

Improving fitness, preventing fat gain key in protecting heart

February 9 2012, By Margaret M. Lamb

(Medical Xpress) -- Good news for active adults fighting the battle of the bulge. Exercising and getting fit may protect your heart, even if you have a few extra pounds, according to a study published in the Feb. 14 issue of the *Journal of the American College of Cardiology (JACC)*.

The study, which was led by Duck-chul Lee of the University of South Carolina's Arnold School of Public Health, is one of the first to examine how a change in fitness or fatness (or both) affects development of hypertension, high cholesterol and metabolic syndrome, defined by a large waistline, high triglycerides, low high-density lipoprotein cholesterol, high blood sugar while fasting and high blood pressure.

“Although improving fitness and losing fatness is ideally the best combination, our study also shows that as long as individuals maintain their fitness and fatness levels, which is less challenging, they are not likely to be at higher risk of developing cardiovascular disease risk factors,” Lee said.

In an effort to determine how changes in fitness and fatness affect [heart](#) health, a U.S. research team studied 3,148 healthy [adults](#) over a six-year period.

The Aerobics Center Longitudinal Study (ACLS) enrolled healthy men and women between 1979 and 2006, analyzing how their fitness and fatness levels changed over time and how that related to the development of hypertension, metabolic syndrome and hypercholesterolemia.

Cardiorespiratory fitness was measured through a treadmill test, and body fatness was calculated through a skinfold test and body mass index. Fatness and fitness were considered independently and then together to get a complete understanding.

At the end of the study, the researchers found:

- 752 participants had developed hypertension, 426 had developed metabolic syndrome, and 597 participants had developed high cholesterol.
- Participants who maintained or improved their fitness level had a significantly lower risk of developing any of the three risk factors, compared with those whose fitness level had dropped. (24 percent and 23 percent for hypertension, 38 and 41 percent for metabolic syndrome and 25 percent and 26 percent for high cholesterol)
- Individuals who had gained fat had a significantly higher risk for developing any of the three risk factors (24 percent for hypertension, 52 percent for [metabolic syndrome](#) and 41 percent for higher cholesterol.)
- The researchers found that maintaining or improving fitness lessened —although not completely eliminated —the increased risk caused by gaining fat. Similarly, reducing body fat appeared to counteract part of the increased risk associated with losing fitness. In addition, those who maintained their fitness and fatness did not have higher risks of developing the three risk factors compared to those who gained fitness and lost fatness.

“This study has clinical and public health significance because the finding that improved fitness can reduce some of these risk factors associated with increased fatness may help the two-thirds of the U.S. adult population who are overweight or obese,” Lee said.

“These days, extensive attention has been given to obesity and weight loss. However, maintaining or improving fitness, primarily by engaging in regular physical activity, is also at least as important as weight loss for reducing cardiovascular disease in healthy adults.”

The study is the first of its kind to analyze changes in fitness and fatness independently after adjusting for each other, and also to examine the joint effects of changes in both [fitness](#) and fatness on the development of CVD [risk factors](#).

Provided by University of South Carolina

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