

Plyometrics help develop children's muscles

Last month I wrote about the benefits of strength training for young athletes. Based on the article, many people asked me expanded questions regarding young athletes and plyometrics training. In checking for pertinent information, I found an excellent article on plyometric training for children. The article was written by Don Chu, an internationally renowned strength and conditioning professional and physical therapist; Avery Falgenbaum, an associate professor at the College of New Jersey; and Jeff Falkel, a physical therapist and strength and conditioning coach. Some of the following information is paraphrased and some is verbatim from the article.

In the past decade, more and more attention has been drawn to the focus of adolescent development to become stronger, quicker and faster. More recently, the benefits of plyometric training – dynamic resistance exercises that link strength with speed of movement to produce power – for boys and girls has received increased attention.

Plyometric training is appropriate for children under the age of 12. Unfortunately, some people have a very narrow view of plyometric training and only associate depth jumps from a 32-inch box or jumping high hurdles as plyometric. While these high intensity drills may be appropriate for highly trained adult athletes, there are literally hundreds of other plyometric exercises, including low

intensity skips, jumps and throws with lightweight medicine balls (1 to 2 kilograms), which can be part of a child's plyometric training program. Even common playground activities such as jumping jacks and hopscotch are considered plyometric.

It is not necessary to have a strength-training program before a plyometric training program. While it may be beneficial for sedentary children to develop an adequate base of strength before participating in a plyometric training program, it is simple just to begin with low intensity plyometric training drills and gradually progress to higher intensity drills over time. Moreover, the notion that children (and adults) should be able

to back squat more than 1.5 times their body weight before participating in a progressive plyometric training program has not been supported by research and is an unreasonable recommendation for children.

Along with other types of conditioning, regular participation in plyometric programs offers observable health and fitness values to children. Plyometric training can increase muscle power, enhance speed and improve overall athleticism. Participation in a plyometric training program may also strengthen bones and facilitate weight control. Furthermore, plyometric training performed during the pre-season may improve the preparedness of aspiring athletes for the demands of sports practice and competition and thereby decrease the risk of sports-related injuries. This may be of particular benefit to female athletes, who appear to be at increased



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risk for knee injuries as compared to male athletes.

Childhood may actually be the ideal time to implement some type of plyometric training into a child's training because the so-called "skill-hungry" years for learning motor skills occur during childhood. As such, the nervous system of children is primed to learn motor skills that involve jumping, hopping, skipping, running and throwing.

If this window of opportunity is missed, a child who does not participate in this type of activity may not be able to catch up later in life. It is not surprising that many of the best athletes in the world learn how to perform complex skills during childhood and adolescence.

Although there is no minimum age for participating in youth plyometric training, children should have the emotional maturity to accept and follow directions and should appreciate the benefits and concerns associated with his mode of exercise. If a child is participating in some type of sport activity, then he or she may be ready

to participate in a plyometric training program. While the long-term goals for youth and adult plyometric training may be the same (i.e., performance enhancement and injury reduction), the focus of youth programs should be skill development and having fun.

Beginning with a single set of six to 10 repetitions on several upper and lower body exercises twice per week on non-consecutive days is sufficient. Prescribing a training intensity and frequency that exceeds a child's capacity is setting up the child for potential injury. For example, relatively easy drills such as double leg jumps and lightweight medicine ball exercises should be gradually progressed to lateral hops and single leg jumps as exercise technique and confidence improve.

Once children adapt to single-set training, they can perform multiple sets, provided that adequate recovery between sets and exercises is allowed. Rest periods longer than three minutes promote boredom and horseplay. Therefore, account for short attention spans and keep rest periods around 1 to 2 minutes between sets.

Currently, I have the privilege to warm up and provide speed and agility concepts to the peewee football team. By applying drills that mimic normal play activities helps foster their development to better understand the concept of "why" they need to move faster, which will transcend to faster development during growth spurts and performing better in young adult sport activities.

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