

Complicated pregnancies increase the risk of dying of cardiovascular diseases, finds study

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Researchers from University of Bergen have investigated the relationship between 40-year-old women's pregnancy histories and later risk of dying of cardiovascular diseases.

It is established that women with a [complication of pregnancy](#) are at about 2-fold increased risk of later cardiovascular disease. However, most previous studies have focused on individual complications and not full pregnancy histories.

"Pregnancy [history](#) is a unique feature of women's health, readily available at no cost, and relevant to the most frequent cause of death facing women," says Associate Professor, Liv Grimstvedt Kvalvik at the Department of Global Public Health and Primary Care, University of Bergen, Norway

She has, together with Researchers at National Institute of Environmental Health Sciences, U.S. and colleagues at the University of Bergen, investigated the link between a woman's total pregnancy history at 40 years of age and her relative risk of dying from atherosclerotic cardiovascular disease (ASCVD).

[The article](#) is published in the *Journal of the American Heart Association*.

Five-time and even higher risk of dying of cardiovascular disease

The study combined several Norwegian registries covering the period 1967 to 2020. More than 800,000 women surviving to 40 years of age were identified.

The main outcome was the time to ASVC mortality through age 69 years.

The exposure was a woman's number of recorded pregnancies, from zero to four, and the number of those with complications, such as preterm delivery before 35 gestational weeks, preeclampsia ([high blood pressure](#)

and protein in the urine), [placental abruption](#) (when the placenta separates from the uterus), perinatal death, and term or near-term birth weight less than 2,700 grams.

They found that pregnancy history at 40 years of age is strongly associated with ASCVD mortality:

"Among women reaching 40 years of age, risk of ASCVD mortality through 69 years of age increased with the number of complicated pregnancies in a strong dose–response fashion," says Kvalvik.

Within each level of total number of pregnancies women had by age 40, mortality risk increased with increasing number of complicated pregnancies. Women with more than one complicated pregnancy by 40 years of age can have increased risks of three to five-fold and even greater. In comparison, women with the lowest with three pregnancies without complications, had the lowest ASCVD mortality risk.

Potential benefit from interventions at an early age

"There is increasing [scientific evidence](#) supporting the associations between adverse pregnancy outcomes and later CVD, even as women with complications may be unaware of their increased CVD risk," says Kvalvik.

"Our findings support the potential use of complete pregnancy history to identify relatively [young women](#) who might benefit from interventions to reduce cardiovascular [mortality](#) and morbidity before other clinical indicators of CVD risk have fully emerged."

More information: Liv G. Kvalvik et al, Pregnancy History at 40 Years of Age as a Marker of Cardiovascular Risk, *Journal of the American Heart Association* (2024). [DOI: 10.1161/JAHA.123.030560](https://doi.org/10.1161/JAHA.123.030560)

Provided by University of Bergen

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