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Press Release

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Extra pounds put kids at higher risk for hypertension

Kaiser Permanente study shows even modest elevations in BMI above the “average weight” for children was associated with an increased risk of hypertension.

PASADENA, Calif. — A Kaiser Permanente study of more than 800,000 young people between the ages of 3 and 17 showed that youth at the upper range of average weight had a 26% higher risk of developing hypertension than those closer to what is considered average weight. The study was published March 8, 2023, in JAMA Network Open.

“Hypertension during youth tracks into adulthood and is associated with cardiac and vascular organ damage. Since the organ damage can be irreversible, preventing hypertension in our young people is critically important,” said the lead author, [Corinna Koebnick](#), PhD, of the Kaiser Permanente Southern California Department of Research & Evaluation. “The findings of this study of hypertension among a diverse population of children in Southern California show us the detrimental effects of even a few extra pounds on our young people.”

This retrospective cohort study looked at the electronic health records of 801,019 young people who were members of Kaiser Permanente in Southern California between 2008 and 2015. Researchers compared youths by their initial body mass index, known as BMI, together with their change in BMI during the 5-year follow-up. Researchers also looked at their blood pressure to determine who had hypertension.

Researchers divided average body weight into low (5th through 39th percentile), medium (40th through 59th percentile), and high (60th through 84th percentile) to provide insight into the risk of hypertension at a weight below what would typically be considered overweight. Unlike in adults, BMI levels among children and teens need to be expressed relative to other people of the same age and sex.

Researchers found:

- Compared to youths in the medium range of average weight, the risk of developing hypertension within 5 years was 26% higher for youths at the high end of the average weight range.



- Children gain weight over time. Every BMI unit gained per year increases their risk of hypertension by 4%.
- The rate of hypertension was higher among boys than girls, and among youth on state-subsidized health plans in comparison to those not on state-subsidized health plans.

“This study underscores the need for medical professionals to reevaluate how we correlate and educate about health risks across the spectrum of weight in growing children,” said the study’s senior author, [Poornima Kunani](#), MD, a pediatrician and researcher at the Kaiser Permanente Manhattan Beach Medical Office. “Obesity may be the most important risk factor for hypertension during childhood. Parents should talk to their pediatrician to see if your child might be at risk for hypertension and other preventable chronic medical conditions related to obesity. They can help you with strategies for developing habits to keep your child healthy through adulthood.”

In addition to Koebnick and Dr. Kunani, authors on the study were Margo A. Sidell, and Xia Li, of the Kaiser Permanente Department of Research & Evaluation; Susan Woolford of the University of Michigan; and Beatriz D. Kuizon, MD, of the Kaiser Permanente Los Angeles Medical Center.

About Kaiser Permanente

Kaiser Permanente is committed to helping shape the future of health care. We are recognized as one of America’s leading health care providers and not-for-profit health plans. Founded in 1945, Kaiser Permanente has a mission to provide high-quality, affordable health care services and to improve the health of our members and the communities we serve. We currently serve approximately 12.6 million members in 8 states and the District of Columbia. Care for members and patients is focused on their total health and guided by their personal Permanente Medical Group physicians, specialists, and team of caregivers. Our expert and caring medical teams are empowered and supported by industry-leading technology advances and tools for health promotion, disease prevention, state-of-the-art care delivery, and world-class chronic disease management. Kaiser Permanente is dedicated to care innovations clinical research, health education, and the support of community health.