Faster and Stronger:
Best Plyometrics Exercises for Athletes

I remember the first time I heard about plyometric exercises.

Like a lot of fitness enthusiasts my age, Tony Horton and the P90X plyometrics workout were my introduction to the world of high-impact, high-intensity training.

P90X was released in 2005, and A LOT has changed since then.

Most notably, plyometrics is the norm in most high-intensity workouts. For example, CrossFit is a big fan of plyometrics, especially the Plyo Box Jump and Battle Rope Slams.

Commercial fitness aside, what about plyometrics for athletes?

Do plyometric workouts have a place in the training of a football player, swimmer, or boxer?

Let's take a closer look at plyometric exercises, the benefits of plyometrics for athletes, and the best workouts to start using today.

What are Plyometrics?

Also called jump training, plyometric exercise involves eccentric-focused movements where the goal is to generate maximum force in the shortest amount of time.

Another way to look at plyometric exercise is the deliberate pre-stretching of a muscle followed by the immediate contraction of the same muscle group.

The best example of this is when a person slightly squats before jumping into the air.

The eccentric-focused movement pattern of plyometric exercises is best demonstrated in the three phases of the stretch-shortening cycle: eccentric, amortization, and concentric.

Eccentric

This is the first phase of the stretch-shortening cycle that takes place in plyometric exercises.

During this phase, the muscle is pre-stretched, which allows it to build elastic energy that can be used for the coming movement.

Let's look at the classic Plyo Box Jump as an example.

The first step in the Plyo Box Jump is the slight bending of the knees and hip hinge as the arms come up to chest height.

It's this movement that prepares the body for the exercise by building up elastic or springy energy.

Amortization

The amortization phase is the delay between the first and third phase. The muscle has finished pre-stretching and it is about to use the buildup of elastic energy to move into the accelerated muscle contraction.

It should be noted that you can't stay in this position for too long as you'll have an energy leak and lose out on the elastic energy that you've built up.

Concentric

Now, it's show time. This is when the stored energy is utilized to generate a maximum force in the direction you want to go.

In the case of the Plyo Box Jump, the athlete would jump straight up and on to the box, landing in a squat position.

Why Athletes Should Use Plyometrics

The funny thing is that if you're an athlete, depending on your sport, you've probably been doing some form of plyo for a while.

For example, Plyo Box Jumps are a common exercise for basketball players to improve their vertical jump.

Plyometric workouts offer a variety of benefits for athletes and their respective sports. Here are some proven benefits of plyometric training along with some sports-specific examples.

1. Increased Jump Height and Distance

Studies show that lower-body plyometric exercises can significantly improve both the height and distance of your jump.

One study found that subjects saw the greatest improvement in their vertical jump when plyometric drills were used for no less than 10 weeks. [1]

In other words, the longer you incorporate plyometric exercise drills, the more you'll improve.

This makes lower-body plyometric workouts invaluable for basketball players, volleyball players, etc.

2. Increased Strength

When plyometric exercises are incorporated into a resistance training program, strength levels skyrocket.

One meta-analysis of 15 studies concluded that plyometric exercises help to increase strength levels in all subjects, regardless of fitness experience.

What's more, researchers point out that optimal results come from using a variety of training methods, not just one. This means that plyometric exercises are an ideal complement to many fitness programs. [2]

This boost in strength will be helpful across the board for athletes, regardless of the sport.

3. Improved Speed, Agility, and Quickness (SAQ)

Athletes aren't strangers to speed, agility, and quickness (SAQ) drills. From cone drills to ladder drills, athletes in almost every sport have run through a series of these exercises.

It should come as no surprise that plyometric exercises improve your performance during SAQ drills. In fact, when you get to see the plyometric workouts below, you might feel that they are oddly familiar to some of your sports training.

Studies show that plyo workouts activate the fast-twitch muscle fibers required for faster muscular contractions. One study found that plyometric drills helped to dramatically increase sprinting speed. [3]

4. Increased Power

Power is the combination of strength with speed. Plyometric exercises have been shown to increase both speed and strength, so it follows that these exercises also improve power.

Power is as useful in football as it is in boxing. From defensive actions on the field to punching power in the ring, athletes require raw power and plyometric training can help you build more of it.

One study, in particular, found that plyometrics were especially helpful for improving counter movement jumps and depth jumps. [4]

But what about the upper body strength and power?

Another study focused on what would happen if female handball players performed plyometric drills for 10 weeks.

The result?

Researchers found that the athletes showed significant improvements in handgrip force, back extensor strength. and medicine ball throwing. They also noted that reaction times had shortened, implying speed was also positively impacted. [5]

5. Increased Bone Density

Bone density is one of the biggest concerns for an aging population. Studies show that over time, bone density naturally decreases.

However, one of the best ways to slow down and potentially reverse bone density loss is with plyometric exercises.

Plyo movements are high impact, which have been shown to promote bone mass growth. [6]

Best Plyometrics Exercises for Athletes

Ready to start adding some plyometric exercises into your weekly training program? Here are the best plyometrics exercises for both the lower and upper body.

Lower Body Plyometric Exercises

- Plyo Box Jump
- Lateral Jumps
- Plyo Lunges
- Depth Jump
- Band Resisted Broad Jump
- Band Resisted Lateral Jump

Upper Body Plyometric Exercises

- Plyo Push-Up
- Overhead Throw
- Overhead Slam
- Lateral Wall Throw
- Medicine Ball Chest Pass
- Wall Ball Squats

Plyometrics Workouts for Athletes

You can use these workouts to complement your current program, in place of your current cardio workout, or as a standalone.

I'll provide you with different acute variables based on your experience level.

Beginner Plyometric Workout

A beginner-level workout will focus on technique and execution, especially during the landing portion of the exercise.

You'll want to hold the landing position for a couple of seconds before returning to the starting or eccentric position.

In other words, once you land or reach the end of the concentric position, hold yourself there for two seconds before the next repetition.

- Plyo Box Jump: 2 to 3 sets of 6 to 10 repetitions
- Depth Jump: 2-3 x 4-8
- Plyo Push-Up: 2-3 x 6-10
- Overhead Throw: 2-3 x 6-10

Intermediate Plyometric Workout

As you move into the next level of plyometric workouts, the focus begins to shift toward incorporating new planes of motion, mainly rotational movements.

Again, form and execution are just as important, but now rotational movements add a new degree of difficulty.

- Lateral Jumps: 2 to 3 sets of 6 to 10 repetitions
- Plyo Lunges: 2-3 x 4-10
- Lateral Wall Ball Throw: 2-3 x 4-10
- Medicine Ball Chest Pass: 2-3 x 6-12

Advanced Plyometric Workout

When you are ready to tackle advanced-level plyometric workouts, you can expect to incorporate all planes of motion at high speed and high intensity.

Never forget your foundational workouts as the basics will be essential at this stage of the game. Go hard but stay smart.

- Band Resisted Broad Jump: 2 to 3 sets of 6 to 12 repetitions
- Band Resisted Lateral Jump: 2-3 x 6-12
- Lateral Wall Ball Squats: 2-3 x 6-12
- Overhead Slam: 2-3 x 6-12

Staying Safe and Injury-Free with Plyometrics

Despite the benefits of plyometrics, it's essential to take the necessary precautions.

Don't forget that plyometric training is a high-impact form of exercise; it's also high intensity. While plyometric exercise can improve the health of the ankle and knees, if you are not yet recovered from an injury or surgery, they can make your issue much worse.

That means if you have prior issues with any of your joints, especially your ankles, knees, and feet, you should have a chat with your physical therapist, doctor, and coach before beginning any type of plyometrics-focused workout.

References

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