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JOURNAL ARTICLE

Temporal relation between leptin and various indices of sexual maturation in the male rat

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Recent studies in humans and rhesus monkeys have suggested the possibility that the adipose tissue hormone leptin has a stimulatory and/or permissive effect on the onset of puberty in the male. We evaluated this hypothesis by measuring leptin in groups of male rats between the ages of 26 days and 96 days. A statistically significant positive correlation was present between serum leptin and age, body weight, prostate, seminal vesicle, and testes weight (both absolute and as a function of body weight). A statistically significant negative correlation was present between leptin and serum FSH and alpha-inhibin. There was not a statistically significant correlation between leptin and testosterone or LH. There was a statistically significant increase in the serum leptin concentrations at day 47. This rise was coincident with the peripubertal growth spurt in the secondary sexual organs and the peripubertal testosterone rise but occurred after the prepubertal rise in testicular weight, the appearance of elongating spermatids in the testes, and the start of the decline in FSH. In animals in which the peripubertal testosterone rise was delayed by the administration of EDS, serum leptin showed statistically significant differences from control. These data do not support the hypothesis that leptin provides a trigger for the onset of puberty in the male rat. They do suggest that leptin may be involved in the secondary sexual organ growth spurt and are consistent with the hypothesis that testosterone stimulates leptin synthesis during puberty.

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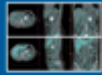
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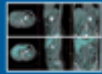
Am. J. Physiol: Regulatory, Integrative and Comparative Physiology



P. Concannon, K. Levac, R. Rawson, B. Tennant, and A. Bensadoun
Seasonal changes in serum leptin, food intake, and body weight in photoentrained woodchucks

Am J Physiol Regulatory Integrative Comp Physiol, September 1, 2001; 281(3): R951 - R959.

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