

Strength Training for Overweight Teenagers

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AS THE NUMBER OF OVER-weight teenagers continues to increase in the United States (2), physical education teachers and youth coaches face the growing challenge of encouraging boys and girls with excess body fat to engage in physical activity regularly. Traditionally, overweight teenagers have been encouraged to participate in aerobic activities such as walking and bicycling. More recently, observations from teachers, coaches, and fitness professionals suggest that strength training can be a safe, effective, and enjoyable method of exercise for overweight youth, provided that appropriate training guidelines are followed and qualified supervision is present.

■ Potential Benefits

In addition to enhancing motor skills and sports performance, regular participation in a youth strength-training program has the potential to positively influence several measurable indices of health. It can help to facilitate weight control, strengthen bone, enhance psychosocial well-being, and improve one's cardiovascular

risk profile (1). Further, a stronger musculoskeletal system will enable overweight teenagers to perform life's daily activities with more energy and vigor. A summary of the potential health-related benefits of strength training for overweight teenagers is presented in Table 1.

Observations from our youth strength-training center suggest that overweight teenagers enjoy strength training because it is not aerobically taxing and provides an opportunity for all participants to experience success and feel good about their performance. Because overweight teenagers tend to be the strongest students in class,

they often receive unsolicited positive feedback from their underweight peers who are often impressed with the amount of weight overweight boys and girls can lift. Unlike prolonged periods of aerobic exercise in which most overweight teens "fail," participation in strength training activities gives teens with a high percentage of body fat a chance to "shine" and gain competence in their abilities to be physically active. Unpublished data from our youth training center indicate that training heart rates typically wax and wane between 130 and 150 beats per minute during 30–40 minutes of strength training.

Table 1
Potential Health-Related Benefits of Strength Training for Overweight Teenagers

- Increase muscle strength.
- Increase bone mineral density.
- Increase cardiorespiratory fitness.
- Improve blood lipid profile.
- Improve body composition.
- Lower blood pressure if hypertensive.
- Enhance psychosocial well-being.
- Stimulate a more positive attitude toward lifetime physical activity.

■ Program Design Considerations

Cautionary measures need to be taken when overweight teenagers begin strength training. Parents or legal guardians should complete a health history questionnaire for each child, and if a known or suspected health problem is present, teenagers should be referred to their health care provider. In addition, exercise programs for overweight teenagers need to be prescribed carefully because the volume and intensity of most strength training programs exceeds the abilities of most overweight teenagers and the prescribed recovery periods are often too short. When designing strength training programs for teenagers with excess body fat, it is always better to underestimate their physical abilities and gradually increase the volume and intensity of training than to overestimate their abilities and risk an injury or a possible dropout.

Overweight teens should perform about 5–10 minutes of warm-up activities before strength training. Jogging and dynamic exercises such as hops, skips, and jumps are typically too intense for teens with excess body fat. Walking and low- to moderate-intensity calisthenics with a 1-kg medicine ball are enjoyable warm-up activities that can prepare the cardiorespiratory and musculoskeletal systems for the demands of strength training. Overweight teenagers who have difficulty completing a continuous 5- to 10-minute warm-up should participate in an interval-type of warm-up, whereby short recovery periods are incorporated into the activity session.

In addition to traditional free

weight exercises using barbells and dumbbells, a variety of other strength training modalities including one's own body weight, elastic tubing, medicine balls, and weight machines can be used. From our experience, overweight teenagers enjoy strength training on weight machines because they are relatively easy to use and a majority of the exercises can be performed in the seated position. We try to begin with activities that are moderately challenging, so teenagers can develop fundamental skills and gain confidence in their abilities before progressing to more advanced exercises using free weights and one's own body weight. We know that when overweight teenagers have a choice, they will participate in activities that will be fun and enjoyable. In our youth strength-training center, the attendance rate for overweight children and teenagers who participate in an introductory 9-week program typically exceeds 90%.

During the first few weeks of the strength training program, teens perform a single set of 10–15 repetitions on 8–12 different exercises, with a 2- to 3-minute rest period between exercise stations. Depending on individual needs and abilities, additional sets for selected multijoint exercises are prescribed over the course of the training program. We place a high value on participation; underweight, "normal" body weight, and overweight teenagers all exercise together in a cooperative, nonthreatening environment. We reduce the emphasis on guaranteed outcomes and focus on the mere enjoyment of participating in strength training activities. When working with overweight teenagers, it is important to

focus on intrinsic factors such as skill improvement, personal success, and having fun.

In summary, we need to provide opportunities for overweight teenagers to engage regularly in lifetime physical activities that are safe, effective, and fun. Whereas further study is warranted, the first step in encouraging overweight teens to exercise may be to increase their confidence in their ability to be physically active, which in turn may lead to an increase in regular physical activity and a decrease in fat gain. Rather than focus entirely on aerobic training, the inclusion of strength training activities into a health-oriented lifestyle plan that includes nutrition education may be part of the solution for long-term fat loss and weight management in teenagers with excess body fat. ▲

■ References

1. Faigenbaum, A., and W. Westcott. *Strength and Power for Young Athletes*. Champaign, IL: Human Kinetics Publishers, 2000.
2. U.S. Department of Health and Human Services. *Physical Activity and Health: A Report from the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 1996.

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