Summary
The global epidemic of pediatric obesity and associated co-morbidities has become a critical public health threat for the 21st century with far-reaching health, economic and social consequences. While there is not one program of proven efficacy that fitness professionals can use to manage this condition, most overweight youth find resistance training enjoyable because this type of exercise provides an opportunity for all youth -- regardless of body size -- to experience success and feel good about their performance. In addition, since youth tend to be more physically active when relationships are positive and rewarding, resistance training provides a unique opportunity for companionship and recreation. In this lecture, fitness professionals will gain an understanding of pediatric resistance exercise and genuinely appreciate the physical and psychosocial uniqueness of overweight youth who need to participate in physical activity programs that are safe, effective, age-related and enjoyable.

I. Introduction and overview
   A. First things first: The vortex of physical inactivity
   B. The global pandemic of pediatric overweight and obesity
   C. What is the new “normal”? 
   D. Health club trends: What happened to childhood obesity?

II. Kids are not miniature adults
   A. Cardiorespiratory responses: Does target heart rate matter? 
   B. Anaerobic responses: Why do kids recover faster than adults? 
   C. The critical importance of skill-related fitness
   D. Have fun, make friends and learn something new

III. Youth resistance training: Benefits and concerns
   A. Misperceptions of the growing child
      1. The growth plate: Myth vs reality
      2. Safety concerns
   B. Potential benefits of youth resistance training
      1. Increase muscular strength and power 
      2. Enhance fundamental movement skills

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3. Improve bone mineral density
4. Enhance metabolic health
5. Improve body composition
6. Reduce risk of activity-related injury
7. Enhance psychosocial well-being

C. When can a child start to resistance train?

IV. Resistance training for overweight youth
   A. Why weight?
   B. Research update
   C. General program design considerations
      1. Choice and order of exercises
      2. Sets and repetitions
      3. Rest interval between sets and exercises
      4. Tips for creating a positive experience
   D. Sample lessons for youth who are overweight or obese
      1. FUNdamental integrative training (FIT)
      2. Medicine ball for all kids
   E. Lifestyle choices
      1. Sensible nutrition
      2. Adequate sleep
      3. Get parents involved

V. Three take-away points
   A. The first step in encouraging youth who are overweight or obese to exercise regularly may be to increase their confidence in their ability to be physically active in a socially supportive environment which, in turn, may lead to an increase in regular physical activity, an improvement in body composition and, hopefully, exposure to a form of exercise that can be carried over into adulthood.

   B. Although excess body weight hinders the performance of weight bearing physical activity such as jogging, youth who are overweight or obese tend to enjoy resistance training because this type of exercise provides an opportunity for all youth -- regardless of body size -- to experience success and feel good about their performance.

   C. In addition to enhancing muscular strength, power and motor skill performance, regular participation in a resistance training program can positively influence the body composition, cardiorespiratory fitness, bone mineral density, metabolic health, and psychosocial well-being of youth who are overweight or obese.
Selected References


Useful websites for more information on physical activity and childhood obesity:
- [www.acsm.org](http://www.acsm.org)
- [www.aahperd.org](http://www.aahperd.org)
- [www.cdc.gov](http://www.cdc.gov)
- [www.eatright.org](http://www.eatright.org)
- [www.exerciseismedicine.org](http://www.exerciseismedicine.org)
- [www.health.gov](http://www.health.gov)
- [www.naspem.org](http://www.naspem.org)
- [www.sensiblenutrition.com](http://www.sensiblenutrition.com)
- [www.strongkid.com](http://www.strongkid.com)

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