

Abstract

Title: The Effect of Plyometric Training on Land and in Water on the Physical Fitness of Youth Soccer Players

Objectives: The aim of this study is to develop a plyometric training program on land and in water and assess its effects on changes in the physical fitness components of U10 and U11 category soccer players.

Methods: Twenty-six male participants (10 ± 0.5 years) were included in the study. The research sample was divided into an experimental and a control group. The experimental group ($n = 12$) underwent a 12-week plyometric training program on land and in water, with a frequency of 1 session per week lasting 60 minutes. The control group ($n = 14$) did not undergo any intervention. The levels of speed and endurance abilities, flexibility of the lumbar spine and muscles of the posterior thigh group, explosive strength of the lower limbs, muscular endurance of the abdominal muscles, and static postural stability were assessed before and after the experimental period.

Results: The study demonstrated that plyometric training on land and in water significantly increases agility with directional changes ($p = 0.01$), enhances explosive strength of the lower limbs ($p = 0.01$), improves postural stability ($p = 0.02$), and enhances flexibility ($p = 0.004$).

Keywords: physical fitness, soccer, plyometrics, water environment