

# Heart disease risk factors in women highlight need for increased awareness, prevention

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Heart disease is the leading cause of death among women, and women who have complications during pregnancy, such as high blood pressure or gestational diabetes, have a significantly higher risk of heart disease and stroke later in life, according to a new scientific statement from the American Heart Association, published in *Circulation*.

The findings, along with several studies and commentaries focused on research in women, are featured in a special Go Red for Women Spotlight issue of *Circulation*.

The analyses identify a substantial number of cardiovascular risk factors specific to or predominant in women, discuss the need to raise awareness of heart disease as a major health risk for women, and emphasize the need for prevention strategies to reduce adverse cardiovascular outcomes and achieve [health equity](#), particularly among women from diverse racial and ethnic groups or underrepresented communities.

## **Improving heart health for pregnant and post-partum women is critical**

The new scientific statement from the American Heart Association, "Opportunities in the Postpartum Period to Reduce Cardiovascular Disease Risk Following Adverse Pregnancy Outcomes," summarizes the current evidence about how to manage heart disease risk factors during [pregnancy](#) and promote cardiovascular health in women after delivery using the AHA's [Life Essential 8](#) cardiovascular health metrics as a framework.

An estimated 10–20% of women experience pregnancy complications, such as [high blood pressure](#), gestational diabetes and/or preterm birth (delivery before 37 weeks). These complications often arise due to metabolic and vascular changes during pregnancy. Adverse pregnancy outcomes are becoming increasingly common and are considered significant risk factors for future long-term complications, including increased lifetime risk of heart disease, [heart failure](#), stroke, [chronic kidney disease](#) or vascular dementia.

Additional findings in the statement include:

- High blood pressure is the most prevalent cardiovascular condition during pregnancy, and in the last two decades, there has been a 25% increase in preeclampsia, a condition characterized by high blood pressure and high levels of protein in the urine during pregnancy.
- Women who experience high blood pressure during pregnancy have a two- to four-fold higher risk of developing chronic hypertension between two to seven years after delivery compared to women with normal blood pressure during pregnancy. ’
- Women who have had gestational diabetes are eight times more likely to develop subsequent type 2 diabetes compared with women who did not have gestational diabetes. Prior gestational diabetes is also associated with recurrent gestational diabetes in future pregnancies.
- Obesity increases the risk for high blood pressure during pregnancy, gestational diabetes and future heart disease. Obesity is also associated with persistent high blood pressure after pregnancy.
- Women with a history of one or more adverse pregnancy outcomes experience heart attack and stroke at younger ages compared to women who had no pregnancy complications.

Jennifer Lewey, M.D., M.P.H., chair of the writing group for the scientific statement, said, "Despite these well-established associations, little is known about the care that may best reduce cardiovascular risk in women who had pregnancy complications, and what efforts may be appropriate to reduce their long-term heart disease risk and optimize cardiovascular health throughout their lifespan. Pregnant and postpartum women have traditionally been excluded from clinical trials, and, therefore, we have far less evidence to help guide their care."

According to the statement, early detection and treatment of heart disease risk factors, such as high blood pressure, type 2 diabetes and

high cholesterol, after pregnancy may help prevent future heart attack, heart failure and stroke, especially among those who have experienced one or more complications during pregnancy.

"Adverse pregnancy outcomes can be a wake-up call to a young person that they may be at risk for heart disease and stroke later in life. By identifying these women at a younger age, we will be able to act earlier to prevent and treat risk factors and promote healthy lifestyle changes," said Dr. Lewey, who is director of the Penn Women's Cardiovascular Health Program and an assistant professor of medicine at the University of Pennsylvania Perelman School of Medicine in Philadelphia.

Social determinants of health, such as race and ethnicity, socioeconomic status and geography (rural vs. urban communities), also affect the prevalence of pregnancy complications and are key contributors to disparities in prenatal heart disease risk factors, access to care, and outcomes for both the mother and infant.

Compared with white women, Black women are more likely to have sub-optimal measurements of cardiovascular health, including blood pressure, blood glucose levels and body mass index (BMI). Black women also have an increased risk of developing high blood pressure during pregnancy, the highest maternal mortality rates and a higher risk of heart disease across their life span.

The first year after delivery is a critical time to assess long-term heart disease risk and implement lifestyle changes and treatment, if needed, to improve [heart health](#) for women and reduce the risk of future pregnancy complications for individuals who plan on future pregnancies. In particular, health care in the "fourth trimester" (12 weeks after delivery) tailored to support disorders of pregnancy, has great potential to improve cardiovascular health across the life course.

Strategies used to promote cardiovascular health in non-pregnant individuals may be successfully adapted to the postpartum period and improve cardiovascular health across a woman's lifetime. These may include regular cardiovascular risk factor screening and treatment, ensuring transitions of care among obstetricians, primary care professionals, and health system and community-based interventions.

However, many women face significant barriers in accessing primary care after delivery. Up to 40% of women do not access postpartum care, and only an estimated 18% to 25% of postpartum patients with pregnancy complications or chronic health conditions are seen by a primary care clinician within six months of delivery.

Lifestyle interventions based on the AHA's Life's Essential 8 cardiovascular health metrics are urged to optimize heart health, particularly during the first 12 months after delivery. Evidence-based approaches that target achieving a healthy weight, healthy diet and regular physical activity can help reduce short- and long-term heart disease risks associated with adverse pregnancy complications.

## **Gender-specific differences in heart disease risk factors and outcomes**

In "The Feminine Face of Heart Disease 2024," author and cardiovascular pioneer Nanette K. Wenger, M.D., FAHA, provides a historical perspective on gender barriers in cardiology and identifies gender-specific differences in heart disease, including risk factors, progression of the disease, treatments and outcomes specifically among women.

"For most of the last century, heart disease was considered a problem for men, and women were believed to have cardioprotective benefits from

female sex hormones such as estrogen," said Dr. Wenger. "However, emerging evidence shows that there are a substantial number of heart disease risk factors that are specific to women or predominant in women."

According to Dr. Wenger, there is also a presumption that heart disease symptoms in men are the implicit gold standard and cardiovascular symptoms in women are "atypical." Despite the fact that heart disease is the leading cause of death for women, only 22% of primary care physicians and 42% of cardiologists in a nationwide survey reported that they felt prepared to address [cardiovascular disease risk](#) in women.

High blood pressure, a major risk factor for heart disease, accounts for 20% of deaths in women, and obesity has a particularly high impact on the development of high blood pressure in women. Other gender-specific risk factors include:

- Early onset of menstruation during puberty;
- Premature menopause;
- Inflammatory and autoimmune disorders;
- Depression and anxiety, particularly at younger ages;
- Pregnancy complications such as high blood pressure, [gestational diabetes](#), pre-term delivery and low- and high-birth weight infants; and
- Chemotherapy for cancers that occur primarily in women such as breast cancer.

Previous national educational advocacy programs improved awareness of heart disease as a major health risk for women, yet that awareness has decreased over the past decade. A 2019 survey found that most women were unable to identify the signs or symptoms of a heart attack, with recognition lowest among young Asian, Black and Hispanic women. These disparities in awareness of [heart disease risk factors](#) and

knowledge of symptoms affect treatment strategies, which may lead to poorer outcomes.

Studies show the lifetime stroke risk is comparable for women and men, but women with ischemic stroke are less likely to be transported to the hospital by emergency medical services and to receive prompt imaging and blood thinners. Women are also more likely to die within 30 days of stroke hospitalization.

Wenger said, "About 80–90% of cardiovascular disease is preventable. Implementing preventive strategies early could have a significant impact on reducing premature cardiovascular disease, stroke and related mortality for women."

Public health interventions focused on social determinants of health are needed to optimize cardiovascular health across a woman's life span. More research on cardiovascular prevention and treatment for women is needed, focusing on people in under-resourced communities.

Dr. Wenger is an emeritus professor of medicine in the division of cardiology at Emory University School of Medicine, consultant to the Emory Heart and Vascular Center, founding consultant to the Emory Women's Heart Center and director of the Cardiac Clinics and Ambulatory and Electrocardiographic Laboratory at Grady Memorial Hospital in Atlanta.

Additional research articles in the special Go Red for Women issue of *Circulation* include:

- An analysis of over 60,000 patients with newly diagnosed heart failure with reduced ejection fraction found significant disparities in guideline-directed medical therapies (GDMT) for women and men, with women having a 23% lower probability of



achieving optimal GDMT utilization within 12 months after diagnosis. ("Sex Disparities in Longitudinal Utilization and Intensification of Guideline Directed Medical Therapy among Patients with Newly Diagnosed Heart Failure with Reduced Ejection Fraction," lead author: Ambarish Pandey, M.D.)

- A two-decade-long study of nearly 50,000 Black women found that those who reported experiencing higher levels of perceived interpersonal racism in housing, employment and the criminal justice system were nearly 30% more likely to develop coronary heart disease. ("Perceived Interpersonal Racism in Relation to Incident Coronary Heart Disease Among Black Women," lead author: Shanshan Sheehy, Sc.D.)
- A study of 3,000 middle-aged women found that insomnia and short sleep duration were both associated with a higher risk of cardiovascular disease later in life, underscoring the need to address sleep problems to reduce [women's heart disease](#) risk as they age. ("Trajectories of Sleep Over Midlife and Incident Cardiovascular Disease Events in the Study of Women's Health Across the Nation," lead author: Rebecca Thurston, Ph.D.)

The new scientific statement was written by Lewey and others on behalf of the American Heart Association's Cardiovascular Disease and Stroke in Women and Underrepresented Populations Committee of the Council on Clinical Cardiology; the Council on Cardiopulmonary, Critical Care, Perioperative and Resuscitation; and the Council on Cardiovascular and Stroke Nursing. American Heart Association scientific statements promote greater awareness about cardiovascular diseases and stroke issues and help facilitate informed health care decisions.

Scientific statements outline what is currently known about a topic and what areas need additional research. While scientific statements inform the development of guidelines, they do not make treatment recommendations. American Heart Association guidelines provide the



Association's official clinical practice recommendations.

**More information:** Opportunities in the Postpartum Period to Reduce Cardiovascular Disease Risk After Adverse Pregnancy Outcomes: A Scientific Statement From the American Heart Association, *Circulation* (2024). [DOI: 10.1161/CIR.0000000000001212](https://doi.org/10.1161/CIR.0000000000001212)

Provided by American Heart Association

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