

Coronary artery disease continues to be neglected in women, despite it killing at least as many women as men

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Despite coronary artery disease (CAD) killing at least as many women as men each year, women are still today less likely to receive preventive recommendations, such as lipid-lowering therapy, aspirin, and lifestyle advice, than are men at a similar risk level. The challenges for women with CAD are outlined in a paper in this month's edition of *Global Heart*, the journal of the World Heart Federation.

Worldwide, 8.6 million women die from cardiovascular diseases (CVD, which includes CAD) each year, accounting for a third of all deaths in women. Worldwide, 17.3 million people died from CVDs in 2008, representing 30% of all global deaths, occurring almost equally in men and women. CVD remains the number one cause of death in both genders worldwide and numbers of CVD deaths are projected to increase to 23.3 million by 2030.

"CAD is a leading cause of death of women and men worldwide. Yet CAD's impact on women traditionally has been underappreciated due to higher rates at younger ages in men," say the authors. "[Microvascular coronary disease](#)** disproportionately affects women. Women have unique risk factors for CAD, including those related to pregnancy and autoimmune disease. Trial data indicate that CAD should be managed differently in women."

CAD is the leading cause of death for both men and women in the USA

(and most other developed countries). "More women than men die of CAD, and more women have died from CAD than of cancer (including breast cancer), chronic lower respiratory disease, Alzheimer's disease, and accidents combined," say the authors. There has been some good news, in that from 1998 to 2008, the rate of death from CAD declined 30% in the USA (with similar falls in other developed countries); however, rates are actually increasing in younger women aged 55 years and under due to a variety of risk factors.

A wealth of research over recent years has shown that not only has the burden of CAD been underappreciated in women, but also that it can develop differently in women than in men. Different risk factors appear to affect the sexes differently, with obesity increasing risk of CAD by 64% in women but by only 46% in men. Women who suffer a CAD-related heart attack at a younger age (less than 50 years) are twice as likely to die as men in similar circumstances. Among older individuals (over the age of 65), women are more likely to die within the first year after a heart attack. Overall, 42% of women who have heart attacks die within 1 year, compared to 24% of men. And based on pooled estimates from multiple countries, women are also 20% more likely to suffer angina than men.

CT scans and other imaging techniques show that women have narrower coronary arteries than do men, and are more likely to suffer CAD due to microvascular disease. So while appearing not to have major coronary artery obstructions, women suffer symptoms due to blockages of these smaller vessels. Over one-half of symptomatic women without obstructive CAD continue to have signs and symptoms of ischemia and to undergo repeat hospitalisation and coronary angiography.

Women also seem to have greater rates of coronary plaque erosion (where there is abrasion to the surface of a plaque, causing blood clots to form). Men are more likely to have obstructive CAD, which is usually

seen when someone has a heart attack. This type of CAD is less frequently seen in women. Traditional risk factors such as age, family history of CAD, hypertension, diabetes, dyslipidemia, smoking, and physical inactivity are important predictors of risk in women. In contrast to the linear increase in CAD in men as they age, there is a more exponential increase in CAD in women after the age of 60.

Other differences exist in terms of CAD risk in women. If a woman has a first degree relative that has had CAD, this increases her risk more than it would for a man. Diabetes increases a woman's risk of CAD by 3-7 times, while for men it is only 2-3 times. And a diabetic woman is 3 times more likely to develop CAD than a non-diabetic woman.

Lack of physical fitness is also a crucial risk factor, with one study (the St. James Women Take Heart Project) showing that women unable to carry out basic fitness tests were three times more likely to develop CAD than fitter women. Increasing physical activity is a key component of the World Heart Federation's 'Make a Healthy Heart Your Goal' campaign, running in partnership with this month's Women's European Football Championships. Heart disease in women will also be a major focus of WHF's World Heart Day, which takes place on September 29. Furthermore, part of WHF's overall strategy is aligned with that of WHO to reduce premature mortality related to non-communicable diseases, including CVD, by 25% by 2025.

Women are also more likely than men to suffer [autoimmune diseases](#), raising their risk of CAD, Polycystic ovary syndrome, pre-eclampsia, and gestational diabetes are all conditions that can ultimately increase risk of CAD in women, as is breast cancer. The authors say: "As was recently reported, although advances in breast cancer therapies are improving survival in early breast cancer, the gains are being attenuated by increasing CAD risk. Whether the increased CAD risk is due to the [breast cancer](#) therapies or to the disease itself - which is associated with

some of the same risk factors for CAD - remains unknown."

The authors say that awareness of the tremendous impact of CAD has on women among women themselves is slowly increasing. In 1997, only 30% of American women surveyed were aware that the leading cause of death in women is CAD; this increased to 54% in 2009. But in a survey performed in 2004, fewer than 1 in 5 physicians recognised that more women than men die each year from CAD. Furthermore, cardiac rehabilitation*** after heart attacks is underused, particularly in women, as demonstrated in numerous national studies. Women are 55% less likely to participate in cardiac rehabilitation than men are.

The authors conclude: "Women are affected by CAD in large numbers and to a large degree. CAD is the leading cause of mortality in women. The manifestation of CAD has unique characteristics in women. Increasing data demonstrate that some treatment strategies have sex-specific effectiveness. Further research regarding the pathophysiology of CAD in women, diagnosis, and treatment strategies specific to women is required. CAD is not a 'man's only' disease, and we eagerly await future studies that examine its unique presence in [women](#)."

More information: 'Coronary Artery Disease in Women: A 2013 Update', *Global Heart*

Provided by World Heart Federation

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