

The effect of explosive strength training on anaerobic power, blood lactate concentration, 50m and 100m free style swimming records of adolescence

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The purpose of this study was to determine the effect of eight weeks of explosive strength training on anaerobic power, blood lactate concentration, 50m and 100m free style swimming records of adolescence. So, twenty swimmers (16-18 year) were ed for this study according to swimming records and randomly assigned into experimental (EX) or control (C) group. The subjects were performed routine swimming training. In addition, EX group performed explosive strength training three days a week. Training sessions were consisted of 6 exercises, 2 sets with duration of 10-12 seconds. Training intensity during first 4 weeks was 50% of 1RM and it was increased to 60% for second 4 weeks. Blood lactate concentration was measured after first (pretest) and last (posttest) recording. Also, anaerobic power of swimmers was determined with Sargent test. Anaerobic power of EX group was higher than C group after study period ($P=0.024$). 50m swimming record improved in comparison to C group ($P=0.006$), but in relation to 100m swimming, there were no differences between groups ($P=0.308$). In relation to blood lactate concentrations, there were not found significant differences between groups after 50 and 100m swimming ($P=0.085$, and $P=0.578$ for 50m and 100m records, respectively). These findings indicated that adding explosive strength training to routine swimming training may have a favorable effect on anaerobic power and 50m swimming records of adolescence swimmers, if performed with suitable intensity and volume.

Keywords : Key words: Explosive strength, Anaerobic power, Swimmer, Lactate.