

Study identifies cardiovascular risk factors that may lead to pregnancy problems for first-time moms

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A new study of first-time pregnant women found risk factors for heart disease, such as obesity and elevated blood sugar, can put expectant moms at higher risk for pregnancy complications and gestational

diabetes and also lead to increased chances of high blood pressure, or hypertension, two to seven years after giving birth. The findings, which appear in the *Journal of the American Heart Association*, may assist doctors working with patients to adopt heart-healthy lifestyles or to avoid pregnancy problems, such as preeclampsia or premature birth. Severe pregnancy complications affect more than 50,000 women in the United States each year, according to the Centers for Disease Control and Prevention.

"What we know about high blood pressure is that the earlier you have it, the worse your outcomes for [heart disease](#) can be," said Victoria Pemberton, a study author, nurse, and researcher in the Division of Cardiovascular Sciences at the National Heart, Lung, and Blood Institute (NHLBI), part of the National Institutes of Health. "If we can change that course and intervene earlier, such as after a woman has an adverse pregnancy outcome, then we're doing her a great service."

Researchers created the nuMoM2b Heart Health Study, which is supported by the NIH, to examine factors that influence pregnancy outcomes and support the cardiovascular health of new mothers. In this sub-study, researchers followed 4,471 [women](#) who had their first child at one of eight U.S. medical centers between 2011 and 2014. About one in two women were overweight or obese at the start of their pregnancy. The researchers monitored the women from the early stages of their pregnancies and stayed in touch, through self-reporting surveys, phone calls, and clinical visits, for up to seven years after the women gave birth.

The researchers found that roughly 25% of the study participants, 1,102 women, had a pregnancy complication or developed [gestational diabetes](#). Women who experienced a pregnancy complication were more likely to have developed markers for heart disease before or during their first trimester, compared to those who did not experience complications. For

example, women with pregnancy complications were more likely to have higher levels of [blood sugar](#), blood pressure, and inflammation, while women who did not develop complications had normal or lower levels.

Women in the study who had a pregnancy complication or who developed gestational diabetes were also 1.6 times as likely to develop hypertension within seven years. Their risk for stage 2 hypertension, the level at which treatment is often prescribed, doubled.

"This is often why it is said that pregnancy is a window into future cardiovascular health," Pemberton said. "Typically, we think about women who are postmenopausal being at risk for heart disease. We don't think about young women who are in their reproductive years or having babies being at risk for hypertension."

The researchers suggest that screening patients for heart disease, which the American Heart Association and the American College of Cardiology recommend doing every four to six years for adults ages 20-39, could start even earlier for [pregnant women](#). For example, screenings and support for healthy lifestyle choices could be integrated into prenatal or obstetric care. In the study, women who exercised three hours each week had a lower risk for later hypertension.

"During [pregnancy](#) women are in frequent contact with care providers and participate in multiple medical screenings," said Janet M. Catov, Ph.D., the lead study author and a researcher at the University of Pittsburgh Magee-Women's Research Institute. "A strong provider-patient partnership can be a first step in identifying potential risks for [pregnancy complications](#), while creating strategies to support the cardiovascular health of a mother and her child for years to come."

More information: Janet M. Catov et al. Early Pregnancy Atherogenic Profile in a First Pregnancy and Hypertension Risk 2 to 7 Years After

Delivery, *Journal of the American Heart Association* (2021). [DOI: 10.1161/JAHA.120.017216](https://doi.org/10.1161/JAHA.120.017216)

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