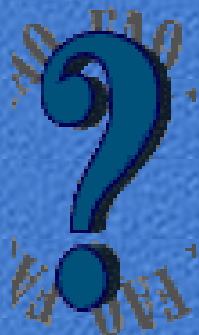


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Educating our patients for a better life
by Vicente Font, MD, FACP, FCCP, FACC

Got 15 Minutes? It'll Help Your Heart

Short, Intense Workouts Seem to Be Just as Good

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From: www.drkoop.com

Aug. 29, 2000



**Fran Berger
HealthSCOUT**

If you can't put aside a half-hour block to exercise each day, no problem. Shorter, vigorous workouts apparently will help keep your heart healthy, too -- as long as you work as hard.

"It appears as though the length of the exercise session is less important than that you do the exercise," says researcher Howard Sesso, of the Harvard School of Public Health.

"The [U.S.] surgeon general's report in 1996 calls for 30 minutes or more of at least moderate intensity physical activity on most days, [but] it appears two 15-minute sessions work just as well," he says. The findings appear in the latest issue of *Circulation: Journal of the American Heart Association*.

To compare the benefits of long bouts of physical activity with shorter ones, researchers analyzed data from participants in the Harvard Alumni Study, which tracks men who attended the university between 1916 and 1950. They looked at the weekly physical activities of more than 7,000 men, with an average age of 66, for the years 1988 and 1993.

Then, in a second study, Sesso and his team examined the intensity of the men's exercise and its relationship to coronary heart disease. For this, they reviewed data from 1977, 1988 and 1993 on more than 12,000 men, averaging 57 years. The men reported how much energy they expended in a typical week on activities like stair climbing, the number of city blocks they walked and the sports and recreational activities in which they participated.

During five years of follow-up, 482 of the participants developed coronary heart disease, the study says. Inactive men had worse coronary profiles, the researchers report, than those who exercised in some way.

But among men who expended similar amounts of energy in physical activity, exercising for a longer time did not further decrease their risk of heart disease, the study says. Nor did participating in sports or recreational activities rather than simply walking or climbing stairs, the study says, as long as their total energy outputs were similar.

"There has been accumulating evidence that suggested moderate and not structured activity -- such as walking, golfing and midrange intensity activity -- would have similar benefits," Sesso says. The researchers found that, when it comes to combating heart disease, "vigorous activity has slightly greater benefit than moderate activity", he says. But, he stresses, "any exercise is good exercise."

"Walking appears to be the most beneficial" of the moderate exercise activities, Sesso says. Other moderate activities -- golfing and social dancing, for instance -- do not appear to reduce the risk of heart disease, he says.

The findings are good news for those who don't exercise for lack of time.

"A lot of people don't have or perceive they have a 30-minute block," says Jim Pivarnik, a professor of kinesiology at Michigan State University. But if they realize they "don't have to do it all at once, and can get the same benefit by doing shorter sessions, they can mentally do a better job," he says.

What To Do

Just do it. "For those currently not exercising, begin to do so either in the form of moderate or vigorous intensity activities," Sesso says. "Taking a half-hour during different parts of the day on most days of the week appears to be sufficient to reduce the risk of [coronary heart disease]."

"You don't have to do it all at once, but begin to do something -- even if you take 15 minutes to walk outside and do a little here and there," he says. Adds Pivarnik: "You can't beat walking." For the average person "who's not orthopedically challenged or morbidly obese, three to four miles an hour is good," he says. "Get into the arm swing, which may look funny but will get your body in rhythm," he says. "Walk with a purpose, not a window-shopping walk." But if this is your first time off the couch, "just walk slower, pick it up and then slow it down," Pivarnik suggests.

SOURCES: Interviews with Howard D. Sesso, Sc.D., department of epidemiology, Harvard School of Public Health, Cambridge, Mass.; and James M. Pivarnik, Ph.D., professor of kinesiology and osteopathic surgical specialities, Michigan State University, East Lansing, Mich

Viewpoint: Do Exercise That's Right for You

*By Bruce Hensel, M.D.
Chief Medical Correspondent
for drkoop.com and [NBC4](http://nbc4.com)*

Never start an exercise program without first consulting your doctor. How you exercise -- and for how long -- may need to be adjusted because of your history

and condition.

An exercise program that's good for one person may be dangerous for another. Get a full checkup and work with your doctor to tailor a program that's right for you. That way you'll get the potential benefits of exercise without the potential risks.

Artificial Heart: The Jarvik 2000

First Permanent Implantation of Jarvik 2000 Heart Shows Initial Success

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WESTPORT, Sep 11 (Reuters Health) - A thumb-sized intraventricular assist device has been permanently implanted into a 61-year-old man with end-stage heart failure with initial success, researchers report in the September 9th issue of The Lancet.



Dr. Stephen Westaby from the John Radcliffe Hospital in Oxford, UK, and colleagues implanted the Jarvik 2000 into the patient's left ventricle in June as part of a prospective clinical trial that will eventually enroll 6 patients with dilated cardiomyopathy.

The device's power supply is worn on the patient's belt or waistcoat and attaches to a skull-mounted pedestal behind the patient's ear, according to the report, and the patient can adjust the speed of the device based on activity level.

The researchers found that the Jarvik 2000 Heart sustained the patient's circulation and improved exercise tolerance, myocardial function, and end-organ function after 6 weeks, when the patient was discharged from the hospital. The device resolved the patient's symptoms of heart failure, and there have been no significant hemolysis (self destruction of red blood cells) or device-related complications.

In addition, they note that the device was practical and user friendly, and that the skull-mounted pedestal was unobtrusive. "The Jarvik 2000 heart has important

advantages over other devices, and we are impressed with its performance in our early clinical experience," Dr. Westaby commented in a journal statement. In the report, he and colleagues note that the device's success will ultimately be determined by its mechanical reliability.

An accompanying journal editorial notes the success of the Jarvik 2000 Heart contrasts sharply with the failure of preventative cardiology services in the US and Europe, and suggests that too much attention is paid to acute disease management.

"A shift in emphasis is needed. Adult cardiology has badly failed its preventive challenge, largely succumbing to its important but dwindling successes in the acute sector," the commentary continues. "Instead, those concerned about heart disease should look to those less likely to be led astray by short-term goals" such as nurses, pediatricians, and primary-care physicians, who "deserve a more prominent place in coronary-prevention programmes."

Lancet 2000;356:867,900-903.

Smoking After Bypass Surgery Hikes Risk of Death, Repeat Procedures

September 1, 2000

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(BETHESDA, MD)—Patients who continue to smoke after coronary artery bypass surgery are far more likely to die over the next two decades than are those who successfully kick the habit. They are also more likely to need repeat heart surgery or angioplasty to reopen bypass grafts or other arteries that have become constricted over time.



These are the findings of a new study published in the September 2000 issue of the Journal of the American College of Cardiology. The study, which followed 985 patients for an average of 20 years after bypass surgery, is the first to show the long-term effects of continued smoking on survival after bypass surgery. It not only adds to the overwhelming evidence that smoking contributes to heart disease, and helps clarify a perplexing observation known as "smoker's paradox," which is the surprising conclusion of some earlier studies that smoking had little effect on survival after bypass surgery.

The new study's strength lies in the length of its follow-up, said Dr. Ron T. van Domburg, the epidemiologist who led the study at the Thoraxcenter in Rotterdam, the Netherlands. That's because the difference in survival was not apparent until patients had been tracked for at least four years. "Patients who were able to quit smoking in the year following surgery had a better chance of surviving than patients who continued smoking, although it takes some time to detect any difference," van Domburg said.

Over the length of the study, patients who continued to smoke after bypass surgery had a 75% higher risk of death from heart disease and a 68% higher risk of death from any cause when compared to patients who quit smoking. There was no difference in survival during the first 4 years, but by 5 years the death rate was 3 percentage points higher among persistent smokers (5% vs. 2%). By 10 years, there was a point difference of 10% (22% vs. 12%), and by 15 years, a 15 percentage point difference (45% vs. 30%).

At the same time, smoking increased the likelihood that bypass grafts or other coronary arteries would become clogged with a buildup of cholesterol plaque, prompting the need for a second bypass operation or angioplasty, a procedure in which a catheter, or narrow tube, is threaded through an artery in the leg into blood vessels supplying the heart. A balloon on the catheter's tip is inflated at the site of the plaque buildup to reopen the artery and restore adequate blood flow to the heart tissues. It wasn't until the 10-year mark that the link between smoking and the need for a repeat procedure became noticeable.

At the time of surgery the patients were typically in their mid 50s, and 88% were men. Fifty-three% of patients smoked. Of these, 43% successfully quit. Most patients (81%) had at least 2 coronary arteries that were so narrowed by plaque that it was necessary to re-route blood flow around the constriction by sewing in place a vein taken from the leg. Patients received an average of 2.6 grafts each.

Today, it would be common for at least one graft to come from a chest artery, rather than a leg vein, because the walls of arteries are stronger and may be more likely to resist plaque buildup. That shift in surgical technique doesn't diminish the importance of finding ways to help patients stop smoking, said Dr. van Domburg. "Vein grafts are still needed and extensively used. It is therefore very important that all treating clinicians, not only the cardiovascular surgeon, continue to urge smokers to stop smoking," he said.

"Taking advantage of structured programs that specialize in helping patients to stop smoking and make other key lifestyle changes is important," said Dr. Sidney Goldstein, Cardiology Division Head Emeritus at Henry Ford Hospital in Detroit.

"We all need to refocus our efforts," Dr. Goldstein said. "Many patients don't get enrolled in cardiac rehabilitation programs after bypass surgery, but cigarette smoking is such a hard habit to break that most patients do need medical help."

The ACC recently endorsed the U.S. Department of Health and Human Services

document, *Treating Tobacco Use and Dependence: A Clinical Practice Guideline*, which is designed "to provide clinicians, tobacco-dependence specialists, health care administrators, insurers, purchasers, and even tobacco users, with evidence-based recommendations regarding clinical and systems interventions that will increase the likelihood of successful quitting."

The American College of Cardiology, a 25,000-member nonprofit professional medical society and teaching institution, is dedicated to fostering optimal cardiovascular care and disease prevention through professional education, promotion of research, leadership in development of standards and guidelines, and the formulation of health care policy.

The American College of Cardiology (ACC) provides these news reports of clinical studies published in the Journal of the American College of Cardiology as a service to physicians, the media, the public, and other interested parties. However, statements or opinions expressed in these reports reflect the view of the author(s) and do not represent official policy of the ACC unless stated so.

Inflammation, Heart Disease and Stroke: The Role of C-Reactive Protein

Source: American Heart Association

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How does inflammation relate to heart disease and stroke risk?

The traditional risk factors such as tobacco smoke, high blood pressure and high levels of cholesterol are known to increase the risk of heart attacks. However, researchers have known for some time that many heart attacks occur in apparently low-risk people.

Recent evidence suggests that inflammation may also be an important indicator of risk for future heart attacks and strokes. "Inflammation" is the process in which the body responds to injury. Researchers have found that blood levels of a protein that reflects underlying levels of inflammation are elevated many years before a first heart attack or stroke. These data were published in the April 3, 1997, *New England Journal of Medicine*.

Using a simple and inexpensive test, the researchers measured baseline levels of C-reactive protein (CRP) among 1,086 apparently healthy men participating in the Physicians' Health Study. These men were then followed over an eight-year period for future development of their first myocardial infarction (heart attack), stroke or venous thrombosis (a blood clot in a vein).

What is the role of C-reactive protein in predicting risk?

Overall, the researchers found that men with the highest levels of C-reactive protein, compared to men with lower levels of the protein,

- have a threefold increase in their risk of future heart attack.
- have a twofold increase in their risk of future stroke.

These risks were independent of other traditional risk factors, including high cholesterol, smoking, high blood pressure and obesity.

Moreover, elevated levels of C-reactive protein were found to predict risk of first heart attacks as many as six to eight years into the future. That's enough time for affected persons to begin an aggressive program of prevention. Also, increased levels of C-reactive protein weren't linked to risks of blood clots in the legs and lungs. This finding is critical since, in contrast to heart attacks and strokes, these venous blood clots typically aren't linked to atherosclerosis. (Atherosclerosis is the process in which plaque builds up in artery walls.)

It appears that measuring C-reactive protein may provide a novel method to detect worrisome levels of atherosclerosis in otherwise healthy persons. **These new findings are important to researchers, as they raise the possibility that atherosclerosis may be at least in part an inflammatory disease. Moreover, the new data suggest that measurement of the body's response to injury may provide new means for preventing cardiovascular disease.**

For example, in the same study, researchers found that the benefit of preventive aspirin therapy was greatest among those with the highest levels of underlying inflammation. Since aspirin is an anti-inflammatory as well as a blood-thinning agent, these data suggest that other anti-inflammatory therapies may also help in preventing and treating heart disease.

What causes low-grade inflammation?

No one knows for certain what causes the low-grade inflammation that seems to put otherwise healthy people at risk. However, the new findings are consistent with the hypothesis that an infection - possibly one caused by a bacteria or a virus - might contribute to or even cause the atherosclerotic process.

Possible infectious bacteria include *Chlamydia pneumoniae* and *Helicobacter pylori*. Possible viral agents include *herpes simplex virus* and *cytomegalovirus*. Thus, it may be that antimicrobial or antiviral therapies will someday become part of the arsenal of therapies used to prevent heart attacks.

While this idea clearly needs to be tested in clinical trials, the notion that chronic infection can lead to unsuspected disease isn't foreign to most doctors. For

example, bacterial infection with *Helicobacter pylori* is now known to be the major cause of stomach ulcers. The treatment for this condition now routinely includes antibiotic therapy.

Should I have my C-reactive protein level measured?

At this time, patients can't ask their doctors to measure their blood for C-reactive protein. Most of the available tests aren't sensitive enough to pick up the small differences noted in the recent research. It's also uncertain whether measurement of C-reactive protein importantly adds to our ability to predict risk of heart disease beyond what's feasible with more common tests such as total and HDL cholesterol.

Finally, no data are available yet for women.

AHA Recommendation

Regardless of one's "inflammatory risk profile," cardiologists recommend these things to all patients (and the general public):

- **Stop smoking, and avoid other people's tobacco smoke.**
- **Keep your blood pressure in check.**
- **Eat a healthy diet low in saturated fat, cholesterol and sodium.**
- **Maintain an active lifestyle and a healthy weight.**
- **Manage diabetes, if you have it.**



These simple approaches are known to significantly reduce risks of heart disease. It's likely that such interventions will be even more important for those who finally prove to have an inflammatory factor in their overall risk profile.

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