

Heart Disease and Women:

So You Have Heart Disease

IF YOU'RE A WOMAN WHO HAS or thinks she has coronary heart disease, this fact sheet is for you. It explains the causes, symptoms, detection, and treatments of coronary heart disease.

Coronary heart disease is a chronic condition—it will not disappear—and you may need to make some changes. But caring for your heart is worth the effort—your heart will thank you every day.

A Long Process

Coronary heart disease, the most common form of heart disease, develops over many years. It can begin as far back as childhood. In a process known as atherosclerosis, fatty substances build up inside the walls of blood vessels. Blood components also stick on the surface inside vessel walls. The vessels narrow and “harden,” becoming less flexible.

The buildup and narrowing proceed gradually and result in decreasing blood flow and, eventually, the development of symptoms. But the buildup, or “plaque,” may break open and suddenly produce a blood clot, limited blood flow, and symptoms.

When blood flow to the heart is reduced, chest pain, or “angina,” can result. If blood flow is nearly or completely blocked, a heart attack can occur and cause muscle cells in the heart to die.

Because the cells cannot be replaced, the result is permanent heart damage.

Who Gets Coronary Heart Disease?

Coronary heart disease rarely affects young women. Instead, it usually develops after menopause. Before menopause, the ovaries make estrogen, which helps protect the heart.

Being over age 55 is a “risk factor” that affects the development of coronary heart disease. There are other risk factors (*see Box A*). They are: family history of early heart disease, cigarette smoking, high blood pressure, high blood cholesterol, being overweight, physical inactivity, and diabetes.

The risk factors do not add their effects in a simple way. Rather, they multiply each other's effects. For example, if you smoke and have high blood pressure and high blood cholesterol, you're eight times more likely to develop coronary heart disease than a woman with no risk factors.

You can have coronary heart disease without being aware of it. The best way to protect your heart is to know whether you have coronary heart disease and treat it as early as possible. You need to talk to your doctor about your coronary heart disease and any symptoms you may be experiencing (*see Box B*).

Do You Have Angina?

The first symptom of coronary heart disease may be chest pain, or “angina.” The chest pain, which is caused by reduced blood flow to the heart, typically occurs behind the breastbone and may travel down your left arm or up your neck, or be a squeezing, pressing sensation that does not change with breathing. It is usually caused and made worse by exercise and eased by rest. The pain usually lasts 2 to 5 minutes. If you have this kind of chest pain, you should contact your doctor.

A reduced blood flow to the heart can cause symptoms other than chest pain. For example, some women get a less typical angina. The chest pain may linger, occur in a different location than behind the breastbone, or not be worsened by exertion and eased by rest. Some women have shortness of breath or indigestion. If you have such symptoms, you should talk with your doctor. If treated, the outlook is good. Without treatment, however, the symptoms may recur and worsen and can become unstable and even lead to a heart attack.

Women who have coronary heart disease need to talk to their doctor about the symptoms of a heart attack and the appropriate steps to take to get emergency care. It is important to know the tele-



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Box A: Factors That Put Your Heart At Risk

One in ten American women ages 45 to 64 has some form of heart disease. That increases to one in five for women over age 65. Some of the factors that increase the risk to your heart cannot be controlled—but most can. You'll protect your heart by controlling those that can be changed. Here's a rundown of both types of risk factors:

Unchangeable risk factors—

- ▲ Being age 55 or older
- ▲ Having a family history of early heart disease (this means having a mother or sister who has been diagnosed with heart disease before age 65, or a father or brother diagnosed before age 55)

Changeable risk factors—

- ▲ Cigarette smoking
- ▲ High blood pressure
- ▲ High blood cholesterol
- ▲ Overweight
- ▲ Physical inactivity
- ▲ Diabetes

phone number to call to get emergency transportation to the hospital. In most areas, this will be 9-1-1 or a 7-digit emergency number.

Getting to the hospital fast allows use of thrombolytic therapy—a clot-dissolving agent is injected to restore blood flow through an artery. This therapy saves lives and reduces damage to the heart muscle. But it must be done as soon as possible.

Doctors also have a new fast test for a heart attack. It detects changed levels of an enzyme (creatinine kinase MB) produced by the heart. It once took up to a day to test the levels and tell if someone has had a heart attack—but now it can

be done within 6 hours. So doctors can give fast care to those who need it and send the others home.

What Are the Tests For Coronary Heart Disease?

Diagnostic tests are usually needed to confirm the presence and assess the severity of coronary heart disease. Your doctor will know whether you need any of them. Often more than one test is needed because different tests supply different information. Also, patients vary in their symptoms and so may need more than one test to find out the heart's condition.

The main tests used to diagnose coronary heart disease

are described below. Many are not “invasive” procedures—they are done outside the body—and are painless.

The tests are:

- ▲ Electrocardiogram (ECG or EKG) makes a graphic record of the heart's electrical activity as it beats. This can show abnormal heartbeats, muscle damage, blood flow problems, and heart enlargement.
- ▲ Stress test (or treadmill test or exercise ECG) records the ECG during exercise, usually on a treadmill or exercise bicycle. Some heart problems show up only when more effort is asked of the heart, as happens during increased activity. So the exercise ECG may be done even if the resting ECG is normal.

Other exercise tests may be done with an ECG or a nuclear scan (see below) to assess heart muscle contraction or blood flow in the heart.

Older women may not be able to exercise due to arthritis or another condition. For them, a stress test can be done without exercise by using a drug that increases blood flow.

- ▲ Echocardiography converts sound waves, bounced off the heart, into images that show heart size, shape, and movement. The sound

Box B: Talking With Your Doctor

Caring for a chronic condition like coronary heart disease is a partnership—you and your doctor should work as a team. That means good communication.

Here are some pointers to help you talk with your doctor:

Before your office visit—

- ▲ Write down your concerns.
- ▲ Keep a diary of your symptoms, so you can describe them accurately.
- ▲ Note any past treatments.
- ▲ Gather any drugs you are taking and bring them or a list of them to the office visit.

During your office visit—

- ▲ Be open.
You will only hurt yourself if you're not. For instance, if you have trouble breathing or have pain, *tell* your doctor.
- ▲ Briefly describe all symptoms.
Tell when each started, how often it happens, and if it has been getting worse.
- ▲ Note any causes of stress in your life.
For instance, say if you are the caregiver for a sick parent or husband, or have other stressful responsibilities.
- ▲ Ask questions.
Be sure you understand what the doctor says. Ask for an explanation of any term you do not understand. Be sure you know the instructions for any medication—when to take it; what to do if you forget and skip a dose; what other drug, food, or activity to avoid while taking it; and what side effects may occur with it.
- ▲ Write notes.
This will help you remember what the doctor says.
- ▲ Bring a friend or relative with you if necessary.
If you are worried about understanding what the doctor says or have trouble hearing, have someone with you during the discussion.
- ▲ Share your views.
If something bothers you, say so. The doctor needs to know if something is working or not, or if you're having trouble following a treatment. For instance, if you're having trouble fixing low-saturated fat meals, say so. You may be referred to a dietitian for help. Dietitians are health care professionals who can help design an eating plan for you.

If a diagnostic test is ordered—

- ▲ Ask the reason and find out what will be learned from the test.
- ▲ Ask when results will be ready.
- ▲ Know what the test involves and how to get ready for it.
- ▲ Ask who will do the test.
- ▲ Find out if you will need help getting home after the test.
- ▲ Find out if the test poses any dangers or side effects.

If you need a special procedure—

- ▲ Find out the benefits and risks of the procedure.
- ▲ Ask what kind of doctor you need for it and get a referral.
- ▲ Ask if you will need to be hospitalized and for how long.
- ▲ Ask what kind of pain or discomfort you may feel.
- ▲ Ask about the recovery period, how long it will last, and what it will involve.

Box C: Diabetes—The Self-Help Disease

Diabetes mellitus increases the risk to your heart. It also is the single most common cause of kidney disease.

If you have diabetes, you will need to control it. Because those with it must manage their condition day-by-day, diabetes is sometimes called the “self-help disease.”

In diabetes, the body cannot properly convert foods into energy. This causes a buildup in the blood of a form of sugar called glucose. The buildup produces symptoms and damages organs.

Women should have a routine test for diabetes. The doctor will test for too much sugar in the urine or blood.

Symptoms of diabetes include: a vague sick feeling, being “run down,” increased thirst, frequent urination, unexplained weight loss, blurred vision, skin infections or itching, and slow healing of cuts, bruises, and gum and urinary tract infections.

Controlling diabetes can help keep your heart healthy. For more information on diabetes, contact:

- ▲ National Diabetes Information Clearinghouse
Box NDIC
9000 Rockville Pike
Bethesda, MD 20892
(301) 654-3327

waves also can be used to see how much blood is pumped out by the heart when it contracts.

- ▲ Nuclear scan assesses heart muscle contraction as blood flows through the heart. A small amount of radioactive material is injected into a vein, usually in the arm, and a scanning camera then records how much is taken up by the heart muscle.
- ▲ Coronary angiography (or arteriography) displays blood flow problems and blockages. A fine, flexible tube (or “catheter”) is threaded through an artery of an arm or leg up into the heart. A fluid that shows up on x ray is then injected, and the heart

and blood vessels are filmed as the heart pumps.

The picture is called an angiogram or arteriogram.

Treating Your Heart Right

You can reduce your risk of complications of coronary heart disease. But you must do your part.

There are three main types of treatment: lifestyle, medication, and special procedures for advanced atherosclerosis. A discussion of each of these follows.

Lifestyle

Since you have coronary heart disease, you will need to take five key steps to keep your heart as healthy as possible:

stop smoking, lower high blood pressure, lower high blood cholesterol, lose any extra weight, and become physically active.

In fact, these steps are so crucial for good health that they should be adopted by all people, even the young. So as a plus, do them with your family and friends. Studies show that such support makes lifestyle changes easier. You’ll improve more if others join you in your new behavior. And teaching your children or grandchildren heart-healthy habits is a gift that will last them a lifetime.

Here’s more on the five steps:

Stop smoking cigarettes.

There is no safe way to smoke. Smoking accelerates atherosclerosis. If you smoke, you are two to six times more likely to have a heart attack than a nonsmoker, and your risk increases with the number of cigarettes you smoke each day.

But if you quit, then the risk to your heart drops sharply, even in the first year, no matter what your age.

Even if you’ve had a heart attack, you’ll benefit from quitting—some women’s risk of having a second heart attack is cut by 50 percent or more after they stop smoking.

The National Heart, Lung, and Blood Institute (NHLBI) has information to help you

kick the habit (see For More Information at the end) or ask your doctor for advice.

Lower high blood pressure.

Also called hypertension, high blood pressure usually has no symptoms. It has no cure but can and must be controlled. High blood pressure makes the heart work harder and, uncontrolled, can lead to heart disease, stroke, heart failure, kidney problems, and other conditions.

Blood pressure is given as two numbers—the systolic pressure over the diastolic pressure, and both are important. A measurement of 140/90 mm Hg or above means you have high blood pressure. But even pressures slightly under that can put your heart at greater risk.

Most American women over age 60 have high blood pressure—nearly 80 percent of black women over age 60 have it.

However, blood pressure does not have to increase with age—hypertension can be prevented. And controlling your blood pressure will reduce your chance of suffering a first or repeat heart attack. Discuss your blood pressure with your doctor.

A normal blood pressure level is around 120/80. Often, this can be reached through lifestyle changes. If necessary, a medication will be used. If a drug is prescribed, you must

take it as instructed, even if you feel fine because, if you stop, your blood pressure probably will rise again. (See the medication section for drugs that treat high blood pressure.) If you make lifestyle changes, however, your doctor may be able to decrease your medication.

The lifestyle steps that prevent and control high blood pressure are: losing excess weight, becoming physically active, choosing foods low in salt and sodium, and limiting alcohol intake. (The first two are described separately.)

Salt and sodium both affect blood pressure and must be watched. Salt (sodium chloride) is only one source of sodium, and there are others. You should consume no more than 6 grams (about 1 teaspoon) of salt a day, which equals 2.4 grams of sodium. This includes ALL salt—that in processed foods or added in cooking or at the table. A good way to keep track of sodium is by reading food labels.

If you drink alcohol, you should have no more than one drink a day. One drink equals 1.5 ounces of 80-proof whiskey, or 5 ounces of wine, or 12 ounces of beer (regular or light).

Recently, news stories have said that alcohol may lower the risk of having a heart attack. But this has yet to be proved. And too much alcohol has dangers. So if you

don't drink, it's best not to start.

Lower high blood cholesterol.

Why is cholesterol so important? The body makes all the cholesterol it needs. Extra cholesterol and fat in the diet cause the atherosclerotic buildup inside blood vessels. So, a high blood cholesterol leads to coronary heart disease.

And, once you have coronary heart disease, an elevated blood cholesterol increases your risk of a future heart attack. But you can take steps to keep your blood cholesterol from rising.

Cholesterol travels through the blood in protein-fat packages called lipoproteins. The two main types are: low-density lipoprotein, or LDL, which causes deposits and is termed the “bad” cholesterol; and high-density lipoprotein, or HDL, which helps remove cholesterol from the blood and is referred to as the “good” cholesterol.

Women who have coronary heart disease should have an LDL level of 100 mg/dL or less.

A low level of HDL (less than 35 mg/dL) is a major risk factor for coronary heart disease. Physical activity, weight loss if you're overweight, and stopping smoking help raise the level of HDL.

BOX D: Tips For Having Your Blood Pressure Taken

A blood pressure test is painless. Here are some tips to assure that you get a good reading:

- ▲ Before the test, sit for 5 minutes with your feet flat on the ground, arm resting on a table at the level of your heart
- ▲ Wear short sleeves so your arm is exposed
- ▲ If you know your arm requires a large adult cuff, say so
- ▲ Get two readings, taken at least 2 minutes apart, and average the results

Women with coronary heart disease need to have a “lipoprotein analysis” done to check their levels of total cholesterol, HDL, and LDL, as well as triglycerides, which is another type of fat in the bloodstream. Lipoprotein tests should be taken on two occasions and the results averaged. The level of LDL is usually the main target of treatment.

Many women with coronary heart disease can lower their high blood cholesterol enough through lifestyle changes. However, cholesterol-lowering drugs may be needed as well. Hormone replacement therapy (*see Box E*) also may improve blood cholesterol.

The lifestyle changes call for adopting a healthy eating

plan, becoming physically active, and losing excess weight (the latter two described below). For healthy eating, have:

- ▲ Less than 7 percent of your day’s total calories from saturated fat
- ▲ 30 percent or less of your day’s total calories from fat
- ▲ Less than 200 milligrams of dietary cholesterol a day
- ▲ Just enough calories a day to achieve and maintain a healthy weight

Foods high in total fat and in saturated fat are also high in calories and often in cholesterol. Saturated fat, which raises blood cholesterol more than anything else in the diet, is found mainly in foods that come from animals—dairy products, meat, and poultry skin. Some vegetable fats—coconut oil, cocoa butter, palm kernel oil, and palm oil—also are high in saturated fat. Cholesterol is found only in foods that come from animals—egg yolks, liver, and kidney, for example.

A few pointers: To cut down on saturated fat, total fat, and cholesterol, choose fish, poultry, and lean cuts of meat; choose low-fat foods; choose low-fat or no-fat milk and other dairy products; and eat plenty of fruits and vegetables. Breads, rice, and pasta made from enriched or whole grains also are good choices.

Broil, bake, roast, or poach, instead of frying, and be sure any sauce is also low in fat.

Lose excess weight.

America is becoming heavier—and older women are among those gaining weight. More than half of American women ages 50 to 59 are overweight—30 years ago, only 35 percent of them were. This is a dangerous trend, because being overweight increases the risk of coronary heart disease, even if there are no other risk factors.

But being overweight also increases the chance of developing several other risk factors, which would compound the danger.

Losing excess weight is critical for good health. But weight loss must be viewed as a change of lifestyle, not as a temporary effort to drop pounds quickly. Such quick fixes are just that—temporary. The weight soon returns.

To lose weight, follow a heart-healthy eating plan and become physically active. Eat a variety of low-calorie, nutritious foods in moderate amounts. Keep to the eating pattern outlined for high blood cholesterol. Do not try to lose more than one-half to one pound a week.

Remember: When it comes to weight loss, take it slow and steady—learn a new way of eating to get to and stay at a healthy weight.

BOX E: Hormone Replacement Therapy—New Findings

At menopause, the ovaries essentially stop all production of the hormone estrogen. Menopause can occur naturally or surgically.

Hormone replacement therapy (HRT) supplies the estrogen the body no longer makes. It has been used to relieve the symptoms of menopause, such as hot flashes and flushes, sweats, disturbed sleep, and an increased rate of bone loss.

New information from the Postmenopausal Estrogen/Progestin Intervention Trial (PEPI) suggests that HRT may also improve coronary heart disease risk factors after menopause. The research found that estrogen given alone or with a natural or synthetic progesterone increased HDL and decreased LDL. Progesterone is also a hormone made by the ovaries until menopause; it helps control the growth of cells that line the uterus. None of the HRT therapies tested significantly affected blood pressure or weight. But estrogen taken alone caused abnormal cell growth of the lining of the uterus.

PEPI's findings offer these guidelines:

- ▲ If you have a uterus, you may want to consider a combination therapy that uses both estrogen and a progesterone. If you have a uterus and take estrogen alone, you need to have a yearly endometrial biopsy.
- ▲ If you don't have a uterus, you may want to consider taking estrogen without a progesterone.

However, uncertainties remain, including the effects of HRT on breast cancer risk. So far, studies have had conflicting findings and more research is ongoing. Current evidence suggests that there is a small increased risk of breast cancer from HRT but that, for most women, the benefits of HRT probably outweigh the risk.

You should discuss these questions with your doctor.

Become physically active.

Physical activity is one of the best ways to control coronary heart disease. It is vital for good health and well-being. It helps lower LDL and raise HDL. Even if you're overweight, you'll have a lower blood pressure if you're active.

You may worry that "becoming physically active" requires a lot of time and effort. Not so. Research shows that even a little exer-

cise can improve your heart's health. And "exercise" can mean going up a flight of stairs (instead of taking the elevator) or gardening or walking at the mall. Walk with a friend or your husband, or get your whole family moving together.

Try to do some type of activity for at least 30 minutes on most days. But, if 30 minutes is too long a period, break up the time into shorter sessions done throughout the day.

Incorporate exercise into your other daily activities too.

Since you have coronary heart disease, you should consult with your doctor before starting a physical activity program. This is especially important if you're over age 55, have been inactive, or have diabetes or another medical problem. Your doctor can help you prevent problems from overexertion.

It also is important to exercise in a way that will help you without hurting you. If you've been inactive, start slowly. Walking 10-15 minutes, three times a week, makes a good start.

If you've had a heart attack, you'll benefit greatly from exercise. Many hospitals have a "cardiac" (heart) rehabilitation program. Ask your doctor about your ability to exercise and about a suitable program for you.

If you have arthritis or another limiting condition, you may benefit from exercises that help keep you as flexible and healthy as possible. Again, ask your doctor about a suitable exercise.

Medications

A healthy lifestyle will improve your heart's condition. But you may need medication too, especially if you have chest pain, or if you have high blood pressure or high blood cholesterol that was not lowered enough with lifestyle changes.

**Heart Disease and Women:
So You Have Heart Disease**

Drugs can have side effects, so none should be taken without first seeing your doctor. If you take a drug, follow the dose instructions carefully and report any troublesome side effects to your doctor. Often a change in dose or type of drug can stop the side effect. Your doctor may even prescribe a combination of drugs to treat your coronary heart disease.

The following list will briefly introduce you to some medications used to treat coronary heart disease and its risk factors. If you need a medication, discuss it with your doctor and be sure you understand how and why it should be taken.

- ▲ Aspirin—helps prevent heart attacks when taken regularly in a low dose on a doctor's orders.
- ▲ Digitalis—makes the heart contract harder and is used when the heart's pumping function has been weakened; it also slows some fast heart rhythms.
- ▲ ACE inhibitor—stops production of a chemical that makes blood vessels narrow and is used for high blood pressure and heart muscle that has been damaged.
- ▲ Beta-blocker—reduces how hard the heart must work and is used for high blood pressure, chest pain, and to prevent a repeat heart attack.

- ▲ Nitrate (including nitroglycerine)—relaxes blood vessels and alleviates chest pain.
- ▲ Calcium-channel blocker—relaxes blood vessels; used for high blood pressure and chest pain.
- ▲ Diuretic—decreases fluid in the body and is used for high blood pressure.
- ▲ Blood cholesterol-lowering agents—HMG CoA reductase inhibitors (or “statins”), nicotinic acid, bile acid sequestrants, fibric acid derivatives, and probucol.

Special Procedures

If you have advanced atherosclerosis, you may need a special procedure to open an artery and improve blood flow. This is usually done to ease severe chest pain or clear major or multiple blockages in blood vessels.

The two main procedures are:

- ▲ Coronary angioplasty—also called “balloon” angioplasty. A fine tube is threaded through an artery to the narrowed heart vessel, where a tiny balloon at its tip is inflated. The balloon flattens the buildup and stretches the artery, improving blood flow. It is then deflated and removed, along with the tube.
- ▲ Coronary artery bypass graft surgery—also known as “bypass surgery.” A piece of blood vessel is taken from the leg or chest and is

stitched onto the narrowed heart artery, making a bypass around the blockage. Sometimes, more than one bypass is needed.

Bypass surgery is used when blockages in an artery can't be reached by, or are too long or hard for, angioplasty. A bypass requires about 1 week in the hospital and several weeks of recuperation at home.

For More Information

The NHLBI has more information that can help you improve your heart health. Materials cover such topics as: how to stop smoking, high blood cholesterol, high blood pressure, physical activity, heart-healthy recipes, hormone replacement therapy, coronary heart disease, heart failure, and heart arrhythmias.

Contact:

NHLBI Information Center
P.O. Box 30105
Bethesda, MD 20824-0105
(301) 251-1222

The NHLBI also has a toll-free telephone line with recorded messages about the treatment and prevention of high blood pressure and high blood cholesterol.

Call: *1-800-575-WELL*.

Remember:

Take action and take charge!

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