Strength training should be challenging and difficult. You will feel your muscles working, and it should be hard. However, you should

not experience extreme pain. If pain occurs, stop your weight training and assess your form, technique, and overall exercise routine.

- Proper form and posture are key to successful weight training. Keep your spine straight and your abdominal muscles engaged. This approach will help support your back. Do not hyperextend your joints—keep your knees slightly bent and do not extend your arms completely straight.
- Always perform the same exercises and number of repetitions on both the right and left side.
- When wearing ankle weights do not walk any distance more than around your chair or onto a mat to complete your exercises.
- Completing repetitions in a slow, smooth motion helps isolate the targeted muscles, allowing them to gain full benefit from the motion. Speeding through repetitions does not engage your muscles during the motion and relies on momentum instead of muscle strength.
- Do not drop weights quickly when finished with a movement. Instead, lower them slowly to fully engage your muscles.

- Always have a spotter for safety when performing exercises with heavy weights

Source

Cornelissen, V., and R. Fagard. "Effect of resistance training on resting blood pressure: A meta-analysis of randomized controlled trials." *Journal of Hypertension* 23, no. 2 (2005): 251–59. <http://dx.doi.org/10.1097/00004872-200502000-00003>.

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