Routledge
Taylor & Francis Group

Journal of Physical Education, Recreation & Dance

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/ujrd20

Teaching Plyometric Soccer Drills to Children

Ferman Konukman, Murat Erdogan, Ertan Tüfekçioglu, Hayrettin Gümüşdag & İlker Yılmaz

To cite this article: Ferman Konukman, Murat Erdogan, Ertan Tüfekçioglu, Hayrettin Gümüşdag & İlker Yılmaz (2022) Teaching Plyometric Soccer Drills to Children, Journal of Physical Education, Recreation & Dance, 93:1, 55-57, DOI: 10.1080/07303084.2022.2006011

To link to this article: https://doi.org/10.1080/07303084.2022.2006011

Published online: 18 Feb 2022.

Teaching Plyometric Soccer Drills to Children

Ferman Konukman
Murat Erdogan
Ertan Tüfekçioglu
Hayrettin Gümüşdag
İlker Yılmaz

Soccer is a tactical game that requires many physical skills during the game, including agility, speed, explosive power and coordination. Players should practice these skills during training with and without the ball to improve their individual skills. The nature of soccer requires quick explosive movements with coordination and speed. Plyometric training stimulates a muscle to reach maximal force in a short time. *Plyometric* is a Greek term that has two meanings: *plio* = more; *metric* = to measure (Potach & Chu, 2000). This kind of muscle training leads to muscular force production and performance improvement. Many soccer-specific movements involve high-velocity concentric and eccentric muscular contractions involving the stretch-shortening cycle. In this regard, plyometric training is known to improve stretch-shortening cycle function and soccer performance. Therefore, plyometric training provides many benefits to soccer players. For example, players can leap and jump higher with quick dribbling skills and add more explosiveness to their shots.

One of the advantages of plyometric training is providing both variability and overload to a training program. Plyometric training provides a good combination of drills between resistance and speed training. Higher levels of speed and strength, quickness and agility, lower-body power and the rate of force development are crucial in soccer. Plyometric training has been widely accepted for development of speed and power that is essential for soccer (Konukman et al., 2018). Developmentally appropriate plyometric drills should be integrated into soccer practices with and without the ball and they should be very similar to the nature of a soccer game. Plyometrics mainly as jump training should be practiced on soft surfaces such as grass, dirt and turf for injury prevention and to minimize impact stress. The critical approach for the conditioning programs is specificity. Therefore, the main purpose of this article is to provide practical and developmentally appropriate examples of plyometric soccer drills for children.

Program Design

According to Blazevich and Jenkins (2002), two important factors should be considered very carefully before any plyometric training for young athletes. First, plyometric training should not be started immediately at the beginning of season. A 4- to 5-week period of pretraining emphasizing low impact to moderate running and jumping activities should be organized because this will benefit muscles and bones to strength sufficiently to cope with the real intense training and load during practice. Second, it is very important to have enough flexibility before performing any plyometric training because of the rapid stretching of muscles and tissues. Therefore, flexibility and stretching exercises should be performed before plyometric training drills.

In brief, three important key points for plyometric training are recommended: Proper warm-up activities should be performed before any plyometric training, plyometric training should be performed in the early part of training before fatigue, and plyometric training should not be performed after very high-intensity training. The emphasis should be placed on quality and not quantity. Most important, plyometric training drills should be very similar to soccer drills. Using the framework of Blazevich and Jenkins (2002), examples of plyometric training drills are categorized in three stages:

Stage 1: Low-Impact Workouts. These drills are performed with two legs or arms; two-leg jumps for height and distance, two-leg lateral jumps, and single-leg bounding, are good examples of stage 1 workouts for children. Stage 1 workouts are recommended for ages 7 to 11 years.

Stage 2: Moderate-Impact Workouts. These drills are executed with one leg and have greater prestretch loads, such as single-leg jumps for height and distance, hopping for distance, standing triple jump, and lateral bounding. Stage 2 workouts are recommended for ages 12 to 14.

Stage 3: High-Impact Workouts. These exercises are formation of prestretch loads, such as single-leg bounds onto obstacles, drop jumps off a box for height, drop jumps for distance, and push-up over obstacles. Stage 3 workouts are recommended for ages 15 to 18. A combination of these three stages also can be used as dynamic warm-up or exercise and involves low-, moderate- and high-intensity drills such as hops, skips, lunges and jumps for the lower and upper body (Faigenbaum & McFarland, 2007).

Table 1.
Plyometric Drills for Soccer (the Movements Replicate the Game's Mixture of Vertical and Horizontal Acceleration and the Triple Extension of the Ankle, Knee and Hip Joints)

Plyometric Exercises	Stages	Variation and Demonstrations
Standing jump	1	https://www.youtube.com/watch?v=CpmTk9kmdm8
Running up the stairs	1, 2	Skipping steps
Hopping	1, 2	Side to side, back and forth
Frog hops	2, 3	With and without medicine ball: https://www.youtube.com/watch?v=1ChzU2w5st8
Snowboard hops	1, 2, 3	With and without medicine ball: https://www.youtube.com/watch?v=TreZAMxIIag
Jumps	1, 2, 3	Over a ball, squat and tuck and standing (distance and height), and hurdle, single-leg
Crouch over + quick pass	1, 2, 3	Shoot
Split squat, sprint out	1, 2, 3	Jump in the air, do a leg exchange and push off the back foot
Ball taps series	1, 2, 3	Countless variety: https://www.youtube.com/watch?v=PCFsyvrcNTY
Continuous broad jumps	1, 2, 3	Landing with one leg
Medicine ball chest pass	1, 2, 3	Staggered stance and leaning forward to transfer power up the body and lying supine
Right, right, left bounds	1, 2, 3	https://www.youtube.com/watch?v=BRvmIbaApi8
Double-leg hop	1, 2, 3	Controlled landing
Bounding up stairs	1, 2, 3	Combination with hops and holds
Jumping up the stairs	2, 3	One-footed, diagonal, lateral side both ways: https://www.youtube.com/watch?v=V_gAXonP8aw
Press jacks (using medicine ball)	2, 3	https://www.youtube.com/watch?v=WhIQ1St4p38
Alternating rotational throw	2, 3	https://www.youtube.com/watch?v=CwWOrdsNr44
Side shuffle with chest pass	2, 3	https://www.youtube.com/watch?v=z3s4epg5nVs
Shuffling over the box	2, 3	https://www.youtube.com/watch?v=JLSJYSKoKP4
Side lunge bench hops	2, 3	https://www.youtube.com/watch?v=qdqFYb66Qfk
Lateral bench hops	2, 3	https://www.youtube.com/watch?v=jvottfTNNBI
Skips	2, 3	Height and distance
Box jumps (one leg and two legs)	2, 3	Height, direction (lateral etc.) and beginning position (kneeling) may vary: https://www.youtube.com/watch?v=WQ-wZrz-PX4
Down jumps/depth jumps	2, 3	Passing immediately after hitting the ground
Jumping lunges (split jumps)	2, 3	One-sided, alternating and with knee tucks on each lunge
Lateral bounds (skater jump)	2, 3	Pause vs. quick repeats
Plyo pull-ups	3	https://www.youtube.com/watch?v=WmpYsJtQxk0
Clapping push-up	3	https://www.youtube.com/watch?v=FRo3b_Pfw3M
Hurdle jumps	2, 3	https://www.youtube.com/watch?v=aQwKvO4yCG4
Ladder drills	1, 2, 3	https://www.youtube.com/watch?v=gf5zr92BBvc
Single-leg deadlift hops	3	https://www.youtube.com/watch?v=-xUAXBOl4K4
Plyo jacks	3	https://www.youtube.com/watch?v=fEYTPez31UA
Alternative trainings	3	Running/jumping, uphill, sand dunes or ankle deep in water (aquatic plyometric), ankle weights or jacket weighted
Plyometric soccer drills with and without ball	1, 2, 3	https://www.youtube.com/watch?v=xyIgoMauDi4 https://www.youtube.com/watch?v=7mO2ybvKTzo https://www.youtube.com/watch?v=RSOx7hilNHo https://www.youtube.com/watch?v=-e0T8kdj45I

In summary, less intensive plyometric exercises such as skipping, hopping and bounding can be performed during stage 1. More demanding exercises such as flying start single-leg hops and depth jumps should be introduced in the next stages to condition children progressively. Combining multiple plyometric movements into one drill is another possibility for higher levels. Using the additional variables of direction and number of legs provides nearly endless options for complexity and intensity. It can be tempting for children to perform more intense exercises in the earlier stages; however, selecting exercises based on a progressive approach can form a strong foundation that all children must have.

Soccer games occur in a dynamic environment that requires speed, strength and explosive power in combination. Therefore, having diverse training methods is important. Plyometric soccer training drills can be practiced in creative

ways using obstacle games. Children can perform a wide variety of plyometric soccer drills around and above objects. However, trainers should be very careful if they are using age as a reference point because children in same age group may have different weights, heights, and shapes (Konukman et al., 2008). Therefore, the developmental status of children should be determined carefully. In particular, children who are overweight can be hurt easily. Beginners, particularly, run a risk of sustaining injury because of the intensity of the work. To prevent this, low numbers of sets and reps should be applied with a high precaution.

According to Chu (2015), to design a developmentally appropriate program for children, trainers should consider volume (several sessions of practice with correct form), intensity (maximal effort with proper form in lower heights), progression (using different equipment for height or size), and frequency of training (twice a week during competition period and 3 days a week if there is no competition with 48 to 72 h of recovery) as well as resting period (full recovery between repetitions with active ways of walking, jogging between sets).

In the final analysis, the duration of a plyometric training program is highly dependent on what type of explosive actions should be improved. Sprinting, agility and jumping parameters improve at different rates and reach optimal performance at different time period (Söhnlein et al., 2014). However, for the significant improvement of most soccer-specific fitness parameters (balance, power, agility, coordination), the minimum time required is at least 8 to 10 weeks of regular training.

Agility ladder drills include the greatest number of variations and modifications to fit all age groups and preparation levels. Therefore, applying the rules of progression, agility ladder plyometrics can promote the outcomes from periodization. Agility ladder drills can include lateral shuffle run, lateral two-foot jumps, linear run, in–out, lateral quick steps and high knee, lateral and linear single-leg hops, linear in–out one-leg hops, scissors, shuffle forward and backward, cross in front and behind, crawls lateral, linear, zig-zag hops, hop scotch, hip switch, ladder crossover, five hops + run, hopping push-up walks, carioca agility, and icky shuffle. It is also possible to add passing and shooting after these agility ladder drills. This type of combination can increase the number of exercises replicating the match conditions.

The five general rules to be followed for all plyometric exercises are the following:

1. General before sports specific
2. Quality over quantity
3. Short before long (low before high)
4. Slow before fast
5. Bilateral befowre unilateral.

Table 1 shows suggested plyometric drills for soccer in all stages. The list includes plyometric exercises that provide progression from low to moderate to high intensity safely and effectively.

Funding

Open Access funding provided by the Qatar National Library.

ORCID

Ferman Konukman http://orcid.org/0000-0001-9508-8874

References

Blazevich, A. J., & Jenkins, D. G. (2002). Effect of the movement speed resistance training exercises on sprint and strength performance in concurrently training elite junior sprinters. *Journal of Sports Sciences*, *20*(12), 981–990.

Chu, D. A. (2015). *Plyometric training for youth*. http://www.donchu.com/articles/article7/

Faigenbaum, A., & McFarland, J. E. (2007). Guidelines for implementing a dynamic warm-up for physical education. *Journal of Physical Education, Recreation & Dance*, *78*(3), 25–28.

Konukman, F., Erdogan, M., Yılmaz, İ., & Gumusdag, H. (2018). Teaching plyometric drills to children: A skill theme approach. *Journal of Physical Education, Recreation & Dance*, *89*(3), 54–56.

Konukman, F., Jenkins, A., Yilmaz, İ., & Zorba, E. (2008). Teaching plyometric training to children. *Strategies*, *22*(2), 31–15.

Potach, D. H., & Chu, D. A. (2000). Plyometric training. In T. R. Baechle, & R.W. Earle (Eds.). *Essentials of strength training and conditioning* (pp. 427–470). Human Kinetics.

Söhnlein, Q., Erich, M., & Stöggl, T. L. (2014). The effect of 16-week plyometric training on explosive actions in early to mid-puberty elite soccer players. *Journal of Strength and Conditioning Research*, *28*(8), 2105–2114.

Ferman Konukman (fkonukman@qu.edu.qa) is an assistant professor in the Department of Physical Education at Qatar University in Doha, Qatar. Murat Erdogan is an associate professor in the Department of Exercise and Sport Sciences at Baskent University in Ankara, Turkey. Ertan Tüfekçioglu is a lecturer in the Physical Education Department at King Fahd University of Petroleum & Minerals in Dammam, Saudi Arabia. Hayrettin Gümüşdag is a professor in the Faculty of Sport Sciences at Yozgat Bozok University in Yozgat, Turkey. İlker Yılmaz is a professor in the Faculty of Sport Sciences at Eskisehir Teknik University in Eskisehir, Turkey.