

Most people giving birth in the US have poor heart health prior to pregnancy

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Only about 40% of women in the U.S. who gave birth in 2019 had good heart health prior to their pregnancy with excess weight being the major driver of poor pre-pregnancy health, followed by hypertension and diabetes, according to new research published today in a Go Red For

Women spotlight issue of the American Heart Association's peer-reviewed, flagship journal *Circulation*.

The special issue of *Circulation* includes about a dozen articles exploring various cardiovascular considerations during pregnancy.

Poor heart [health](#) puts both mothers-to-be and their children at risk, with [heart disease](#) causing more than one in four pregnancy-related deaths (26.5%), according to the American Heart Association [Heart Disease and Stroke Statistics 2022 Update](#).

"Many [women](#) only begin having regular health care visits once they become pregnant. If women already have overweight or obesity, [high blood pressure](#) or diabetes prior to pregnancy, it is often not diagnosed until pregnancy. However, if identified prior to pregnancy, their health care clinician can help them manage and optimize these conditions before pregnancy," said lead study author Natalie A. Cameron, M.D., an internal medicine specialist and instructor at Northwestern University's Feinberg School of Medicine in Chicago. "Being in [good health](#) prior to pregnancy benefits the long-term health of women and their children. Poor maternal heart health is related to poor outcomes for babies at birth, such as being born early or at a smaller weight for their gestational age, and it is also linked to poor heart health later in life for these children. This connection between maternal heart health and offspring heart health, even years after pregnancy comes as a surprise to many."

In an analysis of data from the U.S. Centers for Disease Control and Prevention's Natality Database 2016-2019, Cameron and colleagues identified the pre-pregnancy heart health risk factors of 14,174,625 women with live births. The women ranged in age from 20-44 years old; 81.4% were between ages of 20 to 34; 52.7% were non-Hispanic white; 22.7% were Hispanic/Latina; and 14% were non-Hispanic Black. Optimal heart health was defined as having a normal body weight with a

Body Mass Index (BMI) between 18-24.9 kg.m², and not having hypertension or diabetes.

Researchers found:

- The overall percentage of women experiencing optimal pre-pregnancy heart health declined more than 3% over the course of the three years, from 43.5% in 2016 to 40.2% in 2019.
- In 2019, the percentage of women with good heart health ranged from 37.1% in women ages of 40-44 years old to 42.2% among those ages of 30-34 years old.
- More than one in two women had at least one risk factor for cardiovascular disease before becoming pregnant; these risk factors included being overweight or obese, having high blood pressure or having diabetes.
- Being overweight or obese was the most common reasons for poor heart health before pregnancy.

The researchers also compared data by geographical region, and even as good heart health was declining overall across the country, there were geographic differences. Good heart health was lower in states in the South (38.1%) and the Midwest (38.8%) states, compared with states in the West (42.2%) and Northeast (43.6%). There were also variations among states, ranging from less than one-third of women in Mississippi (31.2%) having good heart health prior to pregnancy compared to nearly half (47.2%) in the best performing state, Utah.

The researchers note these geographical differences appear to be mostly impacted by social determinants of health, which may include educational status, Medicaid enrollment, access to preventive care, the ability to afford healthy foods and the characteristics of the neighborhoods in which the women lived.

"These geographic patterns are, unfortunately, very similar to what we see for heart disease and stroke in both men and women, and they indicate that social determinants of health play a critical role in maternal heart health as well," said senior study author Sadiya S. Khan, M.D., M.S., FAHA, an assistant professor of medicine in the division of cardiology at Northwestern University's Feinberg School of Medicine in Chicago. "In addition to optimizing health for those interested in becoming pregnant, it's important to focus on optimizing cardiovascular health throughout young adulthood because nearly half of pregnancies are unplanned. We need to emphasize heart health across the life span."

"Pregnancy is nature's stress test. There are many changes in the body during pregnancy, particularly the heart, including increased blood circulation that put an extra burden on a woman's heart. Making sure you are in the best health you can be prior to getting pregnant will assure you have the best pregnancy outcomes," said co-author of the [American Heart Association's Scientific Statement on Cardiovascular Consideration in Caring for Pregnant Patients](#), Garima V. Sharma, M.B.B.S., director of cardio-obstetrics and an assistant professor of medicine at Johns Hopkins School of Medicine in Baltimore, who was not involved in this study. "As part of your pre-pregnancy plan, speak to your doctor about cardiovascular disease risk factors such high blood pressure, diabetes and high cholesterol, and get these conditions under control before you become pregnant. Maintaining a balanced diet and healthy weight and not smoking or using tobacco products are also important."

The healthier a woman is before, during and after her pregnancy will ensure the best health results for both mother and baby, noted Sharma, who is an assistant professor of medicine in the division of cardiology and department of medicine at the Johns Hopkins University School of Medicine in Baltimore.

As much as health care professionals and individuals can do to address heart health, the researchers hope these findings can drive more significant changes on public health policy and societal levels.

"We need to shift the conversation from solely 'what can women do' to what can society do to support mothers and pregnant individuals," Khan said. "We need federal and state-level public health policies that ensure there is equitable access to care before, during and after [pregnancy](#), as well as economic investment in communities to support healthy behaviors, such as green spaces for exercise and access to heart-[healthy food](#) choices."

"In future research, we aim to specifically identify the early social and economic factors behind these state-level differences," Cameron said. "This knowledge can also help tailor public health interventions to equitably improve the [heart](#) health of women and their children across generations in the U.S."

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