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JOURNAL ARTICLE

Altered testosterone feedback in pubertal male rats raised on reduced caloric intake

B. E. Piacsek, T. M. Bonifer and R. C. Tan

A study was conducted to explore the hypothesis that reduced caloric intake increases the negative feedback efficacy of testosterone on gonadotropin secretion. Daily subcutaneous injections of testosterone propionate in oil were administered to either age-matched (37-day-old) or weight-matched (mean = 178 g) ad libitum-fed (control) or underfed rats that received 60% of normal daily food intake from the age of 20 days. Daily doses of testosterone propionate ranged from 25 to 400 micrograms/100 g body weight. Results indicate that reduced caloric intake increases the suppression of serum LH by testosterone propionate in both age-matched and weight-matched underfed rats. On the other hand, the response of serum FSH concentrations to testosterone propionate was affected by reduced diet only in the weight-matched animals. Results suggest that the increased negative feedback of testosterone on LH secretion is a specific diet-induced effect and not merely the result of reduced growth. The altered response in FSH secretion, however, may represent age-associated changes in sensitivity to testosterone rather than diet-induced effects.

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