MedicalXpress

Killer stairs? Taking the elevator could be worse for your body

March 18 2008

For years, scientists have been proclaiming the benefits of exercise. Studies showing that regular exercise benefits human health have exploded in number, examining many health problems ranging from cancer and diabetes to arthritis and pre-mature death.

Now, a University of Missouri researcher has found direct evidence to support the claim of the Centers for Disease Control that a reduction in daily physical activity is an actual cause of many of the risk factors for chronic diseases, including diabetes and cardiovascular disease. The research team also found that it only takes about two weeks of reduced activity for individuals to start noticing the effects. The study is being published in the *Journal of the American Medical Association* this week.

“A low level of daily physical activity not only doesn’t help your current health status, it could be the reason you got sick in the first place,” said Frank Booth, professor of biomedical sciences in the MU College of Veterinary Medicine. “Our study looked at what happened when a group of individuals reduced their daily physical activity. Our findings indicated that if there is a lack of normal physical activity, a person greatly increases the chances of developing a chronic disease. Previously, we thought that not exercising just wasn’t healthy, but we didn’t think that a lack of activity could cause disease. That assumption was wrong.”

Booth and researchers at the University of Copenhagen conducted two different studies in Copenhagen. In the first study, participants were

asked to reduce the amount of steps they took per day from 6,000 to 1,400 for three weeks. Instead of walking or taking the stairs, participants were instructed to use motorized transportation, such as a car or elevator, in every situation possible.

The second study asked participants who were more active, averaging 10,000 steps per day, to reduce their activity to 1,400 steps per day for two weeks. The number of steps the average American adult takes per day is 7,473, although Americans who are inactive typically take about 2,100 steps each day.

At the end of each study, participants were administered a glucose tolerance test or a fat tolerance test, or both. These tests measure how fast the body is able to clear glucose or fat from the blood stream. The researchers found that after two weeks of no exercise and very little activity, participants had much higher levels of glucose and fat and took a much longer time to clear the substances from their blood streams than before. The longer it takes the body to clear the blood stream of the substances, the higher the likelihood that a person will develop diabetes or other chronic diseases.

“We used to think that it is healthy to be physically active, but this study shows that it is dangerous to be inactive for just a couple of weeks,” said Bente Klarlund Pedersen, co-author and lead investigator of the study and professor of internal medicine and director of Centre of Inflammation and Metabolism at the University of Copenhagen. “After 14 days of reduced stepping, subjects experienced accumulation of the dangerous abdominal fat, while also developing elevated blood-lipids, a sign of -pre-diabetes and cardiovascular disease. If you choose the passive mode of transport and abstain from exercise, than your risk of chronic disease is likely to increase markedly.”

“When the doctor says to go and exercise, they are not just telling

patients to do that to improve their health; increasing daily stepping could actually reverse a cause of chronic disease," Booth said. "When extra fats and sugars (glucose) don't clear the bloodstream, they go where we don't want them and cause problems for our bodies' typical metabolic functions."

The researchers also found that the total skeletal and muscle mass in the body decreased when the lack of activity decreased. Booth says that longer studies are needed to help answer more questions about the detrimental effects of long-term physical inactivity.

Source: University of Missouri-Columbia