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## **New study examines the link between time spent exercising and obesity**

- **A new analysis finds that physical activity reduces body mass by less than expected amounts, implying compensatory responses to exercise such as increased caloric intake.**
- **This is the first study to address measurement error that arises when time use during a single day as opposed to average daily time use is used in studies.**

There is still debate whether exercise is effective in creating and maintaining long term weight loss, despite a large body of research investigating interventions that may reduce or reverse societal increases in obesity. A new study by University of Kentucky Associate Professor and ISFE Director Charles Courtemanche, University of Louisville Associate Professor Joshua Pinkston, and Jay Steward of the Bureau of Labor Statistics investigates the link between exercise, body mass index, and obesity.

Their analysis is conducted utilizing the Eating & Health Supplement to the 2006-2008 American Time Use Survey. The authors note that, “the impact of time use on the likelihood of becoming obese is an important, but under-researched area. One of the reasons is that the ideal data do not exist.” Because of this, the authors use an instrumental variable approach to address known issues in time use data. Time use data is subject to measurement biases related to issues in self-reporting. It is also subject to endogeneity issues related to unobserved factors that may affect both BMI and exercise such as discipline or eating habits or the fact that while exercise may reduce BMI, obesity may make exercise more difficult.

Drs Courtemanche, Pinkston, and Steward find that for women exercise reduces body mass and the propensity of obesity but for men there is not evidence that exercise appreciably

lowers body mass. However, time spent walking or biking for non-leisure purposes such as commuting or walking a dog reduces body mass for both men and women. In both cases, reductions in body mass are less than would be expected given physical expenditure, implying increased caloric intake, perhaps as a compensatory behavior.