

Complications in pregnancy linked to increased risk of heart disease

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Certain complications during pregnancy bring an increased risk of heart disease later on. However, there is still much to learn about how arteriosclerosis develops between pregnancy and heart disease later in

life. A large new study led by researchers from Lund University in Sweden shows that narrowing and calcification of the blood vessels of the heart are more common in women previously affected by pregnancy complications.

Despite [complications](#) in pregnancy having increasingly been acknowledged as a new type of risk factor for [heart disease](#), it is yet to be determined how this information can best be used within healthcare.

"Our results suggest that the correlation exists even among [women](#) with a low expected risk of cardiovascular disease. The study is an important piece of the puzzle in understanding how women with pregnancy complications should be followed-up by their healthcare provider after pregnancy," says Simon Timpka, associate professor of clinical epidemiology who leads the research team Perinatal and Cardiovascular Epidemiology at Lund University and is a resident in obstetrics and gynecology at Skåne University Hospital.

Researchers included 10,528 women from the National Medical Birth Register who have subsequently gone on to participate in the large population study SCAPIS—Swedish CARDiopulmonary bioImage Study—at age 50-65 years.

All the women underwent CT scanning of the coronary arteries (coronary computed tomography angiography) in order to detect calcification of blood vessels, narrowing and other signs of heart disease. The researchers investigated signs of heart disease by history of five common complications in pregnancy: pre-eclampsia, [high blood pressure](#) during pregnancy (gestational hypertension), preterm delivery, gestational diabetes and infants born small for gestational age.

Four percent more of the women with [pregnancy complications](#) had visible atherosclerosis of the coronary arteries, compared to the group

who had not had complications in pregnancy (32 percent as opposed to 28 percent).

The greatest link was for pre-eclampsia and gestational hypertension. Among women who had not experienced any complications in pregnancy, two percent had narrowing in coronary arteries while the corresponding number among women who previously suffered from pre-eclampsia or pregnancy-induced hypertension was five percent.

"To reduce the risk of these women developing coronary heart disease in the future, it is important that they check risk factors such as [blood pressure](#), [blood sugar](#) and cholesterol regularly," says Sofia Sederholm Lawesson, consultant cardiologist at the University Hospital in Linköping and one of the co-authors of the study.

"In this study, we have investigated many different associations between complications in pregnancy and heart disease all at once, so it is possible that chance might explain individual results," says Simon Timpka. "Yet the pattern is relatively consistent, which makes it easier to draw conclusions including that women with prior pre-eclampsia have changes in the coronary arteries that are equivalent to the changes seen in women who have not experienced complications in pregnancy but are five to ten years older."

According to Simon Timpka, CT scans of the coronary arteries are increasingly used in patients presenting with symptoms, but there is still a lack of large studies into the significance over time of some of the studied changes among women without current symptoms.

"Even if our study provides new knowledge on the development of [coronary heart disease](#) among middle-aged women who have previously suffered complications in [pregnancy](#), there is a need for long-term studies in order to understand the true meaning that our discoveries have

for symptomatic disease," concludes Simon Timpka.

The paper is published in *JAMA*.

More information: Sofia Sederholm Lawesson et al, Association Between History of Adverse Pregnancy Outcomes and Coronary Artery Disease Assessed by Coronary Computed Tomography Angiography, *JAMA* (2023). [DOI: 10.1001/jama.2022.24093](https://doi.org/10.1001/jama.2022.24093)

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