

Blood pressure levels in childhood track into adulthood

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High blood pressure in childhood is associated with higher blood pressure or hypertension in adulthood, according to a study by researchers at the Johns Hopkins Bloomberg School of Public Health. Their analyses of previously published blood pressure tracking studies over the last four decades show a consistent relationship between children's blood pressure levels with their blood pressure levels as adults. The results are published in the June 2008 issue of *Circulation: Journal of the American Heart Association*.

"The blood pressure tracking data indicate that children with elevated blood pressure levels often grew up to become adults with elevated blood pressure," said Youfa Wang, MD, PhD, senior author of the study and associate professor with the Bloomberg School's Center for Human Nutrition. "It is important to monitor blood pressure in children—since early detection and intervention could prevent hypertension and related disease risks later in life. For example, studies show that even slightly elevated blood pressure as adults will increase future risks for cardiovascular disease considerably."

Wang and Xiaoli Chen, MD, PhD, former postdoctoral research fellow in the Bloomberg School's Department of International Health, attributed the findings to a systematic review and meta-analysis of 50 cohort studies tracking the systolic and diastolic blood pressure levels of children into adulthood. Researchers analyzed blood pressure levels at various ages and follow-up lengths from previously published studies that monitored children's blood pressure levels for as long as forty years across multiple countries and continents.

"The study found a large variation in the degree of blood pressure tracking between childhood and adulthood reported in previous studies, but overall our pooled analysis of these data shows a moderate tracking," said Chen. "In addition we

discovered that older children seem to have a stronger blood pressure tracking into adulthood. The longer the follow-up study period between the measures collected in childhood and adulthood, the weaker the blood pressure tracking."

Currently it is estimated that nearly 73 million adults in the United States have high blood pressure. Hypertension, which is one of the major modifiable risk factors for cardiovascular disease, can lead to heart disease, heart failure, stroke, kidney failure and a number of other health problems. A previous study conducted by Wang and colleagues found that approximately 60 percent of American adults had pre-hypertension or hypertension in 1999 to 2000, and several population groups were disproportionately affected. The prevalence of hypertension has increased nearly 10 percentage points compared to findings in a 1988-94 national survey. Wang credits this in part to the rising obesity epidemic.

"Lifestyle modification such as eating a healthy diet and having adequate exercise is preferred to medication when appropriate to help young people to control their elevated blood pressure to a desirable level," said Wang. "Lifestyle modification can also reduce the risks of developing many other chronic diseases such as obesity, type 2 diabetes, metabolic syndrome, and cardiovascular disease."

Source: Johns Hopkins University

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