

# Childhood obesity and high blood pressure warn of future heart disease

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A large study in adolescents and children, some as young as three years of age, shows a link between obesity, high blood pressure, and later damage to blood vessels. The research is presented today on [EAPC](#)

[Essentials 4 You](#), a scientific platform of the European Society of Cardiology (ESC).

"The results of this study highlight the need to adopt [healthy lifestyles](#) from an early age," said study author Ms. Julia Bueschges, a Ph.D. student at the Robert Koch Institute, Berlin, Germany.<sup>1</sup>

Until now, there has been little information on the connection between risk factors present in childhood—such as obesity and [high blood pressure](#)—and [cardiovascular disease](#) later in life.

The study used data from the nationally representative German Health Interview and Examination Survey for Children and Adolescents (KiGGS cohort). Children from [diverse backgrounds](#) were enrolled from all over Germany irrespective of their health status; they were selected using a sophisticated sampling design to ensure they represented the German population.

Three study teams traveled over three years and set up temporary examination centres in 167 locations across the country. The baseline examination of 4,716 participants aged three to 17 included [blood pressure](#), height and weight. The measurements were repeated 11 years later in the 14 to 29-year-olds, who also had an ultrasound of their arteries. The ultrasound assessed the thickness of the inner two layers of the carotid artery: thicker lining is an early indicator of clogged arteries.

High blood pressure (hypertension) at baseline was associated with a 33% increased risk of having a thicker lining of the artery 11 years later, while baseline obesity was linked with a 38% elevated risk of thicker artery lining. Thicker lining was defined as the top 25% of measurements according to current guidelines. Being hypertensive at both examinations was linked with a 63% raised risk of thicker artery lining, while being obese at both examinations carried a 53% greater

risk.

Ms. Bueschges said: "The study provides evidence from a large general population sample for a connection between cardiovascular [risk factors](#) in children and adolescents—namely high blood pressure and obesity—and subsequent deleterious changes in the blood vessels." She cautioned that individual risk prediction is only moderate, meaning that not all children and adolescents with high blood pressure or obesity will develop subclinical atherosclerosis.

She said: "These findings underline the importance of good cardiovascular health from an early age. Physical activity and a [healthy diet](#) can help prevent high blood pressure and obesity. Alcohol and tobacco should be avoided. Last but not least, it is important to manage stress."

She concluded: "Tackling these unhealthy behaviors does not depend on children and their families alone but also on the promotion of healthy environments and the reduction of social inequalities which are strongly associated with cardiovascular disease."

Provided by European Society of Cardiology

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