

Study: More physical activity leads to less obesity -- often, but not always

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It may seem intuitive that greater amounts of exercise lead to less obesity, but an Indiana University study has found that this conventional wisdom applies primarily to white women. The findings draw attention not only to racial, ethnic and gender differences regarding exercise but also to the role work can play.

In his study involving more than 12,000 people in a nationally representative sample of U.S. 20- to 64-year-olds, obesity expert Dong-Chul Seo found that obesity rates in general declined as the amount of weekly leisure-time physical activity (LTPA) increased. White women, however, saw the steepest decreases, particularly when meeting minimum national guidelines for weekly physical activity. This was not always the case for men and for women who were African American or Hispanic.

"For the majority of health professionals, even health researchers, they say the more leisure-time physical activity you engage in, the less likely you'll get obese," said Seo, associate professor in the School of Health, Physical Education and Recreation's Department of Applied Health Science. "This is true but it's probably only applicable to white women and some of the [white men](#)."

Surprised by the results, Seo looked deeper and found that job-related physical activity might have influenced obesity rates. Studies have found, for example, that men and [Hispanic women](#) are more likely to have manually demanding jobs than white women, which could affect

the amount of LTPA they accumulate. For Hispanic women, their obesity rates dropped as their amount of occupational physical activity (OPA) increased. However, a different pattern was seen for men.

"This illustrates to me the importance of physical activity in the workplace," Seo said. "Workplace wellness programs should really be emphasized, especially for people who do sedentary work. To enhance their health, maybe employers could offer workout spaces and incentives to do physical activity during the work hours or right after. They can make it easier."

The study, published in the May issue of the *Journal of Epidemiology and Community Health*, is the first study that shows population-based evidence of a graded dose response relationship between the total volume of LTPA and obesity.

Here are more findings and information about the study:

- A body mass index of 30 or higher was considered obese. The age-adjusted rates of obesity were calculated according to six categories based on minimum national guidelines for physical activity: The obesity rate for women was 41.4 percent for those with no LTPA in the past month, 39.1 percent for those who engaged in LTPA but fell short of minimum national guidelines, 31 percent for those who met the minimum guidelines, 28 percent for those who exceeded the minimum guidelines but were within the first quartile of overachievers, 23.4 percent for the overachievers between the first and third quartile, and 19.5 percent for the overachievers at or above the third quartile.
- When this obesity rate is considered for women who are white, Hispanic and African American, the percentages are 40.6

percent, 41.5 percent and 51 percent, respectively, for those with no LTPA; 37.5 percent, 45.4 percent and 55.4 percent for those who engaged in LTPA but fell short of minimum national guidelines; 27.7 percent, 34.5 percent and 50 percent for those who met minimum guidelines; 26 percent, 33.8 percent and 44.5 percent for those who exceeded the minimum guidelines but were within the first quartile of overachievers; 16.5 percent, 38.5 percent and 46 percent for the overachievers between the first and third quartile; and 14, 41.6 and 38.1 percent for the overachievers at or above the third quartile.

- The age-adjusted rates of obesity for men were 31.4 percent for those with no LTPA in the past month, 29.5 percent for those who engaged in LTPA but fell short of minimum national guidelines, 29.8 percent for those who met the minimum guidelines, 27.9 percent for those who exceeded the minimum guidelines but were within the first quartile of overachievers, 26.7 percent for the overachievers between the first and third quartile, and 26.9 percent for the overachievers at or above the third quartile.
- The study sample of 12,227 people was drawn from National Health and Nutrition Examination Survey (NHANES) data from 1999 to 2006. NHANES data is unique in that study participants are physically measured for height and weight rather than relying on self reports. The data also includes metabolic equivalents (MET) for study participants' leisure-time physical activity.

National guidelines call for a minimum of 450-750 MET minutes per week. MET is a way of quantifying the total amount of physical activity in a way that is comparable across various forms of [physical activity](#). Walking briskly for 30 minutes, for example, is around 100 MET. Running 6 mph for 30 minutes is around 300 MET.

Seo said the biggest decline in [obesity](#) rates was seen between women who met the guidelines and those who participated in LTPA but fell short of the guidelines. He said this supports the effectiveness of the minimum guidelines at least in terms of weight control -- and it was only applicable to women.

Provided by Indiana University

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