



ACSM Sports Medicine Basics

WOMEN'S HEART HEALTH AND A PHYSICALLY ACTIVE LIFESTYLE



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Women and Coronary Heart Disease: The Facts

Coronary heart disease (CHD) continues to be the leading cause of death in women and men, but more women than men die each year of CHD. The overall risk of heart attack in women is close to that of men a decade younger but, with increasing age, the risk of heart attack becomes similar in men and women. One in three heart disease deaths per year will occur in women. Of great concern is the fact that death rate due to CHD in women ages 35-74 years is 74 percent higher in black women compared with white women. Despite these statistics, clinicians and the public often cite breast cancer and osteoporosis as the greatest health risks for women over 50 years. These misconceptions regarding women's heart health are startling, considering that the lifetime risk of death from CHD among postmenopausal women is approximately 31 percent compared to 2.8 percent for both hip fracture and breast cancer.

Once women manifest CHD, they have more adverse clinical outcomes than do men. Women are twice as likely as men to die within the first year after a heart attack, and nearly 63 percent of the women who die suddenly from CHD have had no previous symptoms. Moreover, heart disease is often called the silent killer because nearly two

thirds of women who die suddenly are asymptomatic. Women who undergo coronary artery bypass graft surgery are almost twice more likely to die as a result of the procedure, have less relief from their symptoms and more often require another operation than do men. These data, as well as the nearly eight-year life span advantage of women compared to men, underscore the importance of preventive cardiac care for women of all ages. The primary CHD risk factors of abnormal blood lipids and lipoproteins (dyslipidemia), high blood pressure, physical inactivity, overweight, smoking and diabetes mellitus (DM) are of particular importance in women.

Unique Heart Disease Risk Concerns for Women

Women and men share the most common heart attack symptom of chest pain or discomfort. Despite this, it is well known that women more frequently experience other symptoms of a heart attack such as shortness of breath, nausea or vomiting and back or jaw pain. Women who experience heart attacks or unstable angina pectoris are usually older than are men and, for that reason, they more often have comorbid chronic diseases and may have more complications. Moreover, women may have less awareness about heart disease and insufficient social support. All of these factors can result in poorer outcomes for women.

While CHD deaths have declined in both women and men over the past 20 years, the rate of decline is less in women compared to men. Further, the incidence of CHD deaths in women ages 35-54 years has increased in recent years, most likely due to the obesity epidemic. This sex difference in CHD deaths is partly attributable to a greater clustering of CHD risk factors associated with the metabolic syndrome (MS) among women compared with men, and this may explain the elimination of the "female advantage" as women age. The diseases and conditions of MS include obesity, especially about the abdomen, high blood pressure, abnormal blood lipids and impaired glucose utilization. Metabolic syndrome often leads to CHD and type 2 diabetes mellitus (DM).

More than two-thirds of women 20 years of age and older are overweight or obese. Older women are at more risk for weight gain and abdominal fat accumulation, a major component of MS. Physical inactivity has been implicated as a major contributor to overall and abdominal obesity.

High blood pressure affects one in three women and is more prevalent in women ages 65 years and older compared with men. High blood pressure is more common among **black** than white women, and it is thought to contribute to their higher rate of CHD

death. These observations again speak to the importance of preventive cardiac care for women of all ages.

A constellation of blood lipid and lipoprotein abnormalities has been linked with MS and CHD, and is called “atherogenic dyslipidemia.” These abnormalities consist of slightly to moderately elevated low-density lipoprotein cholesterol (LDL) and triglycerides with a predominance of smaller, more dense and atherogenic LDL, and low levels of high-density lipoprotein cholesterol (HDL). Furthermore, the prevalence of elevated total cholesterol is higher in women than men. After age 65 years, low HDL and elevated triglycerides appear to be stronger risk factors for CHD in women compared to men. The age-related increases in LDL and total cholesterol are higher among women than men, as is the shift to smaller, more dense and atherogenic LDL particles. More than 40 percent of women over 55 years of age have elevated cholesterol levels.

No other cardiac risk factor so significantly erases the female advantage of acquiring CHD disease than does type 2 DM, which affects eight percent of all women over 20 years of age and is more prevalent among black, Hispanic and Native American women. Although women without DM have fewer cardiovascular events compared with men of the same age, once a woman develops diabetes, this sex-related advantage disappears. A woman with DM is three-to-seven times at greater risk of a coronary event than is a woman without DM. This is in contrast to a two-to-three fold increase in CHD risk in men with DM. DM doubles the risk of a second heart attack in women, but not in men. Moreover, 80 percent of women with DM will die from some form of cardiovascular disease. Type 2 DM affects more women than men, decreasing life expectancy by about eight years. Women’s heart health is clearly related to the state of their metabolic health, particularly as they age.

Another common risk factor in women is smoking. Fifteen percent of women abuse tobacco, with Native American women being the most likely to smoke (22 percent). Women who smoke are two times more likely to die of a heart attack than are men.

There are some unique factors that may confer additional risk for women. These factors are depression and psychosocial risk factors and autoimmune diseases such as systemic lupus erythematosus and rheumatoid arthritis. The American Heart Association recommends that women with such risk factors be considered at elevated risk and screened for CHD risk factors.

Sociodemographic Factors Associated with CHD in Women

Black and Hispanic women less often identify heart disease as the leading cause of death compared to white women, and they are less often aware that calling 911 is a first-line action in the presence of acute CHD symptoms. A lack of awareness of heart disease is associated with racial/ethnic disparities in all age groups and is independent of confounding factors such as education and economic status. Women of poorer socioeconomic status and those who identify from a diverse background are disproportionately affected by CHD. Non-Hispanic black women are 25 percent more likely to die of CHD than are white women. Heart disease risk factors also present a greater burden to minority women. Forty-six percent of African-American women have high blood pressure, compared with 30 percent of white and Hispanic women. The age-adjusted prevalence of MS is highest in Hispanic women. The incidence of diabetes is disproportionate in Hispanics/Latinos and other ethnic minorities. Contributing is the higher prevalence of overweight and obesity in non-Hispanic black and Hispanic compared to non-Hispanic white women. Moreover, type 2 DM is more than double in Hispanic women compared with non-Hispanic white women.

Physical Activity and Women’s Heart Health

Of the unique cardiac risk factor concerns among women addressed in this document, physical inactivity is more prevalent in women. Only forty-six percent of women meet current recommendations for physical activity. Insufficient physical activity increases with age and occurs more frequently among minorities and in women of lower socioeconomic status.

Physical inactivity is a major independent risk factor for CHD due, in part, to its unfavorable influence on the diseases and conditions of MS. An inverse, dose-response relationship between physical activity or physical fitness and deaths due to cardiovascular disease has been demonstrated in many studies. Women and men who are sedentary have a higher rate of nonfatal myocardial infarction, stroke, peripheral vascular disease, high blood pressure and type 2 DM. In addition, blood-clotting factors, blood triglycerides, LDL, body mass index or body weight and smoking prevalence are higher and HDL cholesterol lower with decreasing levels of physical activity. Controlled trials of exercise training have resulted in reductions in total cholesterol, triglycerides, LDL, systolic and diastolic blood pressure, total and abdominal body fat, blood-clotting factors and increased HDL-cholesterol, fibrinolytic (“clot-busting”) factors and insulin sensitivity. Women appear to derive benefit similar to men from being physically active. For women, exercise is a powerful medicine for reducing CHD risk.

Conclusions

CHD is a major health threat to women, with a greater burden occurring in minority women. Consequently, it is vital to increase the awareness of women, health and fitness professionals about this fact. Preventive strategies have the potential to substantially lower the risk of CHD in both women and men. About 75 percent of the risk factors mentioned above can be prevented with adequate preventive care. Increasing physical activity is the lifestyle change most likely to have far-reaching effects in the primary and secondary prevention of CHD. Physical activity has been shown to favorably alter the MS and related CHD risk factors, including dyslipidemia, obesity, type 2 DM, smoking and high blood pressure. Further, for women and men with CHD, improved CHD risk factor profiles are likely to result in improved survival and enhanced quality of life. In view of these facts, the American College of Sports Medicine strongly endorses physical activity as a means to improve heart health among women of all ages.

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Suggested Citation: Rosenberg SK and Garber, CE. Women’s Heart Health and a Physically Active Lifestyle. Indianapolis, IN: American College of Sports Medicine; 2016.

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