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Abstracts

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Programme:
Feeding behaviour
Foods – Nutrients
Vitamins – Oligoelements
Digestion – Absorption
Carbohydrate metabolism
Protein metabolism
Lipid metabolism
Body composition – Energy expenditure
Obesity

FEEDING BEHAVIOUR

Sex hormone-binding globulin (SHBG), insulin and insulin-like growth factor-I (IGF-I) in anorexia nervosa: effect of refeeding. JC Crave [1,2], C Baret [1], MO Joly-Pharaboz [2], P Cousin [1], E Carrier [3], H Déchaud [4], A Charrié [5], J Tourniaire [1], M Pugeat [1,2] *([1] Laboratoire de la clinique endocrinologique, hôpital de l'Antiquaille; [2] Inserm U 329, hôpital Debrousse, 69005; [3] Clinique psychiatrique Saint-Vincent, 69008 Lyon; [4] Laboratoire central de*

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High levels of circulating SHBG have been reported during starvation in patients with anorexia nervosa. The present work investigated the relationships between SHBG and insulin or IGF-I in these patients. The serum concentration of SHBG, insulin, IGF-I and IGF-binding proteins (IGF-BP 1 and 3), using specific radioimmunoassay and/or Western ligand blot analysis, were measured in 12 patients during starvation and after weight gain through refeeding. The electrophoresis migration of SHBG monomers was also analysed using Western blotting.

As compared to a control group of healthy women (n = 9), the patients with anorexia nervosa had significantly increased serum concentrations of SHBG (82.2 ± 31.5 vs 47.9 ± 12.9 nmol/L, P < 0.001) and IGF-BP1 (112.1 ± 134.3 vs 26.5 ± 27.5 µg/L, P < 0.001), and significantly decreased concentrations of IGF-I (99.2 ± 56.8 vs 237.6 ± 90.6 µg/L, P < 0.001) and IGF-BP3 (2.5 ± 0.7 vs 3.4 ± 0.6 mg/L, P < 0.01). The fasting insulin level was not significantly different in the two groups (9.3 ± 5.4 vs 9.0 ± 1.5 mU/L). Weight gain (+ 4 kg) was associated with decreases in SHBG (41.1 ± 10.3 vs 82.2 ± 31.5 nmol/L, P < 0.001) and in IGF-BP1 (26.9 ± 28.3 vs 112.1 ± 134.3 µg/L, P < 0.001) levels and with increases in IGF-I (298.8 ± 129.1 vs 99.2 ± 56.8 µg/L, P < 0.001), IGF-BP3 (3.26 ± 0.79 vs 2.5 ± 0.7 mg/L, P < 0.002), and fasting insulin (12.9 ± 6.1 vs 9.3 ± 5.4 mU/L, P < 0.01) levels. Western blot analysis revealed no variation in the migration of SHBG monomers. This result suggested that there had been no alteration of SHBG glycosylation during refeeding. A negative and significant correlation between SHBG and IGF-I levels (r = –0.51, P = 0.001) was found, as well as an inverse relationship between the increase in insulin and the decrease in SHBG (r = –0.80, P = 0.001) levels.

These results suggested that insulin and IGF-I could be associated with the changes in SHBG concentration in anorexia nervosa. The relative effect of these growth factors on the production and/or on the metabolic clearance of SHBG remains to be further investigated.

Sensory stimuli are not accurate cues in the estimation of the energy content of biscuits. M Chabert [1], L Abdallah [1], B Le Roux [2], J Louis-Sylvestre [1] *([1] Ephe-Inserm, faculté de médecine Xavier-Bichat, 75018; [2] CNRS, faculté de médecine des Saints-Pères, 75006 Paris, France)*

A multidimensional data analysis was performed to determine the relationships between: i) actual nutritional composition of foods (content of water, sugars [disaccharides], fat and energy per 100 g food); ii) their structure; iii) their nutritional composition as estimated by subjects on a nine-point scale (sweetness, fatness, moisture, energy ['calories']); iv) intensity of perceived flavour (nine-point scale); v) palatability (nine-point scale) and vi) the amount of food that subjects think they would be able to eat (ie, prospective consumption).

Subjects were 102 healthy young men (nonsmokers, nonrestrained, with normal body weight). They all tasted 45 different kinds of biscuits, at 4:00 pm, on 3 test days a week apart. For each biscuit, they indicated if they were familiar with it (five levels), they rated the nutritional, sensory and hedonic parameters and their prospective consumption for a 4:00 pm snack.

However familiar the subjects were with biscuits, their evaluations of sweetness, fatness and moisture were about the same when they were performed just before or just after tasting. Depending on the biscuits,