

Obesity is a poor gauge for detecting high cholesterol levels in children

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With the epidemic of childhood obesity in the United States, there is concern that overweight and obese children need to be screened for chronic medical conditions, including high cholesterol levels.

However, body fat is not an effective indicator of [high cholesterol](#) in [children](#), according to new University of Michigan research.

Those are the findings of a U-M study led by U-M pediatricians Joyce Lee, M.D., MPH, and Matthew Davis, M.D., MAPP, which will appear in the August 3 edition of the *Archives of Pediatric and Adolescent Medicine*.

"We found, actually, that using body mass index to find [kids](#) with high cholesterol does not work well. There were many overweight and obese kids who had normal cholesterol, and there were a fair number of healthy-weight kids who had high cholesterol," says Lee, a member of the Child Health Evaluation and Research (CHEAR) Unit in the U-M Division of General Pediatrics, and assistant professor in the Department of Pediatrics and Communicable Diseases at the U-M Medical School.

The study was conducted after the American Academy of Pediatrics revised its cholesterol screening guidelines in July 2008, advocating a cholesterol check for kids who have increased risk of heart disease. For the most part, that means all children who are overweight or obese, which is about 30% of kids in the U.S.

"Our results indicate that the AAP guidelines for cholesterol screening in kids may need to be revised," says Lee. "Otherwise, we may be missing high cholesterol in some kids and unnecessarily testing others."

The authors performed the study with national data from thousands of children to see whether 'body

mass index' (BMI), a measure of body fat based on height and weight, can be used as a reliable way to find kids with high cholesterol levels. They looked at the relationship between BMI and two different cholesterol measures, including total cholesterol and [low density lipoprotein](#) (LDL) cholesterol, i.e. "bad" cholesterol.

For this study, children were classified as overweight if their BMI was between the 85th and 95th percentiles, and defined as obese if their BMI was greater than the 95th percentile for weight based on age and height. Children had abnormal levels if they had a total cholesterol greater than 200 mg/dl or LDL [cholesterol level](#) of greater than 130 mg/dl.

This study found that screening all overweight or obese children would identify approximately 50% of children with abnormal cholesterol levels but would also lead to unnecessary testing for up to 30% of children.

Other studies have looked at additional screening strategies for abnormal cholesterol in children on the basis of having a family history of early heart disease or high cholesterol. But as Lee notes, "A positive family history also performs poorly for identifying children with high cholesterol levels. Therefore, it may be more efficient for the AAP to recommend a public health campaign to reduce cholesterol among all children, rather than screening high-risk groups."

Source: University of Michigan Health System ([news](#) : [web](#))

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