

## A case for exercising

August 24 2010

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There is now another good reason to exercise. Besides burning calories, exercise restores the sensitivity of neurons involved in the control of satiety (feeling full), which in turn contributes to reduced food intake and consequently weight loss. This is the conclusion of a study led by Brazilian researchers at the University of Campinas, and the findings will be published next week in the online, open access journal *PLoS Biology*. This disclosure may bring hope to over 40% of the population that suffers from weight problems and obesity around the world.

The increase in [obesity](#) has become one of the most important clinical-epidemiological phenomena. Factors such as changing eating habits and a sedentary lifestyle both have a role in the pathogenesis of this disease. It is postulated that excessive consumption of fat creates failures in the signal transmitted by [neurons](#) controlling satiety in a region of the [brain](#) called the hypothalamus. These failures can lead to uncontrollable food intake and, consequently, obesity.

The group led by José Barreto C. Carvalheira demonstrated that exercising obese rodents showed signals of restored satiety in hypothalamic neurons and decreased food intake. "In obese animals, exercise increased IL-6 and IL-10 protein levels in the hypothalamus, and these molecules were crucial for increasing the sensitivity of the most important hormones, insulin and leptin, which control appetite," Carvalheira explained. Physical activity contributes to the prevention and treatment of obesity, not only by increasing energy expenditure but also by modulating the signals of satiety and reducing [food intake](#).

Physical activity has always been considered a cornerstone in the treatment of obesity, however, only now have the effects of exercise on the control of body weight been understood. Thus, these findings, besides reinforcing the necessity for regular exercise also change the current paradigm established between physical activity and [weight loss](#).

**More information:** Ropelle ER, Flores MB, Cintra DE, Rocha GZ, Pauli JR, et al. (2010) IL-6 and IL-10 Anti-Inflammatory Activity Links Exercise to Hypothalamic Insulin and Leptin Sensitivity through IKKb and ER Stress Inhibition. PLoS Biol 8(8): e1000465.  
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