



Mid Atlantic Regional Chapter of the American College of Sports Medicine

Annual Scientific Meeting, November 2nd - 3rd, 2018
Conference Proceedings
International Journal of Exercise Science, Issue 9, Volume 7



Effects of an Eight Week Periodization Training Program in Adolescents

James J. Gresko, Mary G. Ruggieri, Joshua D. Graham, Patricia I. Fitzgerald, Kristofer S. Wisniewski. Saint Francis University, Loretto, PA

Periodization training provides the basis for athletic performance by facilitating the attainment of specific physiological adaptations prior to competition for athletes. This training model is traditionally used for adult athletes, but may have positive implications in an adolescent population. **PURPOSE:** To determine if an abridged periodization training program of 8 weeks will produce performance changes in adolescents. **METHODS:** Eight (7 males, 1 female) individuals, aged 13.3 ± 1.0 years, and BMI 25.9 ± 6.0 kg/m² were tested on percent body fat (%BF), lean body mass (LBM), Functional Movement Screen (FMS), single leg hop (SLH), lower limb symmetry calculated as percent difference between right and left leg SLH, SLH relative to height, bench press reps at 25% of weight, squat reps at 50% of weight, T-test for agility, 40-yard sprint, and a half mile. Training was completed centering around the above tests. The training included 90 minute sessions, three days a week (Monday, Wednesday, and Friday). These sessions consisted of 60 minutes of technique and resistance training, 15-20 minutes of speed and agility training, and 10-15 minutes of flexibility training. Post-testing was completed after 8-weeks. **RESULTS:** Paired sample t-tests showed significant improvements from pre- to post-test in FMS scores (16.5 ± 2.7 to 20.0 ± 0.8 , $p < 0.01$), right SLH (48.2 ± 15.6 in to 51.6 ± 16.2 in, $p < 0.05$), left SLH (43.0 ± 16.0 in to 50.1 ± 15.7 in, $p < 0.01$), limb symmetry (88.5 ± 6.5 % to 95.3 ± 4.8 %, $p < 0.01$), right SLH relative to height (73.3 ± 20.4 % to 78.1 ± 21.3 %, $p < 0.05$), left SLH relative to height (65.4 ± 21.3 % to 76.8 ± 22.2 %, $p < 0.01$), bench press (21.5 ± 14.6 reps to 29.5 ± 14.1 reps, $p < 0.05$), and squat (12.9 ± 8.8 reps to 20.6 ± 10.0 reps, $p < 0.05$). BMI, %BF, LBM, T-test for agility, 40-yard sprint, and half mile changes were not significant ($p > 0.05$). **CONCLUSION:** Significant changes were observed in technique as shown by FMS scores. Muscular power and endurance also improved, thus representing the specificity principle of exercise training as this received the most attention (60 min/session). No significant changes were observed in LBM, suggesting that the changes in muscular power and endurance may have been from neurological adaptations. This conclusion is further supported given the maturity status and duration of the training program.