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Effect of exercise intervention on appetite regulating hormones in obese children

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Objective Obesity in children usually develops from early age and is due to chronic energy imbalance, and long-term exercise has been shown to have the capacity to alter the sensitivity of the appetite regulatory system. Therefore, the current study was designed to examine the circulating levels of appetite regulating hormones after exercise intervention in obese children.

Methods 24 obese children were subjected to exercise training program lasted for 6 weeks, and eating behavior of the children were evaluated using the Children Eating Behavior Questionnaire (CEBQ) before and after intervention. Plasma leptin and ghrelin were also determined using ELISA kits.

Results Circulating levels of cholesterol, triglycerides, and low-density lipoprotein cholesterol were also decreased with significant difference ($P < 0.05$), while high-density lipoprotein cholesterol was significantly increased ($P < 0.05$). Fasting plasma glucose was also decrease but with no significant difference. The level of leptin was decreased after 6 weeks intervention with no statistical significance, while the circulating level of ghrelin was significantly enhanced ($P < 0.05$). The scores of FR and EF were significantly decreased ($P < 0.05$) after intervention. No significant change was found on SR and SE of CEBQ, even though they were observed increased compared with that of baseline.

Conclusions The current study found that there were obvious effects of 6 weeks exercise intervention on appetite regulating hormones and subjective appetite changes in obese children.