

Aerobically unfit young adults on road to diabetes in middle age

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Most healthy 25 year olds don't stay up at night worrying whether they are going to develop diabetes in middle age. The disease is not on their radar, and middle age is a lifetime away.

As it turns out, many should be concerned. Researchers at Northwestern University Feinberg School of Medicine have found that young adults (18 to 30 years old) with low aerobic fitness levels --as measured by a treadmill test -- are two to three times more likely to develop diabetes in 20 years than those who are fit.

The study also shows that young women and young African Americans are less aerobically fit than men and white adults in the same age group, placing a larger number of these population subgroups at risk for diabetes.

"These young adults are setting the stage for chronic disease in middle age by not being physically active and fit," said Mercedes Carnethon, lead author and assistant professor of preventive medicine at Northwestern's Feinberg School. "People who have low fitness in their late teens and 20's tend to stay the same later in life or even get worse. Not many climb out of that category."

The study will be published in the July issue of *Diabetes Care*.

In the study, the most important predictor of who will develop diabetes is the participants' Body Mass Index (BMI), a measure of the body's fat

content.

"The overwhelming importance of a high BMI to the development of diabetes was somewhat unexpected and leads us to think that activity levels need to be adequate not only to raise aerobic fitness, but also to maintain a healthy body weight," Carnethon said.

"If two people have a similar level of fitness, the person with the higher BMI is more likely to develop diabetes."

Carnethon stressed that unfit young adults can avoid a future with diabetes by exercising and losing weight. "Improving your fitness through physical activity is one way you can modify your body fat," she said. "Research shows that combining regular physical activity with a carefully balanced diet can help most people maintain a healthy body weight and lower the likelihood of developing diabetes."

This is the longest observational study to focus on the relationship between aerobic fitness and the development of diabetes. Most previous research has focused on the self-reported health behavior of physical activity, but people don't always accurately report their activity level. Fitness, easily measured by a standard treadmill test, provides a more accurate measure than a self-report.

In addition, this study is the first to look at the development of diabetes over a 20- year period. Because diabetes develops over a long period of time, the number of people affected in the population rises with age. Previous studies that followed adults for a shorter period of time may have stopped short before diabetes was diagnosed.

Data from the study came from the Coronary Artery Risk Development in [Young Adults](#) (CARDIA) study, which began in January 1984 and ended in December 2001. The fitness study included 3,989 participants at baseline and 2,231 at the 20-year testing. The black and white men

and women were 18 to 30 at the time of enrollment. Fasting blood sugar levels (the blood marker used to define [diabetes](#)) were measured at the beginning of the study and multiple times over 20 years.

Source: Northwestern University ([news](#) : [web](#))

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