Effect of Vertical, Horizontal, and Combined Plyometric Training on Explosive, Balance, and Endurance Performance of Young Soccer Players

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The aim of this study was to compare the effects of 6 weeks of vertical, horizontal, or combined vertical and horizontal plyometric training on muscle explosive, endurance, and balance performance. Forty young soccer players aged between 10 and 14 years were randomly divided into control (CG; n 10), vertical plyometric group (VG; n 10), horizontal plyometric group (HG; n 10), and combined vertical and horizontal plyometric group (VHG; n 10). Players performance in the vertical and horizontal countermovement jump with arms, 5 multiple bounds test (MB5), 20-cm drop jump reactive strength index (RSI20), maximal kicking velocity (MKV), sprint, change of direction speed (CODS), Yo-Yo intermittent recovery level 1 test (Yo-Yo IR1), and balance was measured. No significant or meaningful changes in the CG, apart from small change in the Yo-Yo IR1, were observed while all training programs resulted in meaningful changes in explosive, endurance, and balance performance. However, only VHG showed a statistically significant (p ? 0.05) increase in all performance test and most meaningful training effect difference with the CG across tests. Although no significant differences in performance changes were observed between experimental groups, the VHG program was more effective compared with VG (i.e., jumps, MKV, sprint, CODS, and balance performance) and HG (i.e., sprint, CODS, and balance performance) to small effect. The study

demonstrated that vertical, horizontal, and combined vertical and horizontal jumps induced meaningful improvement in explosive actions, balance, and intermittent endurance capacity. However, combining vertical and horizontal drills seems more advantageous to induce greater performance improvements. © 2015 National Strength and Conditioning Association.

competitive game

explosive actions

preadolescense

strength and conditioning

stretch-shortening cycle

adolescent

body equilibrium

child

controlled study

endurance

exercise test

human

male

muscle strength

physiology

plyometrics

procedures

randomized controlled trial

running

soccer

Adolescent

Child

Exercise Test

Humans

Male

Muscle Strength

Physical Endurance

Plyometric Exercise

Postural Balance

Running

Soccer