Plyometric Exercise.


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Plyometric Exercise

Ever wonder what gives basketball players their explosive jumping power, or how soccer players get those sudden bursts of speed and agility? For years athletic trainers and *conditioning* coaches have used plyometrics to enhance the performance of competitive athletes. Today the same types of plyometric exercises are being used in group fitness classes, for injury rehabilitation, and by veteran gym goers.

What Is Plyometrics?

Plyometrics is a specialized type of training to increase power, the combination of *strength* and speed in movement. Specifically, plyometrics is characterized as an eccentric (muscle-lengthening) action followed immediately by a concentric (muscle-shortening) action. When a muscle is lengthened, energy is released as heat, but some energy is stored in the muscles to be used in its subsequent contraction. The goal is to decrease the amount of time it takes the muscle to contract in a movement. Again the focus is on time. If the muscle is stretched for too long, useable energy is lost as heat. To illustrate this process, often called the "stretch-shortening cycle," think about crouching into a squat, then immediately jumping into the air, and returning to a squatting position. Now imagine remaining in that squat position for 15 or more seconds and then jumping. Try it and you will see how much higher you jump after a very brief squat compared to waiting even 15 seconds.

A note of caution: Plyometrics is not for everyone, especially not people new to working out. This method of training is very specialized, and it was initially designed for highly conditioned athletes. In fact, if done incorrectly, plyometrics can strain unconditioned muscles and joints. Some fitness professionals argue against "power training" for anyone, saying it promotes injury. Others believe that correctly executed plyometrics can be a great way to improve balance and *strength*. You should talk to your doctor or a fitness professional before incorporating plyometrics into your fitness routine.

If you are a candidate for plyometrics, here are some useful tips:

Always warm up for at least 10 minutes before beginning any *strength* workout.

Be sure you are on a solid and flat surface.

Quality is more important than quantity. Bad form leads to injury.

Begin each exercise slowly to maintain balance and develop good technique.

Once you achieve good form, increase your speed in the movement. The goal of plyometrics is to increase speed and *strength* of your muscle movements.

Plyometric exercises require long rest periods (three minutes or longer) between each set.
Always stretch after your workout.

One to two plyometrics sessions per week should be enough. Allow at least 48 hours for recovery between strength training routines.

Plyometric Exercises

Jumping rope

Jumping rope is considered a low-intensity plyometric exercise. It's great neuromuscular conditioning and works all the major muscles groups, including legs, chest, shoulders, arms, abdominals and back. Try jumping rope in front of a clock with a second hand to keep track of your time. Begin by standing tall with straight legs, but soft knees. Be sure to land on the ball of your foot and lift your feet high enough off the floor to let the rope pass quickly under you. Keep your shoulders relaxed and turn the rope using your wrists.

Begin by doing intervals of jumping and rest. For example, jump for 20 seconds and then recover the following 20 to 30 seconds. Repeat this cycle several times. Gradually increase the amount of time you are jumping, while keeping the rest period about the same. Or you can increase the number of jump-rest cycles.

Plyometric lunges

Begin in a lunge position -- standing upright with your feet facing forward and shoulder-width apart. Step one foot, 2 to 3 feet forward, bending both knees and lowering your upper body until you have a 90-degree bend in your front and back legs. Your back knee should not touch the floor. If your back is not straight and you are leaning forward, do not sink so deeply into the lunge. Keep your front knee pointed over your second toe and directly over your ankle, not beyond your foot. Now the motion: From your beginning lunge position, jump in the air and switch your legs (like a scissor) so you land lunging with the opposite foot forward. Start slow and increase your tempo.

Perform one to three sets, 10 to 20 repetitions per set.

Plyometric squat jump

Begin standing with your feet together. Bend your knees in a squat and then immediately jump as high as you can, raising your arms straight up over your head. Be sure to land with your knees bent crouching back into a squatting position and then immediately jump into the air again.

Perform one to three sets, 10 to 20 repetitions per set.

Plyometric chest pass

If you work out with a partner, the plyometric chest pass can be a great exercise using a medicine ball. Stand facing each other with your feet shoulder width apart. You should be around 7 to 8 feet away from each other. To begin, hold the medicine ball at chest height with elbows pointing out. Pass the ball to your partner, pushing away from your chest. Your arms should be straight at the end of the movement. Your partner repeats the movement, passing the ball back to you. Catch the ball, bending the elbows out and immediately push the ball back pushing away from the chest. The goal is to decrease the catch time. While maintaining good form, pass the ball back and forth as quickly as possible.

Perform one to three sets, 10 to 20 repetitions per set. Remember to rest for at least three minutes between each set.

The Bottom Line

Plyometrics trains your neuromuscular system to carry out quick movements (such as jumping or quickly changing directions) more effectively. You may not be training for the next Olympics, but
with the careful attention to form, plyometrics could be just what you need to boost your fitness to the next level.

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