Heart Disease Prevention in Women

Lori Mosca, MD, PhD

A recent national study conducted by the American Heart Association showed that fewer than 50% of American women know that heart disease is their leading killer. The study included more than 1000 women from many different racial and ethnic backgrounds. More women in this study knew that heart disease was women's leading killer than in similar studies conducted in 1997 and 2000, but there's still a lot of room for improvement.

Cardiovascular disease—the No. 1 cause of death in the United States—claims the lives of almost 500 000 women each year. That's nearly one death every minute. Being aware of the risk of heart disease is important because it's the first step in taking action to lower risk.

Because heart disease can often be prevented, the survey findings are an urgent call to action. The American Heart Association and 11 other leading national health organizations came together to develop comprehensive guidelines for heart disease prevention in women. They include a rating scale to express the strength of recommendations and the quality of research to support specific preventive therapies.

Each recommendation was categorized to help doctors and women decide which preventive therapies should or should not be used. A Class I category indicates that the type of therapy should be provided routinely. Class IIa indicates that most scientific evidence favors providing the type of therapy, whereas Class IIb indicates the usefulness of therapy is less well-established. Class III indicates that the type of therapy isn't useful and may be harmful.

Being aware of personal risk and treatment options can empower a woman to live a long and healthy life. Physicians who follow these guidelines will be able to help female patients make lifestyle changes and better select the right medications to help them avoid or treat heart disease.

In developing these guidelines, a panel of renowned health professionals and scientists reviewed the highest-quality research from a search of nearly 7000 scientific articles that addressed important topics about preventing heart disease. The experts used the findings to develop clinical guidelines to help doctors provide the best possible preventive heart care for female patients. The guidelines were also designed to help women achieve a heart-healthy life and reduce their chances of having a heart attack or stroke. Awareness, knowledge, and action are by far the most important factors in saying "goodbye" (**ALOHA**) to the No. 1 killer of women.

ALOHA to Heart Disease

It's easy to remember what you need to know about the guidelines and setting priorities. Just think **ALOHA**:

A—Assess your risk and rank yourself as high, intermediate, or lower risk.
L—Lifestyle recommendations are priority No. 1 in heart disease prevention.
O—Other interventions are prioritized according to the expert panel rating scale.
H—Highest priority for therapy is for women at highest risk.
A—Avoid medical therapies called Class III.

A — Assess Your Risk

Heart disease risk isn't something you either have or don't have. It's a risk that people have to a greater or lesser degree. The first step in lowering your risk requires assessing—or measuring—your risk. You and your doctor can use a tool called the Framingham Risk Assessment Calculator to rank your personal heart disease risk as "high," "intermediate" or "lower."

Your risk score tells you your chances of having a heart attack or dying of heart disease over a 10-year period. You're given points on the basis of your age, total cholesterol level, HDL ("good") cholesterol level, blood pressure, and whether you

From Columbia University College of Physicians and Surgeons, New York, NY.
Correspondence to Lori Mosca, MD, PhD, Director, Preventive Cardiology, New York Presbyterian Hospital, 622 W 168th St, New York, NY 10032-3720. E-mail ljm10@columbia.edu
(*Circulation.* 2004;109:e158-e160.)

***Circulation* is available at http://www.circulationaha.org** **DOI: 10.1161/01.CIR.0000124449.48800.C3**

Framingham Point Score
Estimate of 10-Year Risk for Women

Age	Points
20-34	-7
35-39	-3
40-44	0
45-49	3
50-54	6
55-59	8
60-64	10
65-69	12
70-74	14
75-79	16

Total Cholesterol (mg/dl)	Points				
Ages	20-39	40-49	50-59	60-69	70-79
<160	0	0	0	0	0
160-199	4	3	2	1	1
200-239	8	6	4	2	1
240-279	11	8	5	3	2
≥280	13	10	7	4	2

Smoking	Points				
Ages	20-39	40-49	50-59	60-69	70-79
Nonsmoker	0	0	0	0	0
Smoker	9	7	4	2	1

HDL (mg/dl)	Points
≥ 60	-1
50-59	0
40-49	1
< 40	2

Systolic BP (mmHg)	Untreated	Treated
< 120	0	0
120-129	1	3
130-139	2	4
140-159	3	5
≥ 160	4	6

Point Total	10-Year Risk %
< 9	<1
9	1
10	1
11	1
12	1
13	2
14	2
15	3
16	4
17	5
18	6
19	8
20	11
21	14
22	17
23	22
24	27
≥25	≥30

Framingham Point Score: Estimate of 10-Year Risk for Women. Find your point score in each of the 5 boxes to the left, and then add them to get your Point Total. Find that point value in the box on the right, and you will also see an estimate of your 10-year risk as a percent. A risk greater than 20% in 10 years is considered high risk. Intermediate risk ranges from 10% to 20%; low risk is less than 10%.

smoke. The points are added up and converted into a 10-year risk. Your risk can be interpreted as the number of chances out of 100 that you'll develop or die from heart disease in the next 10 years, according to your current risk profile. Assessing, knowing, and acting are the best ways to change your risk profile.

If you already have heart disease, stroke, peripheral arterial disease, abdominal aortic aneurysm, diabetes mellitus, or chronic kidney disease, you're automatically considered to be at high risk. Also, some women with genetic cholesterol problems may also be at high risk.

You can use the Framingham Risk Assessment Calculator shown here to score your own risk. Share the results with your physician and discuss next steps.

L — Lifestyle Change: First Line of Defense Against Heart Disease

No matter what your risk score is, the most important thing you can do to lower your risk of heart disease is to make living a healthy lifestyle your top priority.

The following five lifestyle changes were rated as Class I. That means they're the strongest recommendations given by the expert panel.

1. Stop smoking cigarettes and avoid secondhand tobacco smoke.
2. Get at least 30 minutes of physical activity each day.
3. Start a cardiac rehabilitation program if you've recently been hospitalized or had a procedure for heart disease.
4. Eat a heart-healthy diet that includes fruits, vegetables, grains, low-fat or nonfat dairy products, fish, legumes, and sources of protein low in saturated fat (such as, poultry, lean meats, and plant sources). Limit intake of trans fatty acids such as those found in hydrogenated oils.
5. To maintain a healthy weight, balance the calories you eat with the amount you use up each day. To lose weight, you need to use up more calories than you take in. If you need to, enroll in a formal weight-loss program.

O — Other Interventions Prioritized by the Evidence Rating Scale

The expert panel rated other interventions as Class I. They should definitely be provided as a standard of medical care. These interventions include lowering high blood pressure in all women with hypertension, ensuring healthy cholesterol levels in high- and intermediate-risk women, and keeping diabetes under control. You'll need to work with your doctor to manage these risk factors.

1. *Blood pressure* is optimal at less than 120/80 mm Hg. If there's a slight rise in pressure, the first line of self-defense is to improve your lifestyle habits. If your blood pressure stays at 140/90 or higher (or greater than 130/80 if you have diabetes), drugs should be added to control it.
2. *Cholesterol levels* are important for women to know. Total cholesterol optimally should be less than 200 mg/dL; LDL (bad cholesterol), less than 100 mg/dL; HDL (good cholesterol), more than 50 mg/dL; and triglycerides (a type of fat in the blood), less than 150 mg/dL.
3. *Diabetes* (high blood sugar) is becoming more common in the United States. Unhealthy eating habits and gaining too much weight are leading causes of type II (acquired) diabetes. If you don't manage diabetes, it can lead to heart attack and stroke. Diet, exercise, and medication are the keys to normal blood glucose levels. Long-term control of glucose is measured with an HbA_{1C} level; the panel recommends that it be maintained at less than 7%.

Other priorities for heart disease prevention are listed according to risk level in the Table.

H — Highest Priority for Therapy Is for Women at Highest Risk

Women who are considered to be at highest risk are most likely to benefit from preventive therapy. Women at highest risk are those who already have cardiovascular disease, diabetes, or chronic kidney disease. Besides lifestyle changes and controlling major risk factors, several drugs have been shown to prevent heart attacks or increase survival in this group. The expert panel gave the medications listed below a Class I rating (desirable therapies) for women at high risk.

- *ACE (angiotensin-converting enzyme) inhibitor therapy*. If a woman on ACE therapy has side effects such as coughing, it's recommended that an ARB (angiotensin receptor blocker) be used instead, if she has a history of heart failure.
- *Aspirin therapy (baby aspirin or a maximum dose of 162 mg).* Women who have liver or kidney disease, stomach ulcers and other gastrointestinal problems, bleeding problems, or aspirin allergies should not take aspirin regularly.

Priorities for Prevention in Practice According to Risk Assessment

	High-Risk Women (>20% Risk)	Intermediate-Risk Women (10% to 20% Risk)	Lower-Risk Women (<10% Risk)
Class I recommendations			
	Smoking cessation	Smoking cessation	Smoking cessation
	Physical activity/cardiac rehabilitation	Physical activity	Physical activity
	Diet therapy	Heart-healthy diet	Heart-healthy diet
	Weight maintenance/reduction	Weight maintenance/reduction	Weight maintenance/reduction
	Blood pressure control	Blood pressure control	Treat individual heart risk factors as indicated
	Cholesterol control/therapy	Cholesterol control	
	Aspirin therapy		
	β-Blocker therapy		
	ACE inhibitor therapy (ARBs if contraindicated)		
	Management/control of diabetes		
Class IIa recommendation			
	Treatment for depression	Aspirin therapy	
Class IIb recommendations			
	Omega 3 fatty-acid supplementation		
	Folic acid supplementation		

- *Beta-blocker therapy*. Beta-blockers are recommended for women who have had a heart attack or have ongoing angina or chest pain.
- *Statin therapy*. Statins effectively reduce total cholesterol and LDL (bad cholesterol). Recent studies have shown statins are helpful even when the LDL is below 100, so the panel recommended that high-risk women take them if possible.
- *Niacin or fibrate therapy*. The panel recommended that high-risk women with a low HDL (good cholesterol) or high non-HDL (all the bad cholesterol and fats together) use niacin or fibrate therapy. Niacin therapy lowers total cholesterol and raises HDL (good cholesterol). Prescription niacin can be used alone or together with statin therapy. Dietary supplement niacin must *not* be used as a substitute for prescription niacin. Over-the-counter niacin should only be used if approved and monitored by a physician.
- *Fibrates*. Fibrates are effective in lowering triglycerides and, to some extent, can help improve HDL (good cholesterol levels). Fibrates are generally well tolerated by most women.
- *Warfarin*. Women with atrial fibrillation—a type of irregular heartbeat that can lead to stroke—should take the blood thinner warfarin unless they can't or are considered to be at low risk for a stroke. In that case, they should take 325 mg of aspirin daily.

A — Avoid Medical Interventions Called "Class III"

The panel said that three interventions should not be used to prevent heart disease because research has shown no benefit—and in some cases found harm. Ongoing research will provide more information about these therapies, but in the meantime, avoid their use to prevent heart disease.

- Combined postmenopausal hormone therapy (estrogen and progestin) has been recently shown (in the Women's Health Initiative) to have no benefit in preventing heart disease. In some women it may cause heart attacks, stroke, or blood clots. The benefits and risks of estrogen alone are still being studied. Talk to your doctor about the benefits and risks of hormone therapy to treat symptoms of menopause.
- Antioxidant supplements, such as vitamin E and beta carotene, should not be used to prevent heart disease. Several clinical trials have shown no benefit and some have shown an unexpected increase in hemorrhagic (bleeding) strokes. These supplements may also interfere with the beneficial effects of statin therapy.
- Aspirin for low-risk patients isn't recommended. The potential benefits may be outweighed by risks such as stomach bleeding or ulcers. Also, the benefit has not yet been proven in women who have a low risk of heart attack.

Conclusions

Overwhelming evidence suggests that heart disease can be prevented in both women and men. The new guidelines, if they are used, can help women lower their risk of developing heart disease. Every woman should know what her risk level is and talk to her doctor about her prevention goals and the best way to reach them. It's important to remember that the expert panel's recommendations are a guide. The best advice will come from your own healthcare provider(s). By following these guidelines, you and other women can help say "Aloha" (goodbye) to heart disease.

For more information, visit the American Heart Association web site: http://www.americanheart.org.

Heart Disease Prevention in Women

Lori Mosca

Circulation. 2004;109:e158-e160
doi: 10.1161/01.CIR.0000124449.48800.C3
Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231

Print ISSN: 0009-7322. Online ISSN: 1524-4539