A Simpler Way to Screen for Heart Disease Risk

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A University of Dayton researcher has identified a quick, simple and effective method to screen teenagers for cardiovascular disease risk.

The test developed by Jayne Brahler, a professor and research coordinator in the University of Dayton's doctor of physical therapy program, can be administered on a large scale, in a school setting and does not require trained medical professionals. An average of 30 students can complete the screening in about an hour.

"The need for early intervention to prevent cardiovascular disease is clear," Brahler said. "However, the first step is to identify the children who have the highest risk for developing cardiovascular disease."

Instead of parents or school districts committing to costly, invasive and time-consuming blood tests, students can be screened for cardiovascular disease risk by participating in a series of physical fitness tests, checking resting blood pressure and heart rate and measuring body fat and body mass index (BMI), according to Brahler.

Brahler developed the screening method after more than 10 years of research on adolescent cardiovascular health, and with the help of University of Dayton students and colleagues, she has conducted the battery of tests on about 1,000 adolescents.

She recently supported her findings with a study of a small sample of teens who received complete blood chemistry analyses. The results were published in the June 2009 issue of *Journal of Exercise Physiology* online. Download the report at the related link.

The study confirmed the findings of current scholarship that measures of body fatness are better predictors of cardiovascular disease risk than are fitness measures, with waist circumference as the best predictor.

However, Brahler also discovered that three exercises with no apparent connection to heart health — push-ups, shuttle run and the 40-yard dash — showed significant correlations to heart disease risk. In her studies, the one mile walk/run showed no significant relationship with disease risk.

"What is most surprising is that although some of these exercises are not clinical indicators of cardiovascular fitness, they were predictive of cardiovascular disease risk," she said. "With the mile, we expected it to be highly predictive of disease risk, but we noticed during testing that many students were not motivated to achieve peak performance, so it wasn't a valid indicator of cardiovascular fitness."

Brahler is scheduled to present her recent findings at the annual meeting of the American Physical Therapy Association's Combined Sections Meetings Feb. 17-20 in San Deigo. Her presentation, which she co-authored with University of Dayton doctor of physical therapy faculty researcher Betsy Donahoe-Fillmore, is titled "Developing a clinical prediction rule for screening adolescent females for cardiovascular disease risk."

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