Effects of Medicine Ball Training in Fitness Performance of High School Physical Education Students

What Was the Question?

It is important for high school students to regularly participate in physical activity that enhances their cardiovascular and musculoskeletal strength. Although students have been encouraged to participate in many aerobic activities such as jogging and swimming, recent evidence suggests that resistance training can also be a safe and effective form of physical activity for boys and girls. While many forms of such training exist, a progressive, inexpensive, and an easily implemented program can be deployed using medicine balls. Although such programs have been around for many years and have been commonly used in fitness facilities, relatively little is known about the effects of such training on the health, fitness, or sport performance of adolescents. In contrast to static machine-based resistance exercises, the use of dynamic medicine-ball training would seemingly promote improvement in strength, along with enhanced balance and coordination. Consequently, the purpose of this study (Faigenbaum & Mediate, 2006a) was to examine the effects of medicine ball training on the strength, flexibility, endurance, and agility of high school students in a physical education class setting.

What Was Done?

The study participants were 118 10th-grade students, ages 15 to 16 years old, from a New England city school. Sixty-nine subjects (42 male, 27 female) participated in the medicine ball training program, and 49 subjects (35 male and 14 female) served as controls. Both the exercise group and the control group participated in a normal physical education class. The exercise group participated in the medicine ball training program during the first 10 to 15 minutes of the regularly scheduled 45-minute physical education class. The exercise group trained twice a week on nonconsecutive days for a period of six weeks. Each medicine ball training session consisted of a warm-up period (3-5 min) and a conditioning phase (7-10 min) during which the subjects performed a series of six to 10 low-to-moderate-intensity exercises with a 6-pound leather medicine ball.

What Was Found?

After the six-week training period, the students performed a battery of physical fitness tests. The group that participated in the medicine ball training program scored significantly higher on all measures, which included the shuttle run (7% vs. 0%), long jump (9% vs. 1%), medicine ball toss (19% vs. -1%), sit and reach (15% vs. 1%), medicine ball abdominal curl (34% vs. 1%), and the medicine ball pushup (42% vs 1%).

What Does the Study Mean?

The findings of this study provide evidence that a relatively small amount of time invested in a medicine ball training program during physical education classes can significantly enhance performance in an array of speed, agility, power, and muscular endurance capacities. Presumably, the development of these capacities can improve the performance of many daily tasks and the ability to participate in and enjoy a variety of recreational activities. In addition to enhancing motor skills and sport performance, regular participation in resistance training also "helps strengthen bone, facilitate weight control, enhance psychosocial well-being, and improve one's cardiovascular risk profile" (Faigenbaum & Mediate, 2006a). For details about how to implement a medicine-ball training program, see the *JOPERD* article by Faigenbaum and Mediate (2006b).

Reference

Faigenbaum, A., & Mediate, P. (2006a). Effects of medicine ball training in fitness performance of high school physical education students. *Physical Educator, 63*, 160-167.

Faigenbaum, A., & Mediate, P. (2006b). Medicine ball for all: A novel program that enhances physical fitness in school-age youths. *Journal of Physical Education, Recreation & Dance, 77*(7), 25-30, 45.

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