

## Role of GH-Releasing Factor and Somatostatin on Somatic Growth in Rats

The investigator studied the role of growth-hormone-releasing hormone (GHRH) and somatostatin (somatotropin-release-inhibiting factor [SRIF]) in affecting growth hormone (GH) secretion and long-term growth in the rat by passively immunizing animals with antisera raised against GHRH and SRIF. GHRH antiserum administration significantly inhibited the normal increase in body weight observed in both young male and female rats as well as in newborn rats. The effects of GHRH and somatostatin antisera administration on serum GH concentrations were studied in neonatal rats. In animals between 1 and 20 days old, GHRH-antiserum administration significantly decreased serum GH concentrations compared with levels in control animals. In animals between 1 and 10 days of age, SRIF-antiserum treatment had no effect on GH concentrations, whereas SRIF-antiserum treatment significantly increased GH concentration in 15-day-old and 20-day-old animals.

Wehrenberg WB: *Endocrinology* 1986;118:489-495.

**Editor's comment**—These results confirm that the control of pulsatile GH secretion is through the episodic release of GHRH. Thus, it is not unexpected that those rats treated with GHRH antiserum would grow at a reduced rate; however, no data were pres-

ented to determine what organ systems were affected. Both male and female rats showed similar 25% to 30% decrements in weight gain, implying that GHRH is not involved in regulating the sexually dimorphic growth rates. In addition, the antiserum to GHRH was effective from birth, suggesting that neonatal, as well as later, growth is dependent on GHRH secretion.

In contrast, the passive immunization of neonatal rats with an antiserum to SRIF indicated that it is not until sometime after the tenth day of age that endogenous SRIF can actively regulate GH secretion. Previous investigators have not been able to show biologic effects of SRIF in animals under 5 days of age, so this finding in the present study is not unexpected. Thus, the results suggest that the elevated GH concentrations in neonatal rats are due to hypothalamic GHRH release.

That the rats treated with GHRH antiserum grew at all implies that the pituitary may release GH by a non-GHRH-dependent mechanism, or that some other growth factor(s) is (are) responsible for part of the complex process called growth.

One cannot necessarily transfer results obtained in rats to humans. It would be interesting to ask, however, if the human neonate has the same mechanism for GH release since human neonates have elevated GH determinations during the first few days of life.