

The Effect of 8 weeks Eccentric Training Program on improving Muscle Strength of the Lower Limbs and performance running with Change of Direction in youth footballers 16 years old

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Abstract

The purpose of the present study shows the effects of Eccentric training in lower limb muscle with Quasi Isometric in Holding method, with loads of 65-85% of maximum force, leads to improvement of muscular force and performance of Running with Change of Directions. The test group was examined on Laboratory tests on Leonardo Mechanograph Board, Squat Jump, 40cm and 60cm Drop Jump, 15" Jumps on one leg. Tests on Isokinetic Dynamometry, Extension and Flexion of lower leg in 90 grade angles. Field agility test, 505 and Illinois's soccer player Age 16-year-old of Football School participated as test group. The Test group participated for 8 weeks in First - Fourth Week – Frontal Single Leg Split Squat, Lateral Single Leg Split Squat, from the toes tip landing on the sole. The first week 60% of 1RM 14 sec 3/3 30"/3', Second week 65% of 1RM 12 sec 3/3 30"/3', Third Week 70% of 1RM 10 sec 3/3 30"/3', Week Four, 75% of 1RM 8 sec 3/3 30"/3'. Fifth - Sixth Week, Front Single Leg Split Squat, Lateral Single Leg Split Squat, from the toes tip landing on the sole. Single Leg Landing off Box height 30cm Ball Front and Side. Part One of Exercise Front Single Leg Split Squat, Side Single Leg Split Squat, from the toes tip landing on the sole 80% of 1RM 6 sec 3/3 30 "/3 '. Part Two of Exercise Single Leg Landing Off Box Height 30cm Front and Side 40 -50% of 1RM 4 sec Ecc, 2 sec Iso, 1 sec con, 10/3 30 "/3'. Seventh - Eighth Week Period Frontal Single Leg Split Squat, Lateral Single Leg Split Squat, from the toes tip landing on the sole, Lunges Singles Leg Walking, Side and COD Part One of Exercise, 85% of 1RM 4 sec 3/3 30 "/3', Part Two of Exercise, Lunges Singles Leg Walking, Side and COD 25-40% of 1RM 1 sec ecc, 0 sec iso, 1 sec con 10/3 30"/3'.

Result of Test Group show, the time of the two-field test was reduced, Agility Test 505 by 0.06 sec or 2.8% and Agility Test Illinois by 0.45 sec or 2.9 %. Laboratory Test on the Drop Jump 40 cm show the improvement of the Max Force by 10.54% and Max Power by 26.33%. The contact time was reduced by 6.84%. Laboratory Test on the Drop Jump 60 cm show the improvement of the Max Force by 22.60% and Max Power by 25.58%. The contact time was reduced by 15.5%.

Laboratory Test on One Leg Jump show the improvement of the Max Force by 3.36% and Max Power by 26.38% (Right Leg), the Max Force by 5.98% and Max Power by 29.67% (Left Leg). Laboratory on test show the improvement of the Max Force by 3.36% and Max Power by 26.38% (Right Leg), the Max Force by 5.98% and Max Power by 29.67% (Left Leg).

Laboratory Test Squat Jump on Two Legs show the improvement of the Maximal Speed m/s by 2.44% and Maximal Height by 5.06%.

Conclusion, the Eccentric training in lower limb muscle with Quasi Isometric in holding method, with loads of 65-85% of maximum force could be used as a training method to improve muscle strength and performance of COD running of football players during the competition.

Keywords: Eccentric, maximal force and power, soccer player, change of direction (COD).