

Study supports reason for concern in childhood and adolescent obesity

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Study findings presented at the May 2008 Pediatric Academic Societies and Asian Society for Pediatric Research Joint Meeting indicate that childhood and adolescent obesity negatively impacts vascular endothelial function, which relates to cardiac health.

Obesity has been increasing rapidly in the U.S. during the past 20 years and obesity in adults has been linked to cardiovascular disease. The incidence of obesity in children is also increasing and many cardiovascular diseases that are manifested in adulthood may actually begin in childhood. It is known that healthy endothelium (a single cell layer that lines all blood vessels) is key to maintaining vascular health.

Endothelial “dysfunction” is a primary contributor to atherosclerotic cardiovascular disease (the buildup of fatty deposits on the inside walls of arteries) in adults and is associated with increased risk of heart attacks, stroke, and congestive heart failure. Endothelial function can be measured non-invasively in children using venous occlusion plethysmography (VOP), a technique that measures responses of arm blood vessel responses to an inflatable cuff that externally halts and restarts blood flow. This method has been shown to correlate with coronary artery function in adults with heart disease.

The study was designed to investigate the relationship between body mass index (BMI) and endothelial function measured via VOP in 76 children and adolescents ages nine through 18. BMI is a number calculated from a person’s weight and height and it provides a reliable

indicator of the amount of body fat.

Judith Groner, MD, the presenting author of the study, a pediatrician in Ambulatory Pediatrics at Nationwide Children's Hospital and a faculty member of The Ohio State University College of Medicine, said, "My colleagues in the Research Institute at Nationwide Children's and I found that regardless of age, race or sex, obesity in children and adolescents negatively impacts their endothelial function. Considering the connection between endothelial function and heart disease, this information is alarming given the high prevalence of childhood and adolescent obesity in our country."

Source: Nationwide Children's Hospital

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