Obese, Pre-pubertal Children Display Significant Health Risk Factors According to Adult Metabolic Disease Risk Standards

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Introduction: In youth, obesity has tripled in the past 30-years. Low physical activity (PA) and poor eating habits are primary, yet malleable contributing factors to this trend. With adolescence considered a critical period for the development of obesity, it is important to identify children at metabolic risk prior to puberty, along with contributing behaviors.

Purpose: Explore metabolic health risk, PA, and eating behaviors in 3^{rd}-5^{th} graders

Methods: A total of 26 3^{rd}-5^{th} graders [10 obese (>95^{th} body mass index (BMI) percentile, 16 healthy weight (HW) (25^{th} - $\geq 85^{th}$ BMI percentile), 23 Caucasian, 2 Asian, 1 African-American; 7-10 years; 13 males, 13 females] prior to a before-school PA program were included. Waist and hip circumferences were measured per ACSM procedures and waist-to hip ratio (WHR) was calculated. The Physical Activity Questionnaire for Children (PAQ-C) and Food Behavior Checklist were also administered. Means, standard deviations, and t-tests were performed to compare WHR, PA, and perceived eating habits between the HW and obese children with significance set at 0.05.

Results: Obese children displayed significantly higher WHR (0.91) compared to HW children (0.81). Three obese females and 1 obese male displayed WHR considered as very high risk according to adult WHR standards. Obese children reported a significantly lower PA level (2.64) for the prior 7 days compared to the HW children (3.28). On a scale of 1 to 10, the obese children reported significantly lower overall eating habits (5.5) compared to the HW children (7.7).

Discussion: In the current study, obese 3^{rd}-5^{th} graders displayed significantly poorer eating habits and PA compared to their HW peers. Not only did the obese children display significantly higher WHR, but also 4 are already considered a very high health risk using adult standards. Immediate strategies are warranted to modify eating behaviors and increase PA in these obese children.