

# Teen-age boys have greater risk than girls of high blood pressure as adults

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(PhysOrg.com) -- Teen-age boys with normal blood pressure are three to four times more likely than girls to develop high blood pressure early in adulthood, according to a large scale study published in *Hypertension: Journal of the American Heart Association*.

Researchers examined the natural history of the development of [blood pressure](#) from adolescence to young adulthood in 23,191 boys and 3,789 girls from average age 17 to 42 years, with regular and repeated readings of blood pressure and [body mass index](#) (BMI).

Participants were part of the Metabolic, Lifestyle, and Nutrition Assessment in Young Adults (MELANY) Study, conducted by the Israeli Defence Forces.

Previously, systolic blood pressures (the top number in a blood pressure reading) of 100, 105 and 110 were considered within the normal range for adolescents, researchers said. However, the study found that elevations in blood pressure within the normal range can be consistent with pre-hypertension and represent higher risk of developing [hypertension](#) in early adulthood (20s and 30s).

“Blood pressure values well below the hypertensive range already can serve as good predictors for future hypertension,” said Amir Tirosh, M.D., Ph.D., one of the study’s lead authors and a fellow in the Department of Medicine, Division of Endocrinology, Diabetes, and Hypertension at Brigham and Women’s Hospital in Boston, Mass. “The

rate of progression to hypertension is higher in teen-agers whose systolic blood pressure is 110 versus those whose blood pressure is 100 and is different between boys and girls.”

During the follow-up period, 14 percent, or 3,810 people, developed hypertension.

Researchers examined the interaction between BMI and blood pressure, because of concerns about the current epidemic of overweight and obesity.

For boys, the risk of [high blood pressure](#) as young adults increases throughout the entire range of BMI, including what’s considered normal weight, a BMI of 18.5 to 25.

For girls, only the sub-group considered obese had substantially higher risk of high blood pressure. The sex hormone estrogen may protect against hypertension, explaining the sex differences researchers said.

“BMI is considered an independent risk factor that interacts with blood pressure to predict future risk of hypertension,” Tirosh said. “Together, these factors provide a simple and useful tool that can serve as a red flag to detect sub-groups of teens at high risk of hypertension as adults while in their teens.”

For boys already in the upper range for normal weight, with [systolic blood pressure](#) 110 and above, the risk of hypertension increases at about 1 percent per year. So, already before the age of 30 years about 10 percent of that group will develop hypertension, Tirosh said.

“It is never too early to start lifestyle modification and intervene to prevent hypertension, heart disease and diabetes,” he said.

“Hypertension, heart disease and their prevention have been perceived as more relevant to an older population, but now we know that slight

changes in blood pressure and weight should represent an alert for pediatricians to begin prevention as early as possible. It is better to prevent a disease than treat it.”

The study findings apply to the United States and other industrialized nations, researchers said.

Provided by American Heart Association

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