

Researchers identify risks of hypertension in young adults

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Ben-Gurion University of the Negev (BGU) researchers reveal in a new, large-scale study that "normal" blood pressure at age 17 can still predict hypertension at early adulthood and that teenage boys are three to four times more likely to develop high blood pressure in early adulthood than girls.

According to the study published in [Hypertension: Journal of the American Heart Association](#), the research team assessed how teenage boys and girls with normal blood pressure might progress into becoming young adults with hypertension. Currently, systolic blood pressures of 100 to 110 and even up to 120 are considered within the normal range for adolescents. Other traits like weight, height and [body mass index](#) (BMI) have a range of distribution that is considered "normal."

"Frequently called the 'silent killer,' hypertension is a major risk factor for heart disease and [vascular diseases](#) like stroke," explains researcher Dr. Assaf Rudich, an associate professor in the Department of Clinical Biochemistry at BGU. "It is increasing along with the [obesity](#) epidemic, but regrettably, young adults who are otherwise healthy frequently are not screened for becoming hypertensive."

The BGU researchers examined the development of blood pressure from adolescence to young adulthood in 23,191 boys and 3,789 girls from ages 17 to 42 by taking regular readings of their blood pressure and BMI of Israel Defense Forces personnel who were not hypertensive at age 17 in their initial evaluation before recruitment.

The study revealed two substantive findings:

- In boys, there is a strong correlation between blood pressure and BMI at age 17. This means that while the blood pressure reading may be in the "normal range," there is a greater risk for hypertension when BMI is also evaluated. The rate of progression to hypertension is higher in boys whose [systolic blood pressure](#) is 110 versus those whose blood pressure is 100.
- For girls, only the sub-group considered obese had substantially higher risk of [high blood pressure](#). The researchers believe that estrogen may protect against hypertension.

The study also confirmed several known observations:

- Seventeen-year-old boys have higher blood pressure than their female counterparts.
- Boys are three to four times more likely to develop hypertension as young adults and the higher the blood pressure value, even within the normal range, the higher is the risk for becoming hypertensive adults.

During a follow-up period with these adolescents, 14 percent or 3,810 people developed hypertension.

"Collectively, the study suggests that pediatricians caring for adolescents and physicians caring for young adults should be more aware of the need to monitor weight and blood pressure even when they are considered "normal," explains Dr. Iris Shai, an associate professor in the Department of Epidemiology in the Faculty of Health and Sciences. "For the individual person, a 'normal value' may still be associated with a

significant elevated risk of disease when the BMI and sex of the patient is also considered."

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

Provided by American Associates, Ben-Gurion University of the Negev

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