

## Women's Heart Health and a Physically Active Lifestyle

### Women and Coronary Artery Disease: The Facts

Coronary heart disease (CHD) is 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. Of great concern is the fact that death rate due to CHD in women ages 35-74 years is 74 percent higher in black than in 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 hip fracture and breast cancer alike.

Once women manifest CHD, they have more adverse clinical outcomes than men do. 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. Women who undergo coronary artery bypass graft surgery are almost twice as likely to die as a result of the procedure, have less relief from their symptoms, and more often require another operation than 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, and diabetes mellitus (DM) are of particular importance in women.

### Unique Coronary Risk Factor Concerns 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. This phenomenon is partly attributable to a greater clustering of coronary risk factors associated with the metabolic syndrome (MS) among older women than men and 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, dyslipidemia, and impaired glucose utilization. Metabolic syndrome often leads to CHD and Type 2 diabetes mellitus (DM).

More than 50 percent of women 20 years of age and older are overweight or obese compared to 60 percent of men. Of more concern is the fact that more than 65 percent of black and Mexican-American women are overweight or obese. Older women are at greater 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 about 52 percent of women over 40 years of age, and nearly three out of four women over 75 are similarly affected. It is more common among black than white women, and is thought to contribute to their higher rate of CHD death. While there has been some controversy, it appears that drug treatment of high blood pressure offers benefit. These observations again speak to the importance of preventive cardiac care for women of all ages. Recently, 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).

After age 65, low HDL and elevated triglycerides appear to be stronger risk factors for CHD compared to men. The age-related increases in LDL and total cholesterol are greater 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 DM, which affects eight percent of all women over age 20 and is more prevalent among black, Hispanic and Native American women. A woman with DM is from 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-threefold 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. Women's heart health is clearly related to the state of their metabolic health, particularly as they age.

### **Physical Activity and Women's Heart Health**

Of the unique cardiac risk factor concerns among women addressed in this document, physical inactivity is the most prevalent. More than 60 percent of women do not meet current recommendations for physical activity, with more than 25 percent of women doing no regular physical activity. Sedentary behavior increases with age and is greatest among minorities and those of lower socioeconomic status.

Physical inactivity is a major independent risk factor for CHD, in part due 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 non-fatal 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, body fat, and blood-clotting factors and increased HDL-cholesterol, fibrinolytic ("clot-busting") factors and insulin sensitivity. Although limited data are available, women appear to derive benefit similar to men from being physically active.

### **Conclusions**

CHD is a major health threat to women. Consequently, it is vital to increase the awareness of women, health, and fitness professionals about this fact. Preventive strategies have the potential to significantly lower the risk of CHD in both women and men. Increasing physical activity is the lifestyle change most likely to have far-reaching consequences 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, and high blood pressure. Further, for women and men with CHD, improved 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.

Written for the American College of Sports Medicine by Carol Ewing Garber, Ph.D., FACSM and Linda S. Pescatello, Ph.D., FACSM

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*Street Address: 401 W. Michigan St. • Indianapolis, IN 46202-3233 USA*

*Mailing Address: P.O. Box 1440 • Indianapolis, IN 46206-1440 USA*

*Telephone: (317) 637-9200 • FAX: (317) 634-7817*

