

adiponectin, leptin and insulin concentration, HOMA score: Homeostasis Model Assessment) before and after rehabilitation performed by 111 patients with abdominal obesity admitted for a 4-weeks program of rehabilitation because of chronic pain.

**Results.**– Plasma leptin, adiponectin and insulin concentrations ( $P < 0.0001$ ) and HOMA score ( $P = 0.0002$ ) had decreased significantly at the end of the 4 weeks. BMI and waist circumference decreased significantly ( $P = 0.0001$ ). Patients with insulin resistance had a lower improvement of their aerobic condition at the end of the 4 weeks ( $P < 0.002$ ).

**Discussion.**– Four-weeks rehabilitation program decreases plasma leptin concentration, which is a cardiovascular risk marker, and improves insulin sensitivity, regardless of weight variations. Patients with insulin resistance have a lower improvement in aerobic capacity.

<http://dx.doi.org/10.1016/j.rehab.2013.07.854>

P022-e

### Effects of exercise targeted at maximal lipid oxidation (LIPOXmax) on eating behavior

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**Keywords:** Training; Eating behavior; Adapted physical activity



**Introduction.**– Physical exercise has a satietogenic and orexigenic effect, that latter being favored by the glycogenic depletion and higher intensity of exercise. The balance between both effects, satietogenic and orexigenic, seems to determine results of physical exercise training on adiposity. Our hypothesis is that the efficacy of training at maximal lipid oxidation (LIPOXmax) could be explained by a modulation of eating behavior.

**Methods.**– We studied 24-hours effects of exercise targeted by an indirect calorimetry among 10 normal-weight people. In a randomized order, they realized 45 minutes of exercise at LIPOXmax, an isoenergetic session at LIPOXzero (level where lipid oxidation is at its lower point) and a day without exercise. Following each session, they received a standardized meal with an energetic value of 563 kcals after 20 to 30 minutes post-exercise. Participants also filled in a VAS evaluating their appetite.

**Results.**– After both sessions ( $42 \pm 0.06\%$  et  $76 \pm 0.14\%$  of VO<sub>2</sub>max, respectively), exercise had an similar orexigenic effect ( $P < 0.01$ ). However, after training at LIPOXmax, the breakfast of the next day was less caloric ( $P = 0.02$ ) with less carbohydrate ( $P = 0.02$ ) whereas it remained unchanged after training at LIPOXzero. After the session at LIPOXzero, a decrease in glycemia ( $-0.06 \pm 0.02$  mmol/l,  $P < 0.02$ ) was observed but not after LIPOXmax. When exercise was hypoglycemic, it was associated with an increase in hunger ( $P < 0.001$ ) and when it did not have this hypoglycemic effect, it decreased the caloric intake during the next 24 hours ( $P < 0.01$ ).

**Conclusion.**– Exercise at LIPOXzero, by its hypoglycemic effect, is orexigenic whereas exercise at LIPOXmax, having no effect on glycemia, lead to a decrease in calories intake. Thus, we may advise to use training at low exercise intensity notably among overweight and obese people to help them decrease their calories. However, these results must be confirmed among people with overweight and with a larger sample.

<http://dx.doi.org/10.1016/j.rehab.2013.07.855>