

SPEED POWER & PLYOMETRICS (Latif Thomas) (Graphics & some minor changes added)

Today we need to address how to develop the explosive power of your athletes by using plyometrics.

Now, plyos are one of those touchy subjects that some people don't have a very good understanding of.

So, the first thing we have to do is get a working definition of what plyos actually are. Otherwise, we can't be sure we're doing them correctly, if at all.

Plyometrics are defined as movements that cause a rapid change from eccentric contraction (lengthening a muscle) to concentric contraction (shortening a muscle).

In fact, the very act of running fast is a plyometric activity, as it trains for the storage and release of elastic energy. And, elastic energy is required for faster running.

You can develop the ability to store and release this elastic energy by having your athletes engage in a variety of activities such as hopping and bounding drills, box jumps, hurdle hops, medicine ball throws, etc.

But there's a catch. These movements require a healthy degree of strength, coordination and balance.

My point? You can't just decide that tomorrow you want to do hurdle hops or single leg bounds with your athletes.

Plyometrics are a **SKILL** that take a great deal of practice if your expectation is that athletes are going to do them correctly and actually get something out of it.

OK, it's story time...

Last year I was at an area high school gymnasium helping a friend of mine while he conducted practice for the team that he coached.

On the far end of this gymnasium a football team was lined up in front of a row of 8 plyo boxes that were of various heights between 24" - 48".

So I decided to watch, hoping that I was going to see an impressive display of athleticism brought about by some coaches who had taken the time and effort to learn how and why certain activities are performed before having their athletes perform them.

Well it turns out that my wish went unfulfilled.

These athletes started doing their box jumps (jumping up onto the box), then went right into depth jumps (dropping down off of the box) trying to negotiate 8 boxes of different heights.

So, like clockwork, the line of kids began to lose focus. Their form, which was already terrible, began to fall apart.

Then it happened.

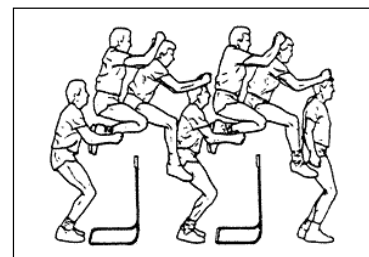
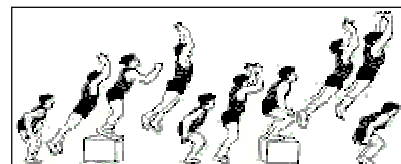
One young athlete, during a depth jump, landed awkwardly and began to fall forward. But instead of stopping or bailing out of the drill, he tried to jump up onto the next box.

For a number of reasons, that didn't work. He clipped the front of his foot on the box, fell over the box and landed on the floor in a heap, clutching his leg.

The result?

The kid broke his ankle in three places.

Needless to say it wasn't pretty.



Hurdle Heights ..
coach/athlete consultation
50 contacts (**max.**) e.g. 6-10 sets of 5
(1-2 min. recovery between sets)
Spot the Landing .. land stable, feet
flat on ground, knees bent (90°),
back straight;
bound on coach command
Knees to chest, NOT chest to knees.

Choose achievable heights

Variations

Pre-Jump; Explosive; Laterals
Foam / Cardboard / Plastic ..
construct, improvise.

So let's get into how to effectively introduce plyometric training in a way that will result in positive growth in the area of strength, power, co-ordination, body awareness and, of course, speed...

The underlying principle behind teaching plyos is simple.

Start with simple movements and progress to more complex movements ONLY when athletes have mastered the basic ones.

With my teams and groups, I let athletes 'graduate' to the next drill in our progression once they meet the criteria required for advancement. In fact, athletes get pretty intense when it comes to 'graduation'. They all want to be the first to move on, but more importantly they don't want to be the last.

So using 'graduation' as a reward is a great way to get athletes to focus on the task at hand.

Remember, only do plyos on your speed days. They tax the same energy system as speed work and the weight room. So don't have your athletes do explosive plyos on your recovery days.

Here are the principles to follow when doing your plyos:

STEP 1: Start with basic stabilization exercises that begin and end using both feet.

Athletes must learn to control movements off of both feet before advancing to the more demanding drills.

Additionally, be sure to keep the number of ground contacts (total number of times the feet hit the ground) low until athletes learn to handle the increased load.

STEP 2: Emphasize soft landings.

When doing plyos, athletes must learn to land softly. Cue them to absorb each landing with the muscles in the legs, not with joints, bones, ligaments and tendons.

Each foot strike or impact should make a minimal amount of noise. Athletes can't graduate to the more 'fun' drills until they can learn to land softly.

If you cave in and let them graduate early, before they have acquired the necessary skills, then their ability to learn the new drills and avoid injury will be greatly reduced.

Here are some tell-tale signs that athletes are not performing the drills correctly:

- * Loud slapping sound with the feet upon landing
- * Landing on the balls of the feet, with the weight forward and heels off the ground
- * Taking off with one foot instead of both feet
- * Landing on one foot instead of both feet
- * Inability to maintain/loss of balance upon landing

Once basic drills are mastered, and these common mistakes have been eliminated, athletes can start the bounding drills that people traditionally equate with plyometric training.

STEP 3: Use medicine balls

When athletes have a tough time with 'regular' plyos, I'll often back off and use medicine ball throws.

This will teach them many of the same explosive elements, but can be easier to master the movements. It also takes some of the pressure off of trying to succeed in the more difficult drills.

Of course, I use medicine ball throws for the more skilled athletes as well. As always, make sure that athletes are doing the drills with perfect form.

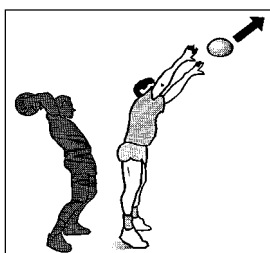
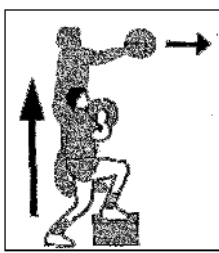
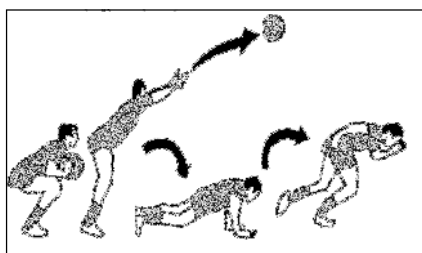
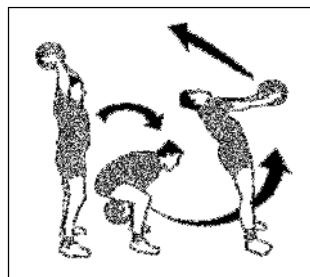
The main flaw that I see with these drills is that athletes will throw the ball with their arms. The arms are a guide for the weight and shouldn't be the primary mover.

Progress Patiently
Pool Jumps for young athletes

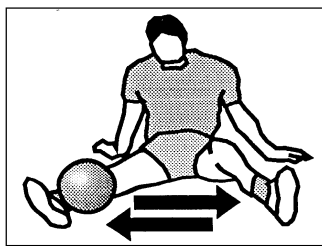
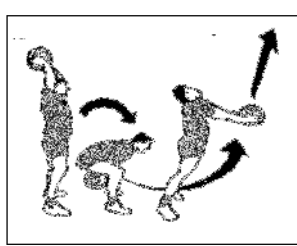
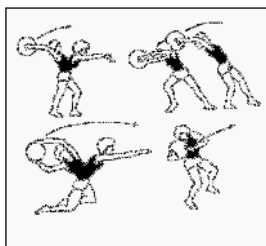


Pool Jumps (Bounds) are excellent for developing basic strength and co-ordination. Pool Bounds—the resistance decreases as the athlete bounds.

Sample Medicine Ball Throws



There are many more throws, and some excellent demonstration DVD's.



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Plyometric workouts require careful planning and close attention