

Prehypertension during pregnancy could lead to cardiovascular risks

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Pregnant women who experience persistent blood pressure elevations in the upper ranges of normal may be at high risk of developing metabolic syndrome and increased cardiovascular risk after giving birth, according to research published in the American Heart Association's journal *Hypertension*.

Current blood pressure guidelines—which do not distinguish between pregnant women and the general population—define hypertension as persistently elevated blood pressure that is 140 millimeters of mercury (mm Hg) systolic (top number) or 90 mm Hg diastolic (bottom number) and above, while blood pressure of 120-139 mm Hg systolic over 80-89 mm Hg diastolic is deemed "prehypertension."

But in a first-of-a-kind finding, a study suggests that prehypertension could be dangerous to pregnant women.

The study reveals that pregnant women with blood pressure in the prehypertension range had a 6.5 times greater odds of developing metabolic syndrome after giving birth, compared to women with blood pressure in the lower normal range.

Metabolic syndrome occurs when a person has three or more of the following measurements:

abdominal obesity (waist circumference of 40 inches or above in men, and 35 inches or above in women);triglyceride level of 150 milligrams

per deciliter of blood (mg/dL) or greater; HDL cholesterol (good cholesterol) of less than 40 mg/dL in men or less than 50 mg/dL in women; systolic blood pressure of 130 mm Hg or greater, or diastolic blood pressure of 85 mm Hg or greater; or fasting glucose of 100 mg/dL or greater.

"Our findings underscore an important issue that has been long ignored in clinical practice—the fact that criteria for hypertension in pregnancy are derived from the general population," said lead study investigator Jian-Min Niu, M.D., in the Department of Obstetrics at Guangdong Women and Children Hospital in China. "We anticipate that if reaffirmed in further research, our study could spark a change in what we currently deem healthy blood pressure in pregnant women."

The results stem from 507 Chinese women with uncomplicated pregnancies, no history of hypertension and normal blood sugar and cholesterol. All women underwent seven or more blood pressure measurements during the course of their pregnancies, along with other standard tests used to monitor pregnancy, including weight measurements and fetal ultrasounds.

Additionally, participants had their blood sugar and cholesterol levels tested upon entering the study, shortly before and after giving birth, and once every few months for up to 1.6 years after giving birth.

Based on blood pressure levels, researchers grouped women into three categories: those whose blood pressure remained on the lower end of normal throughout pregnancy (34 percent), those whose pressure hovered around mid-point normal (52 percent), and those whose readings trended in the higher end of normal or prehypertension (13 percent).

The researchers caution that a series of snapshot measurements did not

predict future risk, but that patterns of repeated elevations over the course of a pregnancy did. This finding, the researchers say, highlights the dynamic nature of blood pressure during pregnancy.

According to researchers, the study results support the notion of pregnancy as a cardiovascular stress test for women that can reveal underlying disturbances in [blood pressure](#) regulation, glucose and cholesterol metabolism. Abnormalities in all three areas can disrupt cardiovascular functions and lead to full-blown cardiovascular disease years down the road.

Globally, the burden of cardio-metabolic diseases in [women](#) has been rising steadily over the last decades, Niu said.

"Blood pressure measurements are already done as matter of routine and cost-effective checkups during pregnancy, so our findings underscore this tool's potential to gauge a woman's post-partum cardiovascular risk," Niu said. "Early identification of metabolic risk factors and implementation of lifestyle modifications may help delay the onset of cardiovascular disease that would present itself 20 to 30 years after delivery."

Provided by American Heart Association

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