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Editorial

Obesity - Related Hormones and Nutritional Status

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Obesity may be related to various endocrine changes as a result of changes in the hypothalamic-pituitary hormonal axes, including growth hormone deficiency, hypogonadism, Cushing's disease, and hypothyroidism. Obesity, a becoming pandemic is related to metabolic syndrome and insulin resistance. In general, obesity is defined as three or more of the following : 1) fasting blood sugar at least 100 mg/dl; blood pressure at least 130/85 mmHg; high-density lipoprotein (HDL) cholesterol equal to or less than 40 mg/dl for men; HDL cholesterol equal or less than 50 mg/dl for women; triglycerides at least 150 mg/dl; waist circumference at least 102 cm for men; and at least 88 cm for women. Several previous studies revealed additional benefits of combining exercise with caloric restriction on reduction of body fat and body weight and fat- free-mass (FFM) preservation, whereas a number of previous studies demonstrated no effects of adding exercise to an energy-restrictive diet on body weight and revealed no difference in body weight or composition between diet only and combining diet with exercise at the end of treatment. No differences are found in body weight between groups of only restrictive-caloric diet, combining restrictive-caloric diet with strength training exercise, and combining restrictive-caloric diet with aerobic-training exercise. Nevertheless, strength training exercise assisted more preservation of FFM, compared to the other studied groups. Some investigators demonstrated no additional effects of combining caloric-restrictive diet with exercise on insulin sensitivity or cholesterol. In men, low circulating testosterone levels have been related to the type-2 diabetes and metabolic syndrome factors presentations, whereas exogenous testosterone has been revealed reduction of body fat and improvement of the biochemical components of the metabolic syndrome. Aerobic training exercise have demonstrated transiently increasing testosterone levels. Indirectly body weight loss and changes in testosterone levels and metabolic risk factors may be associated with the types of exercise training programs, such as aerobic and strength exercises.

In conclusion, combining caloric-restrictive diet with aerobic or strength exercise program would provide additional benefits to FFM preservation, obesity-associated risk factors, and body weight loss, in comparison to only caloric-restrictive diet.