More research on women’s unique heart risks

Now that studies of heart disease include women, we’re learning about “heart-felt” sex differences.

Only a few years ago, most of our ideas about America’s number one killer — coronary artery disease — came from studying men, even though it’s also the leading cause of death in women. Of course, men and women share many risk factors for heart disease — most obviously, cigarette smoking, inactivity, diabetes, and obesity. But research is uncovering important differences between the sexes that can affect diagnosis, treatment, and prevention. Here are some recent advances in our understanding of heart disease in women.

Improving risk assessment

To prevent heart disease, you need to know who is most likely to develop it. Experts have traditionally used a simple risk-assessment tool based on data from the Framingham Heart Study, a long-term investigation begun more than 50 years ago. This method estimates the 10-year risk of a heart attack by taking into account age, gender, smoking, cholesterol levels, and blood pressure. But new research suggests it may fall short of the mark in identifying some women at high risk.

Researchers at Johns Hopkins University evaluated nearly 2,500 women over age 45 with no signs of heart disease. Framingham estimates indicated that 10% were at intermediate risk for heart disease and candidates for further evaluation. The other 90% were at low risk — with less than a 10% chance of a heart attack within 10 years. None were at high risk. Yet when clinicians examined their coronary arteries with electron beam CT scans, 20% of the women received scores suggesting advanced atherosclerosis — a major risk factor for heart attack. The Framingham method had rated 94% of these advanced cases as low risk.

The investigators, who presented their findings at an American Heart Association (AHA) meeting in November 2004, suggested that additional measures, such as body weight and physical activity, might boost the power of traditional assessments to identify women at risk. But at this point, we don’t know whether that’s true. And it’s not clear that electron beam CT predicts heart attacks any better than other methods. A large, federally funded investigation is exploring the effectiveness of that technique, and results will be available in 2006.

Fitness, fatness, and cardiovascular risk

Many studies have examined the relationship between cardiovascular risk and such measures as body mass index (BMI) and waist size. But most investigations haven’t added physical activity to the mix. Recent findings suggest that measures of fitness predict heart disease risk independently of obesity.

Researchers at the University of Florida analyzed data from more than 900 postmenopausal women enrolled in a four-year study of diagnostic testing for suspected cardiovascular disease. They measured the women’s body mass index, waist circumference, waist-height ratio, and waist-hip ratio. The women provided information about their physical activities and fitness.

Is it a heart attack?

Although many women have chest discomfort during a heart attack, more than 40% do not. Those who do often experience it as aching, pressure, and tightness rather than the crushing pain characteristic of a heart attack in men.

Other signs of a heart attack in women include:
• shortness of breath
• unusual fatigue, weakness
• nausea, cold sweats, dizziness
• heaviness or aching in the arms

Women are also likely to experience unusual fatigue, sleep problems, and shortness of breath as much as a month or more before having a heart attack.


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The researchers found that fitness scores were more important than weight levels. Women with low fitness scores had a higher rate of adverse events (such as heart attack, stroke, and death) than those with normal fitness — regardless of how much they weighed. Women who were not obese (their BMIs were below 30) and who had low fitness scores had more events than obese women who had higher fitness scores. Also, angiograms (x-rays of coronary blood vessels) revealed no differences in the presence or severity of coronary artery disease at BMI levels ranging from normal to overweight and even obese. Nor was there any correlation between coronary artery disease and the various waist-related measures. By contrast, a low fitness score doubled the risk of coronary heart disease in all categories of weight and waist size (Journal of the American Medical Association, Sept. 8, 2004).

While it’s possible to be both fat and fit, it’s healthier to be fit and not fat (women in the study who were fit and not obese had the fewest adverse events). Still, this research confirms that fitness reduces cardiovascular risk in women with suspected coronary artery disease. It adds to the already abundant evidence that in addition to not smoking, exercise may be the single most important thing a woman can do to reduce her risk for heart disease.

Don’t wait until it’s too late
Fewer women than men survive a first heart attack. New research suggests that if women got to the hospital sooner and were treated as quickly as men are, more might survive. A study of more than 1,500 heart attack patients who had emergency treatment in a group of Michigan hospitals found that, compared to men, women reached the hospital later and had to wait longer for emergency angioplasty — a procedure that opens clogged blood vessels and restores blood flow to the heart muscle. It works best if it’s performed within 90 minutes to 2 hours of arrival at the hospital.

The Michigan researchers found that receiving emergency angioplasty within 90 minutes indeed lowered both women’s and men’s risk of dying in the hospital by 50%. But women were twice as likely as men to die in the hospital. Why the difference?

Several gender-related factors may contribute. Heart disease tends to show up in women at a later age, so co-existing medical conditions may play a role. Women’s coronary arteries are also smaller and lighter, which can make diagnosis and treatment more difficult.

But those aren’t the only explanations. The Michigan study, also presented at the AHA’s November 2004 meeting, found that women got to the emergency room about 20 minutes later than men did — a delay that can increase the extent of heart muscle damage. Why the delay? Some research suggests women often don’t think of themselves as being at risk for a heart attack. What’s more, they may not experience stereotypical clutch-the-chest pressure and pain, and thus may attribute their symptoms to something else. Hospital personnel, too, may not recognize a woman’s symptoms as those of a heart attack. That’s why it’s important for women to understand their level of risk, know the warning signs, and insist on appropriate care.

What to do
Advocating for yourself in a medical setting may feel embarrassing or uncomfortable, but doing so can make a critical difference. Now, before problems arise, make sure you establish a relationship with a physician who knows you and can be contacted quickly. Carry a list of any medications, supplements, or herbal products you take, and make note of any allergies you have to medications. Find out from your police or fire department how to get help (9-1-1 is the emergency number to call in most communities). If you think you may be having a heart attack, get to a hospital immediately (do not drive yourself). Chew a full-strength aspirin (325 mg, uncoated), or crush one and take it with a glass of water. On arriving at the hospital, immediately tell the emergency room personnel you’re having chest discomfort. Be sure you receive an electrocardiogram and other tests to find out if you’ve had a heart attack. You may be offered clot-busting drugs, so take the time now to learn what they do and their side effects. To find out more about heart disease in women, visit www.womenheart.org.