

Even in young children: Higher weight = higher blood pressure

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Overweight four-year-olds have a doubled risk of high blood pressure by age six, raising the hazard of future heart attack and stroke. That's the finding of a study published today in the *European Journal of Preventive*

Cardiology, a journal of the European Society of Cardiology (ESC).

"The myth that excess weight in children has no consequences hampers the prevention and control of this health problem," said study author Dr. Iñaki Galán, of Carlos III Health Institute, Madrid, Spain. "Parents need to be more physically active with [young children](#) and provide a healthy diet. Women should shed extra pounds before becoming pregnant, avoid gaining excess weight during pregnancy, and quit smoking, as these are all established [risk factors](#) for [childhood obesity](#)."

According to the World Health Organization, childhood obesity is one of the most serious public health challenges of the 21st century. The problem is global and the prevalence has increased at an alarming rate. In 2016, more than 41 million children under the age of five were overweight.

This study, based on the ELOIN cohort, examined the link between excess weight and [high blood pressure](#) in 1,796 four-year-olds who were followed up two years later. Blood [pressure](#) was measured at both time points, as was body mass index (BMI in kg/m²) and [waist circumference](#).

Compared to children maintaining a healthy weight between ages four and six, those with new or persistent excess weight according to BMI had 2.49 and 2.54 higher risks of high [blood pressure](#), respectively. In those with new or persistent abdominal obesity, the risks for high blood pressure were 2.81 and 3.42 greater, respectively. Children who lost weight did not have an increased risk of high blood pressure. The findings applied to all children regardless of sex or socioeconomic status.

"There is a chain of risk, whereby overweight and obesity lead to high blood pressure, which heightens the chance of cardiovascular disease if allowed to track into adulthood," said Dr. Galán. "But the results show

that children who return to a normal weight also regain a healthy blood pressure."

The best way to maintain a healthy weight and lose excess kilos is to exercise and eat a [healthy diet](#), said Dr. Galán. In addition to the central role of parents, the school curriculum needs to include three to four hours of physical activity every week. Teachers should supervise activities during breaks, while schools can offer games and sports after classes and provide nutritionally balanced meals and snacks.

Doctors should routinely assess BMI and waist circumference at early ages, added Dr. Galán. "Some paediatricians think the harms of overweight and obesity begin in adolescence but our study shows they are mistaken," he said. "We need to detect excess weight as soon as possible so the damaging impact on blood pressure can be reversed."

Overweight children should have their blood pressure measured. Three consecutive elevated readings constitute high blood pressure. In young children, the most common cause is [excess weight](#), but doctors will rule out other reasons such as heart defects, kidney disease, genetic conditions, and hormonal disorders. If the cause is overweight, more activity and dietary improvements will be advised. If lifestyle changes don't help, [blood](#) pressure lowering medication may be prescribed.

Dr. Galán noted that overweight in children is most accurately assessed using both BMI and waist circumference. In the study, using either measurement alone would have missed 15% to 20% of cases.

More information: Maira A Ortiz-Pinto et al. Association between general and central adiposity and development of hypertension in early childhood, *European Journal of Preventive Cardiology* (2019). [DOI: 10.1177/2047487319839264](https://doi.org/10.1177/2047487319839264)

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