

# Early Identification and Treatment of Women's Cardiovascular Risk Factors Prevents Cardiovascular Disease, Saves Lives, and Protects Future Generations

The Right Care Initiative  
Women's CVD Writing Group  
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# Members of the Right Care Women's CVD Writing Group will discuss aspects of our consensus brief and recommendations



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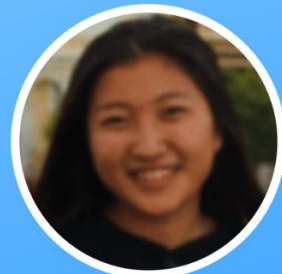
## Right Care Women's Cardiovascular Disease Writing Group



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### Early Identification and Treatment of Women's Cardiovascular Risk Factors Prevents Cardiovascular Disease, Saves Lives, and Protects Future Generations

Cardiovascular diseases (CVD) including heart attacks, strokes, heart failure, and uncontrolled hypertension are leading causes of death among women of all ages<sup>1</sup>. These conditions strike women at younger ages than is commonly understood, causing death, disability, and family devastation. Despite efforts to increase awareness of CVD among women, over the past decade there has been stagnation in the reduction of CVD in women, and CVD among younger women and women of color has actually increased<sup>2</sup>. Many heart attacks, strokes, and hypertensive conditions are preventable with early detection and awareness of risk factors. Lifestyle changes and better application of guideline-based care can prevent premature deaths from CVD<sup>3</sup>. Conversely, retention of adverse lifestyles among women, along with provider underestimation of women's risk categorization and failure to treat CVD risk factors, can widen gender disparities in CVD prevention<sup>4</sup>.

There is a great misperception that CVD is not an issue for women until after menopause. The data speak otherwise. In 2019, the total CVD (e.g., hypertensive, ischemic heart, and cerebrovascular disease) crude death rates per 100,000 United States women occurred at higher rates than breast and cervical cancer, combined, from age 35+ (Table 1)<sup>5</sup>. Women are more likely to die from CVD than from any other condition, including those women aged 35-44, 45-54, and 55-64 years of age<sup>5</sup>. Additionally, young women ages 18-35 have 44% more ischemic stroke than men<sup>6</sup>. CVD also accounts for about 33% of the rising maternal deaths. Thus, young women are especially important to target for screening, treatment, and research because CVD prevention during this life stage can have great personal and societal health benefits<sup>7</sup>.

Table 1: Age-Stratified Crude Death Rates per 100,000 Women – US (2019)

Age	Crude Death Rates per 100,000 United States Women (2019)					
	Hypertensive Diseases (I10-I15)	Ischemic Heart Diseases (I20-I25)	Cerebrovascular Diseases (I60-I69)	Total HTN, IHD & Cerebrovascular Diseases	Breast Cancer (C50)	Cervical Cancer (C53)
35-44 years	3.6	5.5	3.7	12.8	9.2	2.6
45-54 years	9.7	20.5	10.6	40.8	22.2	4.1
55-64 years	21.0	61.0	24.6	106.6	40.4	4.6

Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death: 1999-2019 on CDC WONDER Online Database, released in 2020. Data are from the Multiple Cause of Death Files, 1999-2019, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/ucd10.html> on Oct 25, 2021.

While women have many traditional cardiovascular risk factors, some risks, including diabetes, smoking, high density lipoproteins, and triglycerides levels may have a greater impact on coronary heart disease risk in women compared with men<sup>8</sup>. But women may also be at risk for heart attack and stroke based on adverse pregnancy outcomes, hormonal factors, and increased rates of autoimmune conditions (lupus/rheumatoid arthritis)<sup>9,10</sup> (Figure 1)<sup>11</sup>. Women also have high rates of depression and other conditions that impact pro-inflammatory factors, thus increasing their vulnerability to CVD. Moreover, being African American, being pregnant at older ages (>35 years), or having obesity boosts maternal risk<sup>12</sup>. CVD risk factors can also adversely impact the fetus and contribute to future CVD risk in the next generation<sup>13</sup>. With a trend towards pregnancies later in life, more attention is needed to identify and manage women's CVD risk pre-conception.

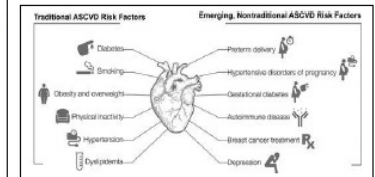
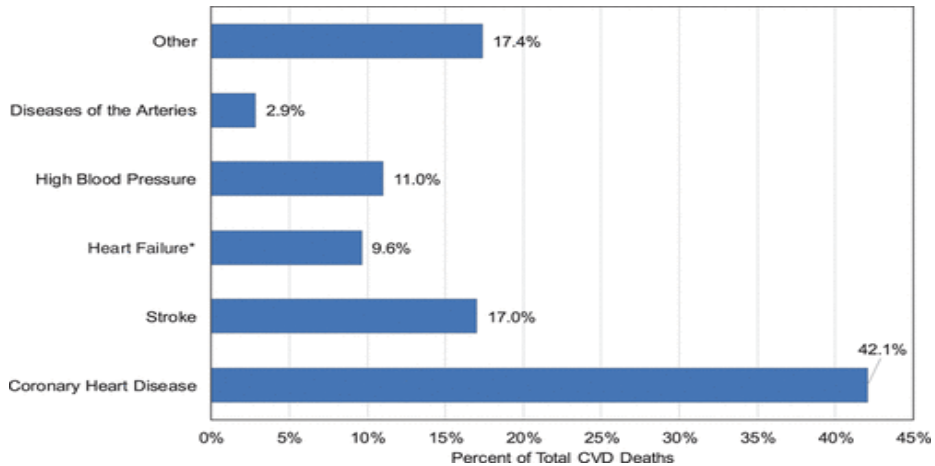


Figure 1: Traditional versus emerging, non-traditional ASCVD risks among women

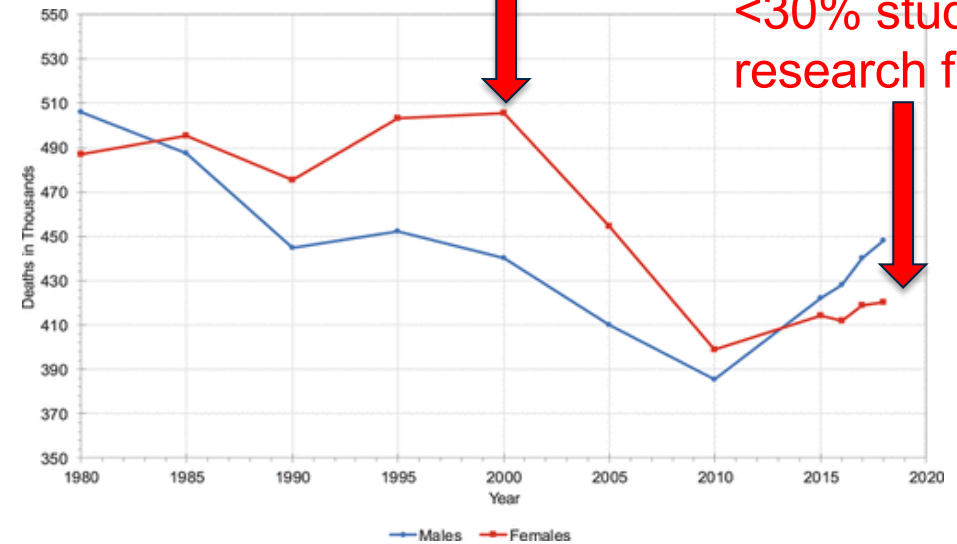
# Trends in Cardiovascular Disease (CVD) Mortality Among Women & Men – 1979-2018



*CVD Mortality Trends for Women & Men*

Research focus on CVD in women

Women comprise half of CVD but <30% studied and research funded



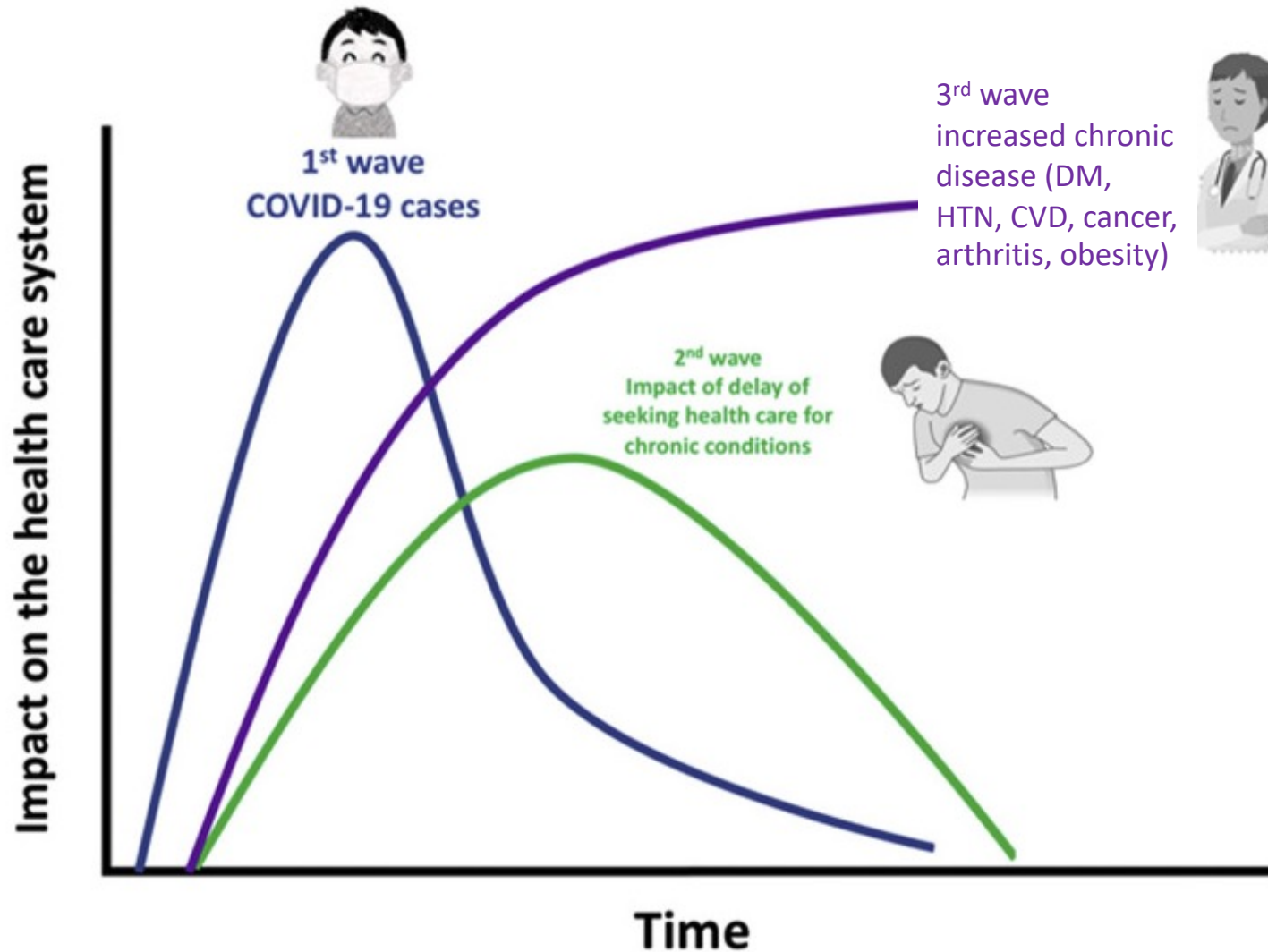
**Sex Differences in Presentation, Diagnostic Evaluation, & Management of Women with Ischemic Heart Disease**

**30% CVD Mortality Decline for Women**

**Increased Awareness, Focused Clinical Research, & Application of Guideline-Directed Care**

**However, Declines for Women Are Less Particularly for Younger Women of Diverse Race & Ethnicity**



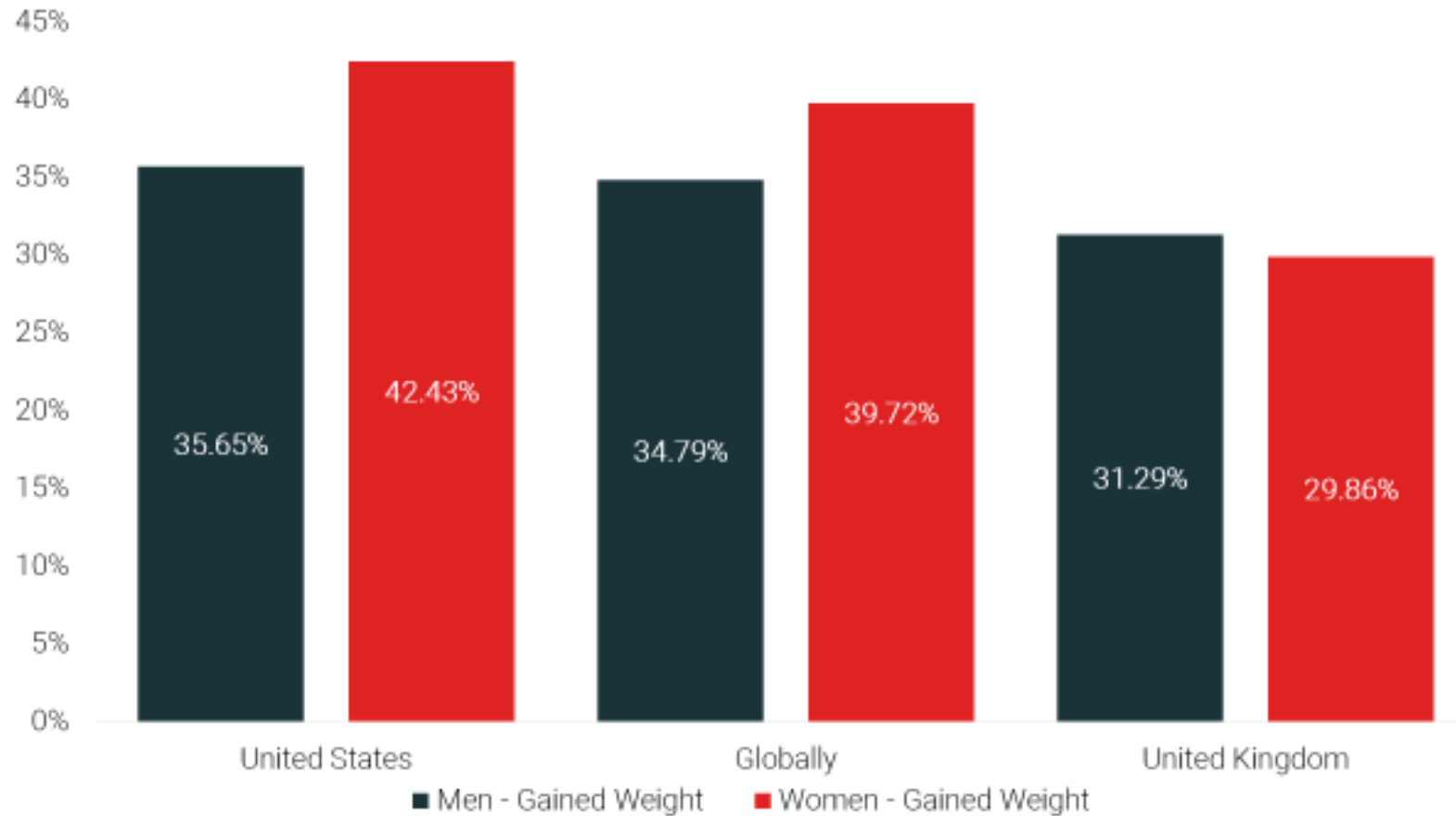


◆ A tsunami of chronic health conditions as a result of the SARS-CoV-2 pandemic, especially cardiometabolic disease, will produce an enormous wave of death and disability, particularly in women, that demands immediate, comprehensive strategies.

◆ The COVID-19 pandemic has magnified societal and health care disparities; millions of people lost jobs, particularly women, minority and rural populations; numerous industries and small businesses have been financially decimated; and every aspect of scientific research and medicine has been altered -- education, research and clinical care.

Anticipated health care effects of the COVID-19 pandemic.

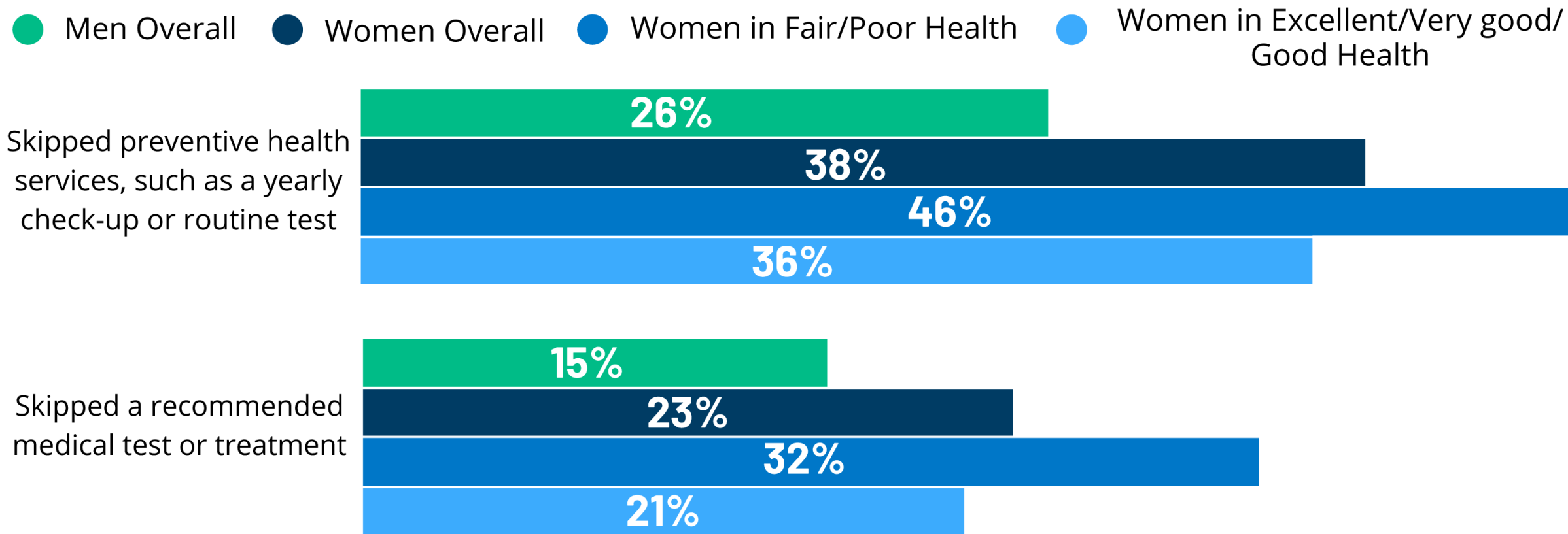
## Percentage of people who gained weight during the pandemic by gender



This difference between men and women was the most dramatic in the United States; women from the US were 19.02% more likely to gain weight than men.

# A Larger Share of Women Have Gone Without Health Care Services During the Pandemic, Particularly Women in Fair or Poor Health

Since March 1, 2020, have you experienced any of the following because of the COVID-19 pandemic, or not?



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- CVD is on the rise in younger women, and the leading killer of women in pregnancy. What needs to be done:
  - 1) Consistently implement current guidelines for CVD risk factor screening and treatment in women of all ages;
  - 2) Increase identification of very young women with familial hypercholesterolemia and early onset hypertension;
  - 3) Improve uptake of physician/mid-level provider CVD risk factor screening and treatment during women's reproductive age period;
  - 4) Expand post-partum Medicaid for at least 12 months to allow ongoing risk factor assessment and treatment post-delivery.

## Age-Stratified Crude Death Rates per 100,000 Women – US (CDC Wonder, 2019)

Crude Death Rates per 100,000 United States Women (2019)						
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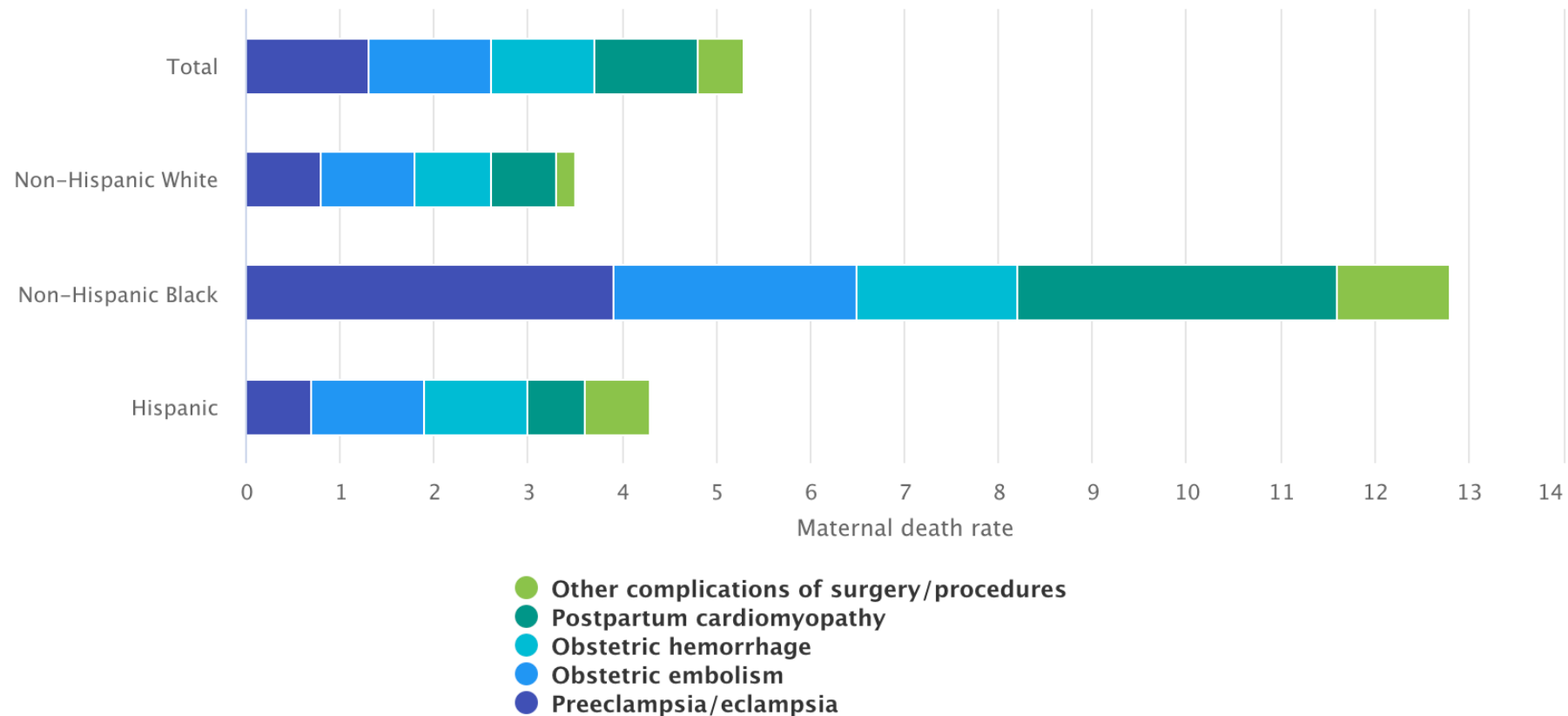
Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2019 on CDC WONDER Online Database, released in 2020. Data are from the Multiple Cause of Death Files, 1999-2019, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/ucd-icd10.html> on Oct 25, 2021.

In 2019, the total CVD (e.g., hypertensive, ischemic heart, and cerebrovascular disease) crude death rates per 100,000 United States women occurred at higher rates than breast and cervical cancer, combined, from age 35+.



# Black Women Over 3 Times More Likely to Die in Pregnancy, Postpartum

U.S. MATERNAL DEATHS PER 100,000 LIVE BIRTHS FOR FIVE LEADING CAUSES OF MATERNAL DEATH BY RACE/ETHNICITY, 2016-2017

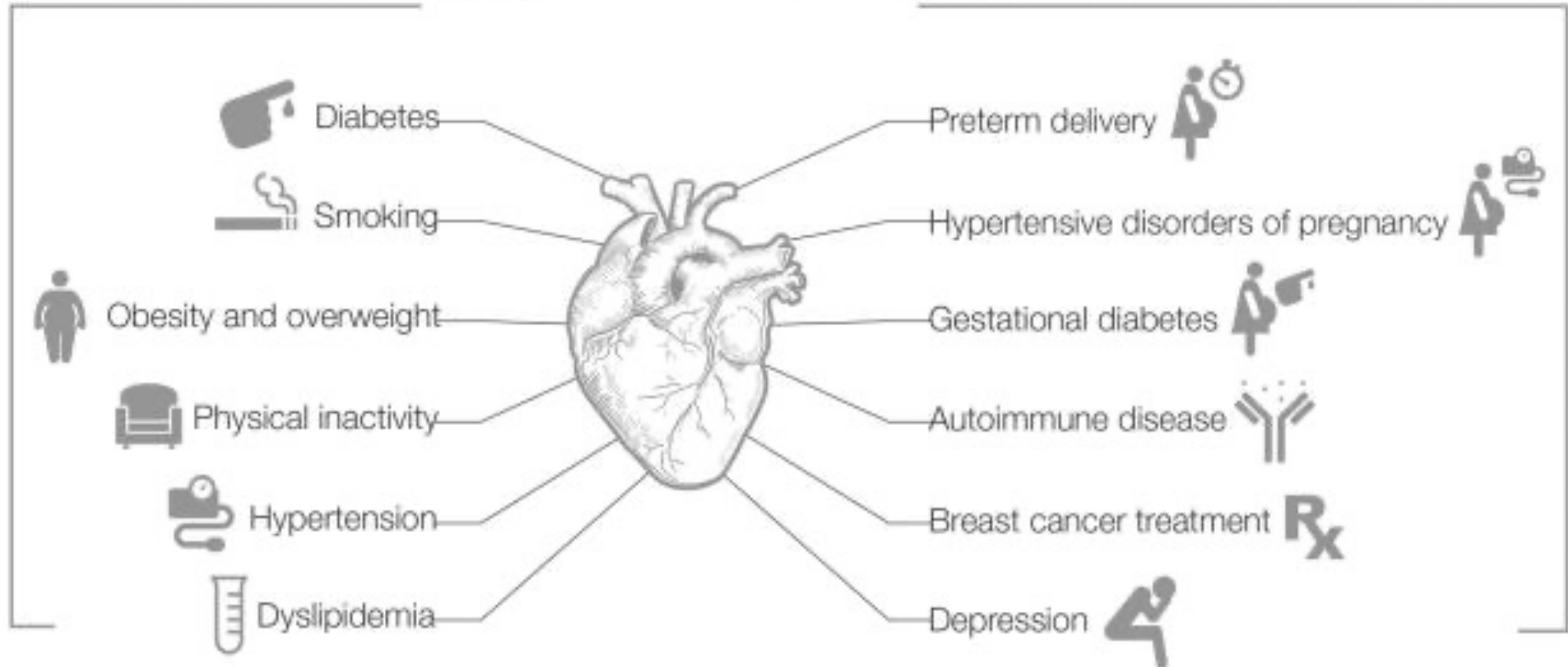


Black Women Over Three Times More Likely to Die in Pregnancy, Postpartum Than White Women, New Research Finds. PRB. December 6, 2021. Accessed May 6, 2022. <https://www.prb.org/resources/black-women-over-three-times-more-likely-to-die-in-pregnancy-postpartum-than-white-women-new-research-finds/>

# Traditional versus emerging, non-traditional ASCVD risks among women

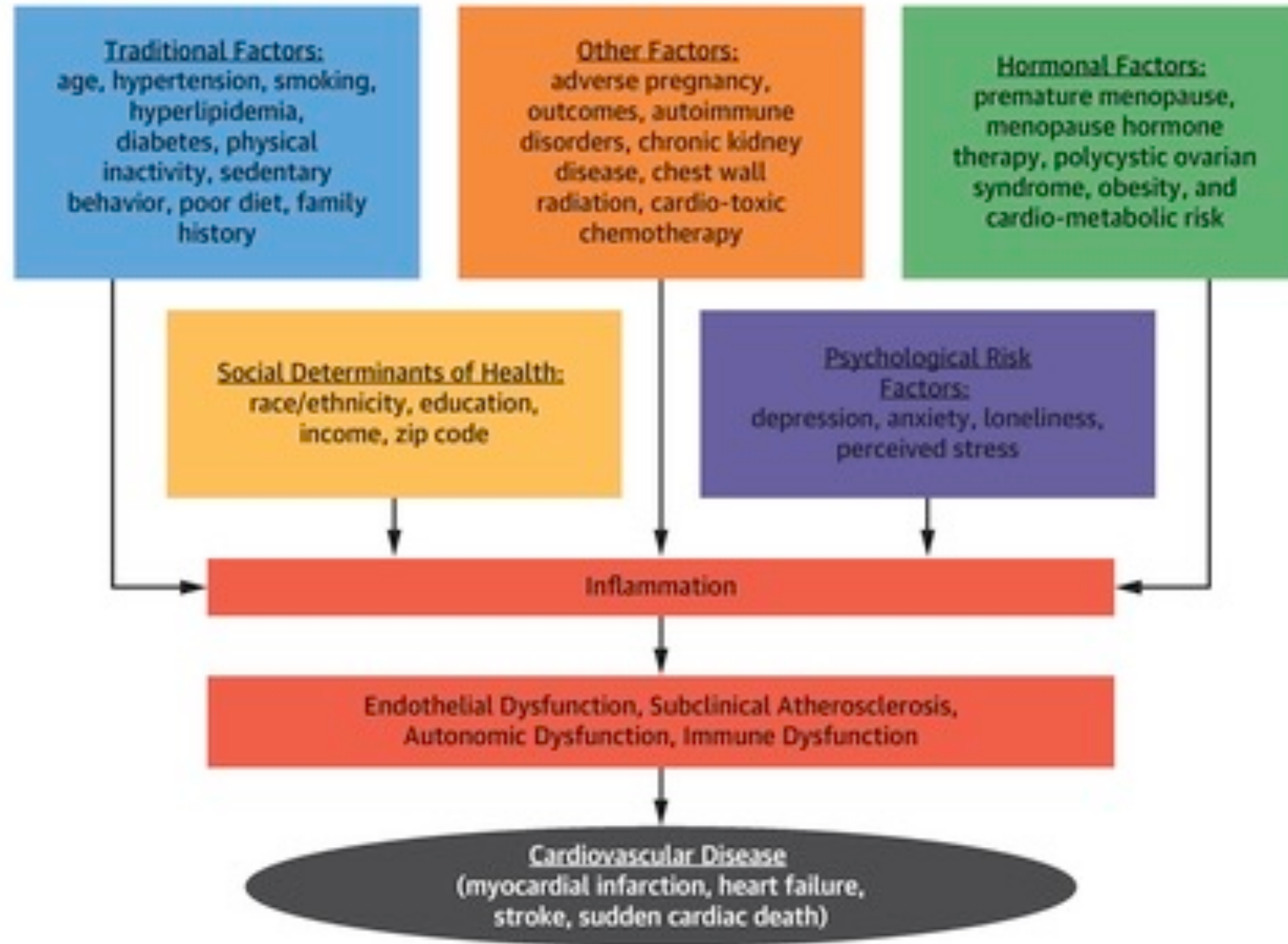
## Traditional ASCVD Risk Factors

## Emerging, Nontraditional ASCVD Risk Factors

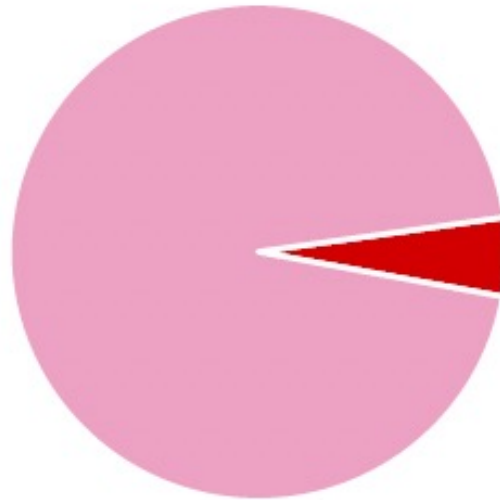


Garcia M, Mulvagh SL, Merz CN, Buring JE, Manson JE. Cardiovascular Disease in Women: Clinical Perspectives. *Circ Res.* 2016;118(8):1273-1293. doi:10.1161/CIRCRESAHA.116.307547

# Cardiovascular Disease Risk Factors in Women



## Atherosclerosis found in 1 in 20 Women by Age 45 Indicating Need for Preventive Treatment



■ CAC ■ No CAC

	n	%
African-American women	800	4.9
White women	860	5.2
Total women	1,660	5.1

**CAC = Coronary Artery Calcium (subclinical atherosclerosis)**

Adapted from Table 1 of Loria CM, Liu K, Lewis CE, et al.. Early Adult Risk Factor Levels and Subsequent Coronary Artery Calcification. *Journal of the American College of Cardiology*. 2007;49(20):2013-2020. doi:10.1016/j.jacc.2007.03.009.

- The NIH funded CARDIA study of atherosclerosis among the young finds that already at age 45, 1 in 20 women test positive for calcium deposits in their coronary arteries, providing concrete evidence of established atherosclerosis, and evidence that the biological mechanisms leading to heart attack and stroke are already in motion, likely to progress if left untreated.
- Kaiser research clinics, along with medical centers around the country, have been monitoring patients enrolled in this CARDIA study ever since 1985.
- Finding these vulnerable women and triaging them for preventive therapy must be a priority.