**Weight Training Exercises - FAQs**

**What are recommended safety precautions?**   
  
Because weight training exercises require you to move mass (and oftentimes heavy mass) around there are several safety precautions you should take in order to avoid getting injuries.   
  
Generally it is often recommended to warm up before engaging in taxing physical activity. This usually takes the form of light physical exercise before moving on to more serious exercises. Furthermore, personal trainers usually recommend that their customers engage in stretching exercises either before or after exercising in weight training.   
  
Engaging in stretching exercises has the benefit of loosening up the muscles as well as adding flexibility and are recommended in an effort to reduce the risk of injuries.   
  
**How to exercise using proper form?**   
  
Because weight training involves moving mass around (which can lead to injuries) and because the objective is to strengthen specific muscle groups it is important to use proper form in order to minimize the risk of the former and to be successful in the latter.   
  
You will use proper form if you use the following guidelines:

* You slowly pick up weights from the floor and slowly replace them using contracted muscles (i.e. you don't drop weights on the floor).
* You perform your motions at a slow pace without using swift movements (i.e. you don't rush through your reps).
* You try to focus the resistance on the muscles being targeted (i.e. you don't cheat by using other muscles).

**How many sets or reps (i.e. repetitions) to use for weight training exercises?**   
  
Because muscles can be developed for different purposes there are different ways to exercise in weight training. Generally you'll want to choose from the following three choices for every weight training exercise you use in your workout routine.   
  
1 - Muscle Size and Power (approx.: 3 sets of 6-8 reps)   
  
As the name implies, the muscle power objective can be pursued if you want to achieve maximum size in your muscles or if you want them to be explosively strong (i.e. very powerful for short bursts at a time). In order to develop muscles this way you'll want to use no more than 3 sets in which no more than 8 reps are used. Muscle size and power is often used for muscles that are prominently displayed on the human figure, such as the pectorals, or the biceps and triceps.   
  
2 - Muscle Strength (approx.: 4 sets of 10-12 reps) \*\* Usually Best option for Basketball players \*\*  
  
The muscle strength objective is pursued when you want your muscles to be effective when a high number of repetitions will be involved, or in other words when you want your muscles to be strong for a continued period of time. You'll want to use approximately 4 sets from which 10-12 reps are performed. The muscle strength objective is often used for muscles located in your back and your abdominals.   
  
3 - Muscle Endurance (approx.: 4 sets of 16-20 reps)   
  
The muscle endurance objective is pursued when you want your muscles to be able to perform the same motions over an extended period of time or in other words when you want your muscles to be strong and not become tired rapidly. You'll want to use at least 4 sets from which at least 16 repetitions are performed. The muscle endurance objective is often used for muscles in your lower body, such as those located in your legs or your buttocks.   
  
**How much weight to use for any given weight training exercise?**   
  
Because the distribution of muscle strength is unique to each there is no short answer to this question. A personal trainer simply cannot tell all his/her customers to perform a bench press using 100 pounds because it will be too difficult for some and too easy for others. Rather the idea here is to use the right amount of weight that will make you successful in accomplishing the objective set previously (muscle power, strength or endurance).   
  
For example, say you are pursuing a muscle power objective in which you have decided to perform 3 sets of 8 repetitions each. You'll want to make sure you don't add too much weight so that you are able to perform all 8 repetitions before your muscles are too tired to finish the set. Conversely you'll want to make sure you add enough weight so that you are not simply breezing past the repetitions and finish your sets of plenty of energy still left in the tank. While it may take a few workout sessions to find the right combination, once you'll do it'll be easy to monitor and increase weight as you progress.

Nutrition

When you [exercise](http://www.webmd.com/fitness-exercise/guide/default.htm) hard for 90 minutes or more, especially if you're doing something at high intensity that takes a lot of endurance, you need a [diet](http://www.webmd.com/diet/default.htm) that can help you perform at your peak and recover quickly afterward.

These five guidelines will help.

**1. Load Up on Carbohydrates**

Carbs are an athlete's main fuel. Your body changes them to glucose, a form of sugar, and stores it in your muscles as glycogen.

When you exercise, your body changes glycogen into energy. If you exercise for under 90 minutes, you have enough glycogen in your muscles, even for high-intensity activities. But if your workout is longer than that, use these strategies:

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* "Carbohydrate loading for 3 or 4 days before an event can help top up your glycogen stores,” says sports dietitian Joy Dubost, PhD.
* Eat a diet that gets about 70% of its calories from carbohydrates, including breads, cereals, pasta, fruit, and vegetables, to achieve maximum carbohydrate storage.
* On the day of a big event, eat your last meal 3 to 4 hours before exercising, to give your [stomach](http://www.webmd.com/digestive-disorders/picture-of-the-stomach) time to empty.
* Avoid eating sugary or starchy foods within 30 minutes of starting an activity; they can speed up [dehydration](http://www.webmd.com/a-to-z-guides/dehydration-adults).
* Replenish carbs, minerals, and water during long exercise sessions. Eat a snack and drink fluid every 15 to 20 minutes. Refined carbohydrates (with sugar or flour) pass quickly into the bloodstream, where they fuel working muscles. Many athletes prefer sports bars, sports drinks, or gels, since they're so convenient. But fruit and fruit juice are also excellent choices.
* Reload on carbohydrates after intensive exercise, too. "Since you don't need quick energy, it's best to choose less refined carbohydrates" such as a whole-grain bagel or carrot sticks, which provide both carbohydrates and a rich array of nutrients, Dubost says.

**2. Get Enough Protein, But Not Too Much**

[Protein](http://www.webmd.com/fitness-exercise/guide/good-protein-sources) doesn’t provide a lot of fuel for energy. But you need it to maintain your muscles.

* **Know what you need.** The average person needs 1.2 to 1.4 grams of protein per kilogram of [body weight](http://www.webmd.com/diet/tc/healthy-weight-what-is-a-healthy-weight) a day. That's about 88 grams of protein for a 150-pound person. A strength athlete may need up to 1.7 grams per kilogram of body weight. That's about 150 grams of protein for a 200-pound athlete.
* **Favor foods.** Getting too much protein can put a strain on your [kidneys](http://www.webmd.com/urinary-incontinence-oab/picture-of-the-kidneys). Instead of protein [supplements](http://www.webmd.com/vitamins-and-supplements/lifestyle-guide-11/default.htm), eat high-quality protein, such as lean meats, fish, poultry, nuts, beans, eggs, or milk.
* **Drink up.** "Milk is one of the best foods for recovery after an event, because it provides a good balance of protein and carbohydrates," Dubost says. Milk also has both casein and whey protein. The combination may be particularly helpful for athletes. Research shows that whey protein is absorbed quickly, which can help speed recovery immediately after an event. Casein is digested more slowly, helping to ensure long-term recovery of muscle after a grueling event. Milk also has [calcium](http://www.webmd.com/vitamins-supplements/ingredientmono-781-calcium.aspx?activeingredientid=781&activeingredientname=calcium), which is important for maintaining strong bones.

Plyometrics

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Plyometrics -- also known as jump training -- is a training technique designed to increase muscular power and explosiveness. Originally developed for Olympic athletes, plyometric training has become a popular [workout](http://www.webmd.com/fitness-exercise/guide/default.htm) routine for people of all ages, including children and adolescents.

Plyometric training conditions the body with dynamic resistance exercises that rapidly stretch a muscle (eccentric phase) and then rapidly shorten it (concentric phase). Hopping and jumping exercises, for example, subject the quadriceps to a stretch-shortening cycle that can strengthen these muscles, increase vertical jump, and reduce the force of impact on the joints.

Because plyometric exercises mimic the motions used in sports such as skiing, tennis, football, basketball, volleyball, and boxing, plyometric training often is used to condition professional and amateur adult athletes. But children and adolescents also can benefit from a properly designed and supervised plyometric routine, according to the American College of Sports Medicine.

Plyometric training is associated with many benefits. First popularized in the 1970s by state sports trainers in the former East Germany, it's based on scientific evidence showing that the stretch-shortening cycle prompts the stretch or “myotactic” reflex of muscle and improves the power of muscular contraction.

**Examples of Plyometric Exercises**

Trainers have developed thousands of plyometric exercises. A simple routine for children and adolescents can start with one to three sets of six to 10 repetitions of one upper-body exercise such as a medicine ball chest pass and one lower body exercise such as a double-leg hop on two nonconsecutive days per week.  As muscle strength increases, the routine can be expanded to include multiple medicine ball throws, jumps, and single leg-hops.

Plyometrics routines for qualified adults range from low-intensity double-leg hops to high-intensity drills such as depth jumps, which involve jumping up to and down from boxes or benches as high as 42 inches. High-intensity drills can subject a participant to forces up to seven times his or her body weight.

For sports that require explosive lower-body power, a plyometric routine may start with ground-level jumping on soft surfaces such as padded mats or grass, progress to jumping over cones or foam barriers, and then advance to bounding exercises performed in straight lines and patterns.

**Benefits of Plyometrics**

According to the American Council on Exercise, research studies have shown that plyometric training can lead to improvements in:

* Vertical jump performance
* Muscle strength
* Joint protection