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### **Obese but not lean adolescents spontaneously decrease energy intake after intensive exercise.**

David T, Lore M, Julien A, Béatrice M, Pascale D.

#### **Source**

Healthy Active Living and Obesity Research Group, Children's Hospital of Eastern Ontario Research Institute, Ottawa, Canada; Clermont University, Blaise Pascal University, EA 3533, Laboratory of the Metabolic Adaptations to Exercise under Physiological and Pathological Conditions (AME2P), BP 80026, F-63171 Aubière cedex, France. Electronic address: dthivel@cheo.on.ca.

#### **Abstract**

##### **BACKGROUND:**

Acute intensive exercise has been shown to induce a decreased subsequent daily energy intake in obese adolescents without altering the subjective appetite feelings. It is however unclear whether or not those nutritional adaptations to acute exercise are affected by the adolescents' weight status. The aim of this study was to compare the energy intake and macronutrient preferences, appetite feeling and energy expenditure response to acute exercise between lean and obese adolescents.

##### **METHODS:**

Ten obese and nine normal weight 12-15year old adolescents randomly completed a session with a 30minute cycling exercise at 75% VO<sub>2</sub>max and a sedentary session. During both sessions energy expenditure was assessed using Armband, ad libitum energy intake measured by weighing at both lunch and dinner time and appetite feelings assessed using Visual Analogue Scales.

##### **RESULTS:**

Daily, morning and afternoon energy expenditure were significantly higher in obese than in normal weight adolescents ( $p < 0.001$ ). Total energy expenditure was significantly higher during EX ( $1086 \pm 157$  kcal) compared to SED ( $853 \pm 154$  kcal) in lean ( $p < 0.05$ ) but not significantly different in obese (respectively  $1865 \pm 222$  and  $1803 \pm 232$  kcal). Afternoon energy expenditure was significantly lower during EX compare to SED in obese ( $p < 0.05$ ) but not in normal weight adolescents. Lunch, dinner and total daily energy intake were significantly reduced after the exercise session in obese ( $p > 0.05$ ) but not in lean adolescents. No group or condition effects were observed on subjective appetite feelings.

##### **DISCUSSION:**

Post exercise spontaneous energy intake and energy expenditure are reduced in obese but not in normal weight adolescents, without appetite feelings changes. Acute exercise may have a greater impact on energy balance through the induced decreased energy intake in the absence of significant change in energy expenditure in obese youth.

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**KEYWORDS:**

Appetite, BMI, Body Mass Index, CHO, Carbohydrates, EB, EE, EI, EX, Energy Balance, Energy Expenditure, Energy Intake, Exercise, Exercise condition, FFM, FM, Fat Mass, Fat-Free Mass, Maximal oxygen consumption, Pediatric Obesity, SED, Sedentary condition, VAS, VO<sub>2</sub>max, Visual Analogue scale, WC, Waist Circumference

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