

# 20 Things You Didn't Know About Women and Heart Disease

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**1.** Although mortality is decreasing for both women and men, heart disease remains the number one killer of women worldwide in both developed and developing nations. Women are, on average, 10 years older than men when they develop heart disease, but this alone does not explain differences in mortality rates.

**2.** Unlike breast cancer, heart disease kills quickly and strikes more often. Nearly half of all sudden cardiac deaths occur outside the hospital, and women account for 39% of these deaths. Coronary heart disease (CHD) kills 215,000 women yearly compared with 41,000 women from breast cancer.

**3.** Smoking can be fatal. Smoking is the most important preventable cause of ischemic heart disease (IHD) in women, particularly in women younger than 50 years. Risk rises with the amount of tobacco consumed, and the risk associated with smoking is compounded by concurrent use of oral contraceptives.

**4.** Diabetes confers greater risk for heart disease in women than men.

Protection from heart disease conferred by premenopausal status is lost for women with diabetes, making their risk equal to men. The death rate from cardiovascular disease is 3 times higher in women compared with men with diabetes.

**5.** Hormone therapy: It's complicated. Hormone replacement therapy does not prevent heart disease and increases the risk for stroke and breast cancer. The negative effects of hormone replacement therapy are more pronounced in older women. For women suffering from significant menopausal symptoms, the lowest effective dose of estrogen for the shortest amount of time should be used. A dosage of 0.5 to 1 mg of 17 beta-estradiol orally daily or 0.3 to 0.625 mg of conjugated equine estrogen orally daily or 25 to 50 µg of 17 beta-estradiol by transdermal patch is recommended. Transdermal hormone therapy should be the first choice for women who are either at an increased risk for CHD or with preexisting disease because of its lesser effects on coagulation.

**6.** Psychological factors that put women at differential risk for IHD and myocardial infarction include depression, perceived stress at home, low locus of control, and major stressful life events. Suppressed anger and marital stress predict poorer outcomes in both healthy women and those with IHD. Compared with men, emotional stress is more likely to trigger an acute coronary event in women than physical exercise. Conversely, positive psychological attri-

butes such as optimism and supportive relationships are associated with reduced risk for incident IHD.

**7.** Traditional risk factor measures may not be as reliable in women compared with men. Women have some unique cardiovascular risk factors including low estrogen levels, elevated testosterone levels, polycystic ovarian syndrome, and elevated C-reactive protein. Compared with the Framingham risk tool, the Reynolds risk score reclassified 15% of women from intermediate to high risk and may be a better measure for women as it includes C-reactive protein and family history of CHD. Also, pregnancy-related preeclampsia and gestational diabetes increase the risk for subsequent CHD directly and indirectly.

**8.** The Yentl syndrome endures. Women don't look like men so their heart disease may go unrecognized, or they are given therapies that are not effective.<sup>1</sup> In fact, 50% of women with heart disease show normal coronary arteries on angiogram versus 17% of men.

**9.** Women with acute coronary syndrome (ACS) report less typical symptoms such as fatigue, upper back pain, and nausea, along with chest pain. Up to 35% of women do not experience chest pain with ACS. In addition, women may not experience chest pain with exertion, have it for prolonged periods, or get relief with rest. In 50% to 60% of women, the initial presentation of IHD is an

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acute myocardial infarction or sudden cardiac death, with no prior report of chest pain.

**10.** It may not be “acid reflux.” Women frequently attribute symptoms of ACS to indigestion, gastroesophageal reflux disease, stomach flu, or gas. Clinicians have been shown to do the same. This leads many women to misinterpret or minimize ACS symptoms as being not serious and delay in seeking treatment.

**11.** Men explode; women erode—at least in the case of ST-elevation myocardial infarction.<sup>2</sup> The pathophysiology of IHD can vary between women and men. Men are more likely to have obstructive coronary artery disease, whereas women may suffer from coronary microvascular and endothelial dysfunction without obstruction, leading to abnormal coronary flow reserve that is not captured on coronary angiogram.

**12.** Paradoxically, younger women (<55 years) with ACS are at higher risk for sudden cardiac death than older women with ACS (≥55 years). Younger women have been found to have higher rates of nonobstructive CHD, are often undiagnosed, and delay in seeking treatment of symptoms.

**13.** Time is muscle.<sup>3</sup> Women delay longer in seeking care for symptoms of ACS. Many factors have been implicated in treatment-seeking delay: older age, living alone, low socioeconomic status, atypical symptoms, attribution of symptoms to less serious causes, the need to maintain control, taking a wait-and-see approach, the need to consult with others, and confirmation of the need to seek care.

**14.** Treatment delayed is treatment denied.<sup>4</sup> Women at high risk, such as those with positive cardiac markers, do benefit from early invasive interventions. In women with obstructive CAD, medical and interventional treatment should be

the same as that for men. Delay in ACS diagnosis for women has been attributed to attribution of symptoms to cholecystitis by triage nurses, general practitioners taking longer to diagnose ACS in women, and physicians who are less likely to refer women than men to stress testing.

**15.** The prognosis is worse for women compared with men with ACS. Twenty-four-hour mortality rates with ST-elevation myocardial infarction are higher for women compared with men (10.2% vs 5.5% mortality). Women have more persistent limiting symptoms, more frequent hospitalizations, and more repeat procedures with associated increased healthcare costs compared with men. Yet, women enjoy more short-term benefits from thrombolytic therapy compared with men.

**16.** What’s good for the goose is not necessarily good for the gander. Effective treatments for men with IHD may not be the same for women. For instance, women with nonobstructive IHD who are symptomatic benefit more from beta blockers than calcium channel blockers for symptom relief. Angiotensin-converting enzyme inhibitors and statins alone, or in combination, relieve symptoms while improving microvascular function and are recommended for women. Ranolazine has been shown to decrease ischemic symptoms and improve microvascular function in women with nonobstructive CAD and evidence of ischemia.

**17.** Several medications and popular supplements should not be used for primary or secondary prevention of heart disease in women: hormone therapy and selective estrogen-receptor modulators, antioxidant vitamin supplements (vitamin C, E, and beta carotene), or folic acid, with or without vitamin B<sub>6</sub> and B<sub>12</sub> supplementation.

**18.** Women and men are not created equal when it comes to appro-

priate diagnostic testing. Because of variations in pathophysiological and clinical manifestations in women compared with men, diagnostic testing should include stress echocardiography, which is more reliable than standard exercise stress test in women with intermediate risk.

**19.** African American and Hispanic women’s awareness of the risks associated with heart disease has actually decreased since 2009. Only 36% of African American women and 34% of Hispanic women (compared with 52% and 51%, respectively, in 2009), surveyed in 2012, knew that heart disease is the most frequent cause of death for women compared with 56% of white women.<sup>5</sup> For more information, go to: [https://www.goredforwomen.org/about-heart-disease/facts\\_about\\_heart\\_disease\\_in\\_women-sub-category/african-american-women/](https://www.goredforwomen.org/about-heart-disease/facts_about_heart_disease_in_women-sub-category/african-american-women/).

**20.** Wear red. The Go Red for Women campaign (<https://www.goredforwomen.org/>) has raised awareness of women’s risk for heart disease. Heart disease is a political as well as a health issue. We all need to help increase the public’s knowledge of women’s heart health to increase funding for women’s health research and support health policies beneficial to women.

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