



FOR IMMEDIATE RELEASE

University of South Carolina study finds Body Mass Index may no longer be relevant indicator of health

Columbia, S.C.—December 8, 2014— Researchers from the Arnold School of Public Health at the University of South Carolina have determined that Body Mass Index (BMI) may not be as useful as was once previously thought, especially for women. BMI is a commonly-used calculation of a person’s weight to height ratio that is supposed to represent whether someone is overweight, but this measure may be misleading since it doesn’t account for muscle or bone mass.

Previous studies have established that low levels of cardiorespiratory fitness (CRF), an indicator of regular physical activity, and body compositions with higher fat mass serve as risk factors for cardiovascular disease and predictors of deaths related to cardiovascular disease. These studies have examined long-term trends of fatness (i.e., body fat) and CRF in children, adolescents and men, but few have looked at these factors in female populations.

The Arnold School’s study, published in Mayo Clinic Proceedings, used data (provided by the Aerobics Center Longitudinal Study) from a 35-year period (1970-2004) and addresses these two gaps by examining a large sample of women and by looking at body composition, rather than solely BMI, in conjunction with CRF. The study assessed more than 34,000 women’s CRF levels with a treadmill endurance test that measured how long they could exercise with increasing difficulty (e.g., raised incline). The research participants also underwent a clinical examination, which included bloodwork and demographic questions.

The data showed that BMI increased over the 35-year period even though CRF levels rose as well. By looking at the body composition of the participants along with their BMIs, the researchers were able to observe that their body fat did not increase. This finding suggests that the weight gains that led to higher BMIs over time were not necessarily comprised of body fat. Participants may have been putting on muscle mass due to their increased physical activity, as indicated by their higher CRF.

Unfortunately, the study uncovered other currently unexplained findings. “Even though women appear to be exercising more, the increasing prevalence of chronic diseases over this 35-year period is disturbing,” said Dr. Xuemei Sui, an assistant professor of exercise science at the Arnold School and co-author on the study. “Future studies should examine the relationship between chronic diseases, such as diabetes, hypertension, hypercholesterolemia, cardiovascular diseases and cancer in connection with body composition and CRF.”

Regardless of the pervasiveness of chronic diseases, high CRF levels suggest that women are trending toward engaging in more physical activity, which has shown to have a number of health benefits. Although CRF levels increased by a significant 20 percent overall during the study’s time period, a slight dip in this trend occurred towards the end. This decline, however small, demonstrates the need for continuing efforts to promote physical activity and fitness. “Clinicians should encourage women to increase their CRF levels through promoting physical activity,” said Sui. The findings also suggest that women should consider focusing more on body fat percentages and CRF levels than simple BMI calculations when setting their fitness goals.

Links

Video: <http://youtu.be/bwZPikQmyTE>

Complete Article: [http://www.mayoclinicproceedings.org/article/S0025-6196\(14\)00798-8/fulltext](http://www.mayoclinicproceedings.org/article/S0025-6196(14)00798-8/fulltext)

Arnold School of Public Health: www.sph.sc.edu

Arnold School on Facebook: <http://on.fb.me/1toyV4L>

Arnold School on Twitter: <https://twitter.com/USCArnoldSchool>

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About

Established in 1975 as the 19th School of Public Health in the nation, the Arnold School of Public Health at the University of South Carolina continues to experience record enrollments with major growth in faculty and research funding. The Arnold School was the nation's first School of Public Health to have a Department of Exercise Science – a visionary move that established the school as the nation's leader in research, community outreach and policy development around physical activity, fitness and health. In 2008, the Arnold School was among the first in the United States to offer a baccalaureate program in public health. The B.A. and B.S. programs, along with the B.S. degree in exercise science, attracted more than 1600 students in 2014. Our graduate programs serve almost 700. The 150 world-class faculty at the Arnold School are recognized nationally and internationally for their research in areas such as HIV/AIDS, tobacco control, cancer prevention, health disparities, obesity prevention, diabetes, heart disease, stroke, environmental protection, nanotechnology and many other areas important to the 21st century world. The Arnold School is increasing its global population health impact through the initiatives of approximately 30 faculty working on projects in Latin America, Africa, South Asia, the Western Pacific and Europe. Many of our faculty and alumni serve on agency and NGO panels and boards that work to shape public health policy throughout the world.

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