

# Regular Exercise Cuts Diabetes Risk

An active lifestyle, including moderate-to-vigorous exercise, may prevent development of Type II diabetes, the sugar-processing disorder that generally strikes after age 40, according to a study published this week. The new finding may provide couch potatoes further incentive to turn off the TV and turn onto regular exercise, such as running, swimming or tennis.

Non-insulin-dependent diabetes — the Type II form — often involves insulin resistance, a disorder in which the body usually makes adequate amounts of insulin but its cells respond sluggishly to the hormone. The presence of insulin normally spurs cells to sop up sugar circulating in the bloodstream. This sugar removal is not as effective in Type II diabetics, so their blood sugar levels rise

— a problem that can lead to life-threatening complications.

Previous studies indicated that physical exercise can counteract insulin resistance and improve the body's ability to metabolize sugar. Indeed, such reports led physicians to advise people diagnosed with Type II diabetes to begin a regular fitness regimen. Scientists also suspected that fitness might stave off Type II diabetes in healthy people, yet data on this were less than compelling.

Now a report in the July 18 *NEW ENGLAND JOURNAL OF MEDICINE* adds considerable evidence to the theory that regular exercise prevents Type II diabetes. "It's a very exciting paper," comments diabetes researcher Edward S. Horton, of the University of Vermont College of Medicine in Burlington.

Epidemiologist Susan P. Helmrich of the University of California, Berkeley and her colleagues analyzed data collected from 5,990 initially non-diabetic men who had attended the University of Pennsylvania between 1928 and 1947. In 1962, researchers sent the men a questionnaire that asked about fitness habits, including sports such as jogging and tennis, and other aerobic activities such as walking up stairs. They then calculated the amount of energy expended per week on such leisure activities. When the researchers queried the volunteers again in 1976, they learned 202 had developed Type II diabetes.

Now, using a statistical method that accounts for known diabetes risk factors as well as physical activity, the California team finds evidence that compared with the most active men in the group, the most sedentary faced twice the risk of developing Type II diabetes during the 14-year study period. The couch potatoes had reported engaging in less than one hour of sustained exercise per week in 1962, while the most active men said they logged seven hours or more. Even moderate activity, however, such as a daily brisk walk, seems to shave the risk of Type II diabetes.

People with a family history of Type II diabetes or with other diabetes risk factors gained most from regular exercise: Compared with their sedentary peers, the most active men in this high-risk subgroup showed a 41 percent decrease in their risk of Type II diabetes, the team found.

"We are basically a nation of couch potatoes. Most people watch sports instead of playing sports," says Helmrich, a marathon runner. These "very dramatic" new data indicate most Americans would benefit from a lot more exercise, she observes.

This study also confirms a prevailing theory that Type II diabetes is a "lifestyle disease" — one that's been linked to the sedentary lifestyle and high-calorie diets typical of most industrialized societies, adds coauthor Ralph S. Paffenbarger Jr. of Stanford University, another marathon runner.

Many factors, including obesity, family history and age can increase the threat of Type II diabetes. However, the new study suggests inactivity poses an independent risk factor for this disease. Comments Rena Wing, a diabetes researcher at the University of Pittsburgh, this finding may represent good news for at-risk Americans: "You can't modify your age. You can't modify your parental history. But, you can increase your activity."

— K.A. Fackelmann

## Blacks' high glaucoma risk is verified

A study of 5,300 Baltimore residents has confirmed that glaucoma — already considered the leading cause of blindness among U.S. blacks — is five times more likely to afflict blacks than whites. The survey also revealed that the disorder strikes blacks earlier and independent of socioeconomic status or access to health care.

Though other studies have suggested that blacks might be more susceptible to glaucoma, this survey of a racially mixed population enabled investigators for the first time to compare blacks and whites in specific age groups and to confirm race-related differences, notes Maurice F. Rabb, medical director for the National Society to Prevent Blindness, in Schaumburg, Ill.

James M. Tielsch, Alfred Sommer and their colleagues at Johns Hopkins University in Baltimore set up five local screening clinics and invited 6,850 poor and middle-class black and white residents over age 40 to have their eyes checked. Of 2,913 whites and 2,395 blacks who underwent extensive eye tests and personal interviews between 1985 and 1988, 1,770 showed vision or eye problems. During a follow-up screening of these patients at Hopkins, ophthalmologists diagnosed the optic-nerve damage that characterizes primary open-angle glaucoma in 100 blacks and 32 whites.

By age 70, one in 10 blacks — compared with one in 50 whites — develop this disease, the researchers report in the July 17 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*. In glaucoma, optic-nerve damage — from in-

creased pressure in the eye — leads to failing vision, which can go unnoticed during its early stages.

"We now know that what was circumstantial evidence in the past is really well documented," says Carl Kupfer, director of the National Eye Institute in Bethesda, Md., which funded the study. "People in this [geographic] area are very comparable; we can eliminate [socioeconomic] factors."

About equal numbers of blacks and whites with glaucoma said they had their eyes examined during the past year and about half of those diagnosed with the disease said they did not know they had developed it until they participated in the survey. Sommer therefore concludes that lack of access to health care cannot account for the racial differences.

Overall, the Baltimore Eye Survey found that in the 40- to 49-year-old age group, 1.23 percent of blacks get glaucoma, compared with 0.92 percent of whites. By age 80, that percentage rises to 11.26 percent of blacks, but just 2.16 percent of whites. Sommer estimates that primary open-angle glaucoma affects 1.6 million U.S. residents over 40. However, doctors can treat the condition to slow or stop vision loss.

The new survey results further emphasize the need for people over age 40, especially blacks, to undergo periodic comprehensive eye exams, vision experts say. Adds Kupfer, "It is likely that increasing awareness of glaucoma in the black community could have a major impact on preventing blindness from this disease."

— E. Pennisi