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By Michelle Meadows

## How to Keep Your Heart Healthy

Sixty-two-year-old Jack Andre says having a heart attack in March 2003 was like getting hit in the head with a baseball bat. "It brought a lot of things to my attention that I never thought about before," he says. He was overweight, didn't exercise, and often ate high-fat foods. But he never connected his lifestyle to his heart.

"Six months before the heart attack, my doctor told me I had borderline high cholesterol and high blood pressure," says Andre, of Rockville, Md. "But I didn't think much of it."

That all changed after he experienced heart attack symptoms--extreme fatigue, dizziness, and back pain. Tests revealed that Andre had three clogged coronary arteries. "Now I walk every day at lunch, eat smaller portions, and I'm a food label reader," he says.

Bonnie Brown, 50, of Baltimore, says she also didn't change her life until she had a heart attack in 1997. "I used to smoke, ate cold-cut subs for breakfast, and had lots of fried foods, all the time, any time," Brown says. But her heart attack--which she initially mistook for a bad case of indigestion--led her to give up cigarettes, improve her diet, and sign up for weekly water aerobics and line dancing classes.

"There's nothing that motivates people like having a heart attack or bypass surgery," says Christopher Cates, M.D., director of vascular intervention at the Emory Heart Center in Atlanta. "I've found that people think that heart disease always happens to someone else, until it happens to them." Experts say that until Americans change their way of thinking from one of damage control to one of proactive prevention, heart disease will remain the No.1 killer of men and women in the United States.

"In many ways, I think we've become insulated by high-tech care," Cates says. "As physicians, we are partners in the health care of our patients, which means we need to educate them about their risk factors for heart disease. And they need to have some sense of ownership about what they can control. They can't simply look to their doctors or to the FDA or to Medicine, and say, 'Cure me, but I'm going to eat fatty foods, smoke, and be sedentary.'"

One of the reasons that some people may shrug off the possibility of developing heart disease is that it's a gradual, lifelong process that people can't see or feel. About the size of a fist, the heart muscle relies on oxygen and nutrients to continually pump blood through the circulatory system. In coronary artery

disease, the most common type of heart disease, plaque builds up in the coronary arteries, the vessels that bring oxygen and nutrients to the heart muscle. As the walls of the arteries get clogged, the space through which blood flows narrows. This decreases or cuts off the supply of oxygen and nutrients, which can result in chest pain or a heart attack. Damage can result when the supply is cut off for more than a few minutes. It's called a heart attack when prolonged chest pain or symptoms (20 minutes or more) are associated with permanent damage to the heart muscle.

Every year, more than 1 million people have heart attacks, according to the National Heart, Lung, and Blood Institute (NHLBI). About 13 million Americans have coronary heart disease, and about half a million people die from it each year.

### **What's Your Risk Profile?**

Risk factors for heart disease are typically labeled "uncontrollable" or "controllable." The main uncontrollable risk factors are age, gender, and a family history of heart disease, especially at an early age.

The risk of heart disease rises as people age, and men tend to develop it earlier. Specifically, men ages 45 and older are at increased risk of heart disease, while women 55 and older are at increased risk. A woman's natural hormones give some level of protection from heart disease before menopause.

"Heart disease presents in women an average of seven to 10 years later than in men," says Patrice Desvigne-Nickens, M.D., leader of cardiovascular medicine at the NHLBI. "But after menopause, women develop heart disease as often as men, and women who have a heart attack don't fare as well as men." Women are more likely than men to die from a heart attack.

Though heart disease is the leading cause of death for both men and women in this country, surveys have shown that many women don't know it, and that they are more worried about cancer, especially breast cancer. "We want women to know that heart disease is not a man's disease. Rather, heart disease is the leading cause of death for women, and heart disease is preventable and treatable," says Desvigne-Nickens.

The NHLBI defines having a family history of early heart disease this way: A father or brother who had heart disease before 55, or a mother or sister who had heart disease before 65. Be sure to tell your doctor if any of your family members have had heart disease. Andre says it was only after he had a heart attack that he learned that he had four uncles who had been diagnosed with coronary artery disease.

Even if you have uncontrollable risk factors for heart disease, it doesn't mean that you can't take steps to limit your risk. Researchers say that controllable risk factors--physical inactivity, smoking, overweight or obesity, high blood pressure, high blood cholesterol, and diabetes--are all major influences on the development and severity of heart disease.

According to Cynthia Tracy, M.D., chief of cardiology at Georgetown University Hospital in Washington, D.C., the best way to combat heart disease is to know the risk factors, "own" the risk factors that apply to you, and address the ones that are controllable. "I think many people can rattle off risk factors, but

then they don't internalize them to say: 'That's a risk factor for me. I am at risk for heart disease. And now I'm going to do something about it,'" Tracy says.

### **Taking Charge of Your Health**

Because of advances in medicine and technology, people with heart disease are living longer, more productive lives than ever before. But prevention is still the best weapon in the fight against heart disease. As with anything in life, there are no guarantees. You could do all the right things and still develop heart disease because there are so many factors involved. But by living a healthier life, you could delay heart disease for years or minimize its damage. Whether you are already healthy, are at high risk for heart disease, or have survived a heart attack, the advice to protect your heart is the same.

Get moving and maintain a healthy weight. Exercise improves heart function, lowers blood pressure and blood cholesterol, and boosts energy. And being overweight forces the heart to work harder. But about 1 in 4 U.S. adults are sedentary.

The general recommendation from the NHLBI is to get at least 30 minutes of moderate physical activity on most, and preferably all, days of the week. And you don't need to run a marathon or buy an expensive gym club membership to do it. The 30 minutes also don't have to be done all at once, but can be broken up into 10-minute intervals throughout your day.

"Exercising is like taking the pennies from under the couch cushions and putting them into your piggybank," says Ann Bolger, M.D., a spokeswoman for the American Heart Association (AHA) and a cardiologist in San Francisco. "Every little bit counts."

Vigorous exercise like running or doing aerobics brings more health benefits than lighter intensity activities, but walking is a great form of exercise. Brisk walking can get your heart rate up and give you a solid workout. Walking at a comfortable pace can work well for many people, too. "The best exercise is the one you feel good about and can do over and over again," Bolger says. And it's easier to work exercise into your everyday routine than you might think.

For example, Bolger suggests parking farther away when you go to the grocery store or to your office to create a longer walk, taking the stairs, walking all the way around a mall the next time you go shopping, and walking around your neighborhood. Getting support from a walking buddy or a walking group can be a good way to keep you motivated.

Talk with your doctor about what form of exercise is best for you. Those with severe heart disease, for example, are advised against strenuous exercise.

Desvigne-Nickens suggests that you teach your children early that exercise is fun and good for them. Families can walk together, ride bikes, and chase after balls in a park. "But we have to show them," she says. "Our children are exercising their thumbs with computers and video games, and obesity in childhood is epidemic."

Stick to a nutritious, well-balanced diet. This advice might make you groan if your usual lunch consists of cheeseburgers with french fries or pizza slices topped with sausage. But the good news is that diet isn't an all-or-nothing affair.

A heart-healthy diet means a diet that's low in fat, cholesterol, and salt, and high in fruits, vegetables, grains, and fiber. "But it doesn't mean that you can never have pizza or ice cream again," Bolger says. You could start by telling yourself that you will eat a big leafy green salad first, and then you will have one slice of cheese pizza, not three slices with sausage. "Or if you must have a burger, don't get your usual order of french fries," Bolger suggests. "That alone cuts hundreds of calories."

Experts point out that a heart-healthy diet should be the routine. That way, when you have high-fat food every now and then, you're still on track. Making a high-fat diet the routine is asking for trouble.

Bolger teaches people about the AHA's Simple Solutions program, which helps women--often the ones who do the cooking and grocery shopping--adopt simple ways to improve eating habits for the whole family. For example, it's wise to make a grocery list so that you can carefully plan your meals. "You have to make a conscious decision to make your snack a bag of grapes instead of a candy bar or cookies," Bolger says.

Bolger also asks her patients to tell her the food or food group that gets them into trouble. If you pin that down you can start to make healthy substitutions. Tell Bolger that overloading on ice cream is your downfall and she'll tell you about her recipe for a berry dessert: Use nonfat yogurt, sweeten it up as much as you want with a sugar substitute, add a drop of vanilla extract, microwave frozen strawberries briefly to soften them up, add the berries, stir it all around, and enjoy.

Like exercise, good eating habits need to start early. "Teaching your children to eat well is one of the most loving things you can do for them," Bolger says. Your children tend to follow your lead, eat what you eat, and eat what you put in front of them. It's up to you how often you put a banana in front of them instead of high-fat cookies.

Look at the Nutrition Facts label on the foods you buy for guidance. The general rule of thumb is that foods that provide 5 percent of the daily value (DV) of fat or less are low in fat, and foods that are labeled as providing 20 percent or more of the daily value are high in fat.

Control your blood pressure. About 50 million American adults have high blood pressure, also called hypertension. The top number of a blood pressure reading, called the systolic pressure, represents the force of blood in the arteries as the heart beats. The bottom number, called diastolic pressure, is the force of blood in the arteries as the heart relaxes between beats. High blood pressure makes the heart work extra hard and hardens artery walls, increasing the risk of heart disease and stroke.

A blood pressure level of 140 over 90 mm Hg (millimeters of mercury) or higher is considered high. The NHLBI recently set a new "prehypertension" level of any reading above 120 over 80 mm Hg.

Poor eating habits and physical inactivity both contribute to high blood pressure. According to the NHLBI, table salt increases average levels of blood pressure, and this effect is greater in some people than in others.

The National Institutes of Health's DASH diet (Dietary Approaches to Stop Hypertension) is rich in fruits, vegetables, and low-fat dairy foods, and low in total and saturated fat. The DASH diet also reduces red meat, sweets, and sugary drinks, and it's rich in potassium, calcium, magnesium, fiber, and protein.

It's important to keep on top of your blood pressure levels through regular doctor visits. High blood pressure disproportionately affects racial and ethnic minority groups, including blacks, Hispanics, and American Indians/Alaska Natives. The condition is known as a silent killer because there are no symptoms. If lifestyle changes alone don't bring your blood pressure within the normal range, medications may also be needed.

Recent NHLBI research has shown that older, less costly diuretics work better than newer medicines to treat high blood pressure. These findings, part of the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT), were published in the Dec. 18, 2002, issue of the Journal of the American Medical Association.

Control blood cholesterol. Cholesterol is a fat-like substance in the blood. High levels of triglycerides, another form of fat in the blood, can also indicate heart disease risk.

As with blood pressure, eating a low-fat, low-cholesterol diet and engaging in physical activity can lower cholesterol levels. Your body turns saturated fats into cholesterol. And the higher your cholesterol level, the more likely it is that the substance will build up and stick to artery walls.

The only way to find out your cholesterol levels is to go to a doctor and have a blood test after fasting for nine to 12 hours. A lipoprotein profile will reveal your total cholesterol, which is measured in milligrams (mg) of cholesterol per deciliter (dL) of blood. Total cholesterol less than 200 mg/dL is desirable, 200-239 mg/dL is borderline high, and 240 mg/dL or more is high.

Low-density lipoprotein (LDL), also known as "bad cholesterol," should be less than 100 mg/dL. A level of 100-129 mg/dL is near optimal/above optimal, 130-159 mg/dL is borderline high, 160-189 mg/dL is high, and 190 mg/dL and above is very high.

High-density lipoprotein (HDL), also known as "good cholesterol," protects the arteries from bad cholesterol buildup, so the higher the HDL, the better. HDL levels of 60 mg/dL or more help lower heart disease risk, and an HDL level of less than 40 mg/dL is considered low.

People ages 20 and older should have cholesterol measured at least once every five years. If lifestyle changes alone don't adequately budge cholesterol levels, medications may be needed.

Experts say the drug class known as "statins" marks a significant advance in preventing heart disease. These drugs work by partially blocking the synthesis of cholesterol in the liver, which helps remove cholesterol from the blood. Along with lowering cholesterol, statins help stabilize blood vessel

membranes. Examples include Lescol (fluvastatin), Pravachol (pravastatin), Zocor (simvastatin), and Lipitor (atorvastatin). The most recent addition to this class, AstraZeneca Pharmaceuticals' Crestor (rosuvastatin), was approved by the Food and Drug Administration in August 2003. Even with drug treatment, a cholesterol-lowering diet and exercise are still recommended.

### Heart-Smart Substitutions

INSTEAD OF:	DO THIS:
whole or 2 percent milk and cream	use 1 percent or skim milk
fried foods	eat baked, steamed, boiled, broiled, or microwaved foods
lard, butter, palm and coconut oils	cook with unsaturated vegetable oils such as corn, olive, canola, safflower, sesame, soybean, sunflower, or peanut
fatty cuts of meat	eat lean cuts of meat or cut off the fatty parts
one whole egg in recipes	use two egg whites
sauces, butter, and salt	season vegetables with herbs and spices
regular hard and processed cheeses	eat low-fat, low-sodium cheeses
salted potato chips	choose low-fat, unsalted tortilla and potato chips and unsalted pretzels and popcorn
sour cream and mayonnaise	use plain low-fat yogurt, low-fat cottage cheese, or low-fat or "light" sour cream

Prevent and manage diabetes. About 17 million people in the United States have diabetes, and heart disease is the leading cause of death of those with the disease. According to the American Diabetes Association (ADA), 2 out of 3 people with diabetes die from heart disease or stroke.

Diabetes is a disease in which the body does not properly produce or use insulin. Insulin is a hormone needed to convert sugar, starches, and other nutrients into energy. Another 16 million Americans have pre-diabetes, a condition in which blood glucose levels are higher than normal, but not high enough to

be diagnosed as diabetes. Genetics and lifestyle factors such as obesity and physical inactivity can lead to diabetes.

One in three people who have diabetes don't know they have it. See a doctor if you have any diabetes symptoms, which include frequent urination, excessive thirst, extreme hunger, unusual weight loss, increased fatigue, irritability, and blurry vision.

Quit smoking. Ditch the cigarettes and you'll dramatically lower your heart attack risk. And if you don't smoke, don't start. Along with raising your risk of lung cancer and other diseases, the mixture of tar, nicotine, and carbon monoxide in tobacco smoke increases the risk that your arteries will harden, which restricts blood flow to the heart.

Smokers have more than twice the risk of having a heart attack as non-smokers. According to the AHA, smoking is the biggest risk factor for sudden cardiac death, and smokers who have a heart attack are more likely to die than non-smokers who have a heart attack.

In the first year that you stop smoking, your risk of coronary heart disease drops sharply, according to the NHLBI. And over time, your risk will gradually return to that of someone who has never smoked.

Minimize stress. After having a heart attack in 1987, Dennis Everett, 61, retired early from a high-stress job and moved with his wife, Joyce, from Vienna, Va., to Berkeley Springs, W.Va.--a rural resort town that gives Everett a relaxing life.

Stress management was a major part of Everett's recovery, which also included improving his diet, going for daily walks, and giving up smoking. "I couldn't have done it without the support of my wife," he says. "Spouses also have a big adjustment."

The link between stress and heart disease isn't completely clear, but what's known for sure is that stress speeds up the heart rate. And people with heart disease are more likely to have a heart attack during times of stress.

Everett was serving as coach for a girls' softball team when the pain he had been experiencing in his left arm for a few days became unbearable. "It hurt so bad that I had to hold my left arm up with my right one," he says. He happened to mention his symptoms to a player's father, a dentist. "He told me, 'I hate to tell you this, but those are the signs of a heart attack,'" Everett says. "That's when we called 911."

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## **Heart Attack Symptoms**

Research has shown that people typically wait two hours or more before seeking emergency care for heart attack symptoms. It could be because they are uncertain about their symptoms or concerned that it might be a false alarm. But clot-busting medications and other effective treatments that restore blood flow and save heart muscle are most effective in the first hour following a heart attack.

Symptoms of heart attack include chest discomfort or pain, discomfort in the arm(s), back, neck, jaw, or stomach, shortness of breath, breaking out in a cold sweat, nausea, and lightheadedness. Most heart attacks don't involve someone clutching the chest and dropping to the floor like you might see on TV. It's also important to know that heart attack symptoms for men can be different than symptoms for women.

"The classic sign is when someone comes into the emergency room, puts their fist on their chest, and says it feels like a squeezing pressure," says Cynthia Tracy, M.D., chief of cardiology at Georgetown University Hospital in Washington, D.C. "But it's not always like that. For women, it may present as back pain, flu-like symptoms, or a sense of impending doom."

"We need women to be aware of their symptoms, and we need doctors to put the pieces together and say, 'This woman is postmenopausal and her mother died of a heart attack at 47. So even though her symptoms don't sound classic, I need to investigate her for coronary disease.'"

When Bonnie Brown, 50, of Baltimore, felt a sharp pain in the middle of her chest in 1997, she thought it was indigestion and assumed the feeling would pass. But something made her tell her sister, Joan Hamilton, 53, who lived with her at the time. Joan noticed how pale Bonnie looked and insisted they call an ambulance. Soon after, doctors confirmed that she was having a heart attack.

Then, amazingly enough, Joan also had a heart attack--two weeks after Bonnie did. For Joan, her main symptom was persistent pain in the left arm. "I thought it was from lifting boxes," Joan says, "but I don't tolerate pain too well so I checked it out."

Both Bonnie and Joan used to think heart disease was only for men. Both women are part of the Red Dress Project, the centerpiece of the Heart Truth campaign, sponsored by the National Institutes of Health. The Red Dress Project features a collection of 19 red dresses from America's most prestigious designers, with the dresses symbolizing the fact that heart disease is a women's issue too.

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## **Treating Heart Disease**

Once doctors determine that you have clogged coronary arteries, the treatment plan typically involves a combination of drugs, lifestyle changes, and procedures that open up the arteries.

Drugs: Thrombolytic drugs, also referred to as "clot-busting drugs," are given during a heart attack to dissolve blood clots in coronary arteries and restore blood flow to the heart.

Because of its anti-clotting abilities, aspirin is recognized by the Food and Drug Administration as safe and effective to help lower the risk of having a second heart attack.

Other drugs commonly used to treat people with heart disease include drugs that lower blood pressure, angiotensin-converting enzyme (ACE) inhibitors, which help the heart pump blood better, and beta blockers, which slow the heart down. Nitrates and calcium channel blockers relax blood vessels and

relieve chest pain. Diuretics decrease fluid in the body. Blood cholesterol-lowering drugs reduce levels of low-density lipoproteins (LDL), the "bad cholesterol," in the blood and increase high-density lipoproteins (HDL), the "good cholesterol."

**Catheter-based treatments:** Angioplasty is a procedure in which a thin tube called a catheter is put into an artery in the groin and threaded up to the narrowed artery in the heart. The catheter, which has a balloon at the tip, is used to widen the artery. Routinely, tiny mesh wire tubes called stents are then inserted into the artery to hold it open permanently. But a major challenge is restenosis, which is the relogging or renarrowing of an artery after angioplasty or stenting.

Maureen Magoon, 67, of Blairsville, Ga., who was diagnosed with heart disease in 1999, has experienced problems with restenosis since receiving angioplasty. So when her doctors at the Emory Heart Center in Atlanta recently discovered that another one of her arteries was clogged, they determined that she was a good candidate to receive the Cypher Stent from Cordis Corp., the first drug-eluting stent.

The new stent, approved by the FDA in May 2003, releases the drug sirolimus, which reduces the risk that the artery will reclog. As part of its conditions for approving the Cypher Stent, the FDA is requiring Cordis to conduct a post-approval study of 2,000 patients to assess the long-term safety and effectiveness of the new device. The agency is monitoring reports of problems with the stent, as it does with all medical devices.

A process called intravascular radiation therapy, which uses radiation to kill cells that are clogging an artery, is sometimes used during angioplasty procedures. Also known as brachytherapy, this treatment is not approved for use with the placement of a stent for a vessel that has never been treated, says Jonette Foy, Ph.D., a biomedical engineer in the FDA's Center for Devices and Radiological Health. "Brachytherapy is approved for vessels that have been previously stented, but reoccluded over time."

**Coronary bypass surgery:** In cases of severe blockages or when someone is unresponsive to medications or not a candidate for angioplasty, doctors may perform coronary bypass surgery. This involves taking a blood vessel from the leg or chest and grafting it onto the blocked artery to bypass the blockage.

In the last few years, the FDA has approved several devices that improve heart disease diagnosis and treatment. For example, after a person has received coronary bypass surgery, devices are used to catch loose particles that could potentially float downstream and clog another artery. This process is known as embolic protection.

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### **C-reactive Protein: A New Risk Factor**

Among the new risk factors that may be linked to increased risk of cardiovascular disease is C-reactive protein (CRP). It's produced by the liver as a response to injury or infection and is a sign of inflammation in the body. Research correlates high levels of CRP with an increased risk of heart attack and stroke. Though the evidence is conflicting, some researchers believe that CRP itself is not a risk factor, but

elevated levels of CRP could mean that some part of the cardiovascular system is inflamed, which can lead to stroke or heart attack. Information about CRP and other new risk factors is still emerging.

Source: Mayo Clinic

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### **For More Information**

National Heart, Lung, and Blood Institute  
(800) 575-WELL (575-9355)

[www.nhlbi.nih.gov/health/hearttruth](http://www.nhlbi.nih.gov/health/hearttruth)

American Heart Association  
(800) AHA-USA-1 (242-8721)

[www.americanheart.org/simplesolutions](http://www.americanheart.org/simplesolutions)