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Daily Physical Activity Prevents Weight Gain Only in Women With Normal BMI CME/CE

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March 26, 2010 — Daily physical activity is associated with less weight gain only among women whose body mass index (BMI) is lower than 25 kg/m², according to the results of a prospective cohort study reported in the March 24/31 issue of the *Journal of the American Medical Association*. Approximately 60 minutes per day of moderate-intensity physical activity was associated with successfully maintaining normal weight.

"The amount of physical activity needed to prevent long-term weight gain is unclear," write I-Min Lee, MBBS, ScD, from Brigham and Women's Hospital, Harvard Medical School in Boston, Massachusetts, and colleagues. "In 2008, federal guidelines recommended at least 150 minutes per week (7.5 metabolic equivalent [MET] hours per week) of moderate-intensity activity for 'substantial health benefits.'"

The goal of this study was to evaluate the association of different amounts of physical activity with long-term weight changes among women following a usual diet. The study cohort consisted of 34,079 healthy US women, mean age, 54.2 years, who were observed prospectively from 1992 to 2007. Participants reported their physical activity and body weight at baseline and at months 36, 72, 96, 120, 144, and 156. At each time point, physical activity was classified as less than 7.5, 7.5 to less than 21, or 21 or more MET hours per week. Physical activity and weight change at intervals averaging 3 years were prospectively examined with repeated measures regression.

Throughout the study, mean weight gain was 2.6 kg. In women expending from 7.5 to less than 21 MET hours per week, mean weight gain during a mean interval of 3 years was 0.11 kg ± 0.04 kg ($P = .003$) vs women expending 21 or more MET hours per week. Similarly, multivariate analysis also showed that those expending less than 7.5 MET hours per week gained 0.12 kg ± 0.04 kg ($P = .002$) vs women expending 21 or more MET hours per week.

There was a significant interaction between the effect of physical activity and BMI. Among women with a BMI of less than 25 kg/m², there was an inverse dose-response relationship between activity levels and weight gain (P for trend < .001). However, no such relationship occurred among women with a BMI from 25 to 29.9 kg/m² (P for trend = .56) or in those with a BMI of 30.0 kg/m² or more (P for trend = .50).

In 4540 women (13.3%) with a BMI of less than 25 kg/m² at the beginning of the study who successfully maintained their weight by gaining less than 2.3 kg during the study, mean activity level during the study was 21.5 MET hours per week (approximately 60 minutes per day of moderate-intensity activity).

"Among women consuming a usual diet, physical activity was associated with less weight gain only among women whose BMI was lower than 25," the study authors write. "Women successful in maintaining normal weight and gaining fewer than 2.3 kg over 13 years averaged approximately 60 minutes a day of moderate-intensity activity throughout the study."

Limitations of this study include reliance on self-report for determination of recreational physical activity and weight, and lack of detailed information on other measures of body composition and on medications potentially affecting weight. In addition, participants are not representative of the US population, there were no repeated measures of diet with time, and activity levels needed for weight management among women restricting caloric intake were not examined.

"These data suggest that the 2008 federal recommendation for 150 minutes per week, while clearly sufficient to lower the risks of chronic diseases, is insufficient for weight gain prevention absent caloric restriction," the study authors conclude. "Physical activity was inversely related to weight gain only among normal-weight women; among heavier women, there was no relation, emphasizing the importance of controlling caloric intake for weight maintenance in this group."

Dr. Lee has served as a consultant to Virgin HealthMiles and sits on its scientific advisory board. The National Institutes of Health supported this study.

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The CDC Web site provides information about how to [measure physical activity intensity](#).