Childhood obesity increases likelihood of a cranial disorder that may cause blindness

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Children who are overweight or obese -- particularly older, non-Hispanic white girls -- are more likely to have a neurological disorder known as idiopathic intracranial hypertension, a rare condition that can result in blindness, according to a new Kaiser Permanente study published in The *Journal of Pediatrics*.

In a cross-sectional, population-based study of 900,000 children ages 2-19 years old, researchers found 78 cases of pediatric idiopathic intracranial hypertension. The condition occurred most frequently in overweight or obese, non-Hispanic white teenage girls—85 percent of the children with IIH were girls 11-19, nearly half were non-Hispanic white, and 73 percent were overweight or obese.

Importantly, the study also found a strong association between IIH and increasing weight class: extremely obese adolescents were 16 times more likely than normal weight children to have IIH; moderately obese children, 6 times more likely; and overweight children, 3.5 times more likely.

"Childhood obesity has again been shown to be associated with a serious disease," said study lead author Sonu M. Brara, MD, of the Kaiser Permanente Los Angeles Medical Center Neurology Department. "This research is the strongest evidence to date that obesity is associated with IIH in children—it also suggests that the childhood obesity epidemic is likely to lead to increased morbidity from IIH, including blindness."

This study adds to the growing evidence base about data on the prevalence of obesity and prevention of it among children. Earlier this month the Institute of Medicine released its Accelerating Progress in Obesity Prevention offering recommendations, strategies, and action steps for stakeholders and sectors to accelerate progress in preventing obesity.

In adults, IIH is a relatively rare disorder that predominately affects overweight or obese women ages 20 to 44 with an incidence rate of 15 per 100,000 individuals. The disorder is characterized by increased pressure around the brain in the absence of other diseases, with symptoms including headache, blurred vision, nausea, and eye movement abnormalities. The ailment can lead to blindness in up to 10 percent of patients, particularly when not recognized and treated promptly.

The children and adolescents in the study were enrolled in the Kaiser Permanente Southern California integrated health plan from 2007 to 2009. The study included measured height and weight and diagnosis of IIH.

"Our findings may help improve the early diagnosis and treatment of IIH in young patients," said Dr. Brara. "Overweight and obese children appear to have more IIH symptoms at onset than normal weight children. We suggest that clinicians carefully screen adolescents who are overweight or obese and present with symptoms of IIH, such as headache, blurred vision, and eye movement abnormalities."

According to recent Centers for Disease Control and Prevention recommendations, extreme obesity is defined as more than 1.2 times the 95th percentile, or a body mass index of more than 35 kilograms/meter squared. Obesity is defined as more than the 95th percentile or a BMI of more than 30 kg/m2. Overweight is defined as more than the 85th

percentile or a BMI of more than 25 kg/m2. Body mass index is a reliable indicator of body fatness and calculated based on height and weight. For children, BMI percentiles are the most commonly used indicator to assess the size and growth patterns of individual children. The percentile indicates the relative position of the child's BMI number among children of the same sex and age.

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