

IN-DEPTH //
HEART HEALTH



CARDIAC CARE

Heart disease is a killer. It's the No. 1 cause of death worldwide, and it slays more than 7 million people annually. But there's good news: It doesn't take much to make your heart happy. These simple lifestyle changes can decrease your risk and improve your quality of life.

By Andrea Kahn

Get Active

Buy a pair of athletic shoes. Put them on. Walk out the door. Your heart is thanking you already. "Walking is the best thing you can do for yourself," says Dr. Robert G. Hauser, a senior consulting cardiologist at the Minneapolis Heart Institute. "Studies show that there are almost immediate benefits from brisk walking. The more you walk, the longer you live." The American Heart Association recommends 150 minutes a week of moderate exercise or 75 minutes a week of vigorous exercise. Exercise not only helps maintain a healthy weight, it also reduces blood pressure, increases good cholesterol and improves the body's sensitivity to insulin, which helps control blood sugar.

Even moderate exercise—such as walking—can reduce your risk of heart disease.



Lose the Gut

Quick, what's your body mass index (BMI)? The more overweight you are, the greater your chances of developing heart disease. Knowing your BMI—a ratio of height to weight used as an indicator of body fatness—is a good place to start. Too much fat increases the risks of high blood pressure, high cholesterol and diabetes, which are all major causes of heart disease. In fact, the size of your waist alone is a major indicator of potential heart problems. According to the American Heart Association, those with large waists—greater than 35 inches for women and greater than 40 inches for men—have an increased risk of developing cardiovascular disease. To calculate your BMI, visit the American Heart Association's website at heart.org.



Excess weight makes your heart work harder, and it raises blood pressure and blood cholesterol.



Unsaturated fats—such as those found in olive oil—are good for your heart in moderation.

Eat Well

A diet low in saturated fat and salt and high in fruits, vegetables, whole grains, low-fat dairy products, meaty fish and lean protein will do wonders for your heart. Keep in mind that some fat—the unsaturated kind—can actually protect against heart disease. “Cook with olive oil and snack on nuts such as almonds—a handful, not a bagful,” says Dr. Donald M. Lloyd-Jones, chair of preventive medicine at Northwestern University’s Feinberg School of Medicine. And don’t assume supplements can take the place of wholesome food. “Many studies have shown that vitamins and supplements do absolutely nothing,” Lloyd-Jones says. “Instead of taking a pill, spend your money on eating healthily.” And a glass of red wine every day—but no more than a glass—won’t hurt, either. According to the Mayo Clinic, red wine is a rich source of antioxidants and a substance called resveratrol, both of which have been shown to have heart-healthy benefits.



A healthy diet including fruits and vegetables can reduce your risk of cardiovascular disease.



Don’t Smoke

About 20 percent of all deaths from heart disease in the United States are directly related to smoking. Smoking causes immediate and long-term increases in blood pressure and heart rate, and “smokers are more likely to die suddenly, with no warning signs,” Hauser says. The longer and the more you smoke, the higher your risk of heart attack. When you smoke, you’re also killing the people around you. Secondhand smoke contributes to the death of approximately 38,000 nonsmokers each year in the United States.

Know Your Numbers

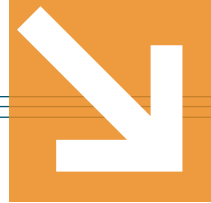
High blood pressure, high cholesterol and high blood glucose increase the risk of heart disease, and there are often no symptoms to warn you. Start checking your numbers at age 25—or earlier if you have known risk factors, such as a family history of heart disease. Studies by Lloyd-Jones and other researchers at Northwestern University show that people who keep all three factors in the healthy range reduce their risk of death from cardiovascular disease by 70 to 85 percent, compared with people who have at least one high-risk reading. //



High blood pressure is a risk factor for heart disease. Check your numbers regularly.

HEART DISEASE // Risk Factors

➔ HIGH BLOOD PRESSURE: About one out of three U.S. adults has high blood pressure—one of the most common heart disease risk factors.	➔ HIGH CHOLESTEROL: Approximately one in every six U.S. adults has high cholesterol. The higher your cholesterol, the greater your risk for heart disease.	➔ OBESITY: Between 60 and 70 percent of Americans are overweight or obese—a risk factor for heart disease.	➔ INCREASING AGE: Men older than 45 and women older than 55—or women who have gone through menopause—are at greater risk for heart disease.	➔ GENDER: Men have a greater risk of heart attack than women, and men have attacks about 10 years earlier in life.	➔ DIABETES: People with diabetes are two to four times more likely to develop cardiovascular disease.	➔ HEREDITY: You’re at an increased risk if you have a close blood relative—mother, father or sibling—with coronary heart disease.
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Breakthrough RESEARCH

Heart disease is the leading cause of death in the United States, and high blood pressure and high cholesterol are major risk factors. But two new treatments could make a big difference. By Sara Aase



Dr. Christopher Cannon
Brigham and
Women's Hospital

ANACETRAPIB //

Raising good cholesterol

Will raising high-density lipoprotein (HDL) cholesterol levels protect people from heart disease? Recent failure of two other therapies—the vitamin niacin and the drug torcetrapib—has only accelerated interest in a drug called anacetrapib, says Dr. Christopher Cannon, senior investigator of the TIMI Study Group in the cardiovascular division of Brigham and Women's Hospital in Boston. The theory is that raising HDL levels could have protective effects. What may turn out to be even more important is the drug's ability to cut low-density lipoprotein (LDL) cholesterol levels, Cannon says.

Anacetrapib raises HDL by blocking transformation of cholesterol from HDL to LDL. In a recent clinical trial on 1,623 patients already taking statins to lower LDL levels, anacetrapib more than doubled levels of HDL cholesterol, from 40 milligrams per deciliter (mg/dL) to 101 mg/dL, and cut their LDL levels from 81 mg/dL to 45 mg/dL, or 40 percent. “These are never-before-seen levels,” Cannon says.

A subsequent trial of 30,000 people will test the drug therapy for FDA approval, with results expected by 2015.

SYMPPLICITY //

Turning off overactive nerves

A new device that uses radio waves to deactivate nerves running to and from the kidneys could offer reliable blood pressure control. This would be a first for up to 20 percent of U.S. citizens whose blood pressure does not respond to medications, according to Dr. Murray Esler, chief investigator of a small trial of the Symplicity catheter system published last fall and associ-



Dr. Murray Esler
Baker IDI Heart and Diabetes Institute

ate director of the Baker IDI Heart and Diabetes Institute in Melbourne, Australia.

The technique reduced blood pressure to controlled levels in 39 percent of patients in the trial. On average, it produced a 32-point drop in systolic blood pressure, a measure of pressure at the point of heartbeat. It also produced a 12-point drop in diastolic blood pressure, the measure of pressure between beats.

“The people in this trial were on an average of five different antihypertensive drugs, with a systolic reading of 180,” Esler says. A systolic reading of 140 or lower is considered controlled, and below 120 is ideal. “Your chances of stroke at that 180 level increase sixfold, so this kind of reduction [could] reduce the incidence of strokes and heart attacks and prolong life.”

The Symplicity catheter is currently approved for use in Europe and Australia. It must undergo more clinical trials for FDA approval, with results expected by 2014. //

COMBATING HEART DISEASE



*Dr. William O'Neill,
executive dean
for clinical affairs
at the Univer-
sity of Miami
Miller School
of Medicine
(med.miami.edu),
discusses the
cardiovascular divi-
sion's top initiatives.*

Q: What research is the Miller School conducting on sudden cardiac death?

A: We are collaborating with athletic departments in Miami Dade County high schools to try to prevent sudden death in athletes. Some inherited cardiac problems become manifest when athletes are high school-aged. We think that all of these athletes should be screened with electrocardiograms [a test that records the electrical activity of the heart] and then possibly, for those with abnormalities, be screened by echocardiograms [a test that uses sound waves to produce moving images of the heart]. I think that this will be a huge advantage in helping decrease this awful problem in young athletes.

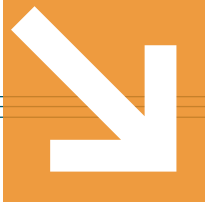
Q: Tell us about the Miller School's Advanced Heart Failure and Transplant Program.

A: Dr. Joshua Hare and his colleagues are using stem cells to regrow the heart muscle. He has three FDA approved protocols. [His team is taking] adult stem cells and, with a catheter that has a tiny needle at the tip, injecting the stem cells directly into the damaged heart walls. They have some very exciting data showing that varied diseased portions of the heart wall can return to normal function [after this treatment].

Q: What are a few tips for leading a heart-healthy lifestyle?

A: The most important thing adults should do is exercise for half an hour three times a week. Avoid carbohydrates and maintain your cholesterol level at low levels. Usually diet and exercise, in combination with statins, will get your cholesterol down to a good level. //

—Madeleine Hill



A High-Level Study //

Researchers at the Montefiore Einstein Center for Heart and Vascular Care use high altitudes to strengthen patients' hearts.



Dr. Simon Maybaum, a cardiologist at the Montefiore Einstein Center for Heart and Vascular Care in New York, wanted to help heart failure patients improve their physical performance. To find a solution, he looked to athletes for inspiration. That's how Maybaum and his colleagues came up with the simulated high altitude study.

THE IDEA // "Many athletes sleep at high altitudes and drop down to lower altitudes to do their training," Maybaum says. "When you're acclimated to a higher altitude, your blood can better carry oxygen, because more red blood cells are made." Red blood cells release oxygen into the body, making it easier to move the arms and legs.

"Athletes monopolize on those changes and use them to push themselves further," he says. Researchers at Montefiore decided to apply that theory to heart failure patients. The result was the simulated high altitude study, the first of its kind.

THE STUDY // Maybaum and his colleagues recently completed a pilot study of 15 patients. The patients sat in an airtight enclosure attached to a generator that produces low oxygen content three times a week for a total of 10 sessions. Before and after the study, patients were tested for heart function and exercise performance.

THE RESULTS // After participating in the study, patients showed improvements in exercise performance, muscle strength and quality of life. "We reported our preliminary



Researchers at the Montefiore Einstein Center for Heart and Vascular Care test a patient for exercise performance.

results to The International Society for Heart and Lung Transplantation in April, and we are in the process of writing up this data for scientific publication," Maybaum says. The next step is to complete a randomized, controlled study in which some patients receive the treatment and others do not. "We need to show that this data holds true," Maybaum says. If the study is successful, simulated high altitude could help heart failure patients become more physically active. //