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Letter from the President Stephen C. Woods, Ph.D.

Because we are fortunate in having Denny VanderWeele spend a few months with us in Seattle this year, and because our respective labs have both been examining the role of insulin in ingestive behavior for some time, he and I thought it might be instructive to address some points of agreement or lack thereof in our approaches and beliefs about the system. I therefore asked Denny to write a brief statement outlining his approach and where it has led him, and that report begins in the next paragraph. My comments occur at the end of the column.

Insulin and intake - a short summary

by D.A. VanderWeele

Beginning with a report published in 1980, I have advocated that insulin plays an important role in the production of satiety from ingested foods. This report grew out of some serendipitous findings carried out in streptozotocin-induced diabetic animals implanted with osmotic minipumps; as a control condition, I assessed effects of smaller, more modest doses of insulin in normal rats on food intake and body weight. Doses

of insulin ranging from 1 to 2U/rat/24 hr reduced spontaneous food intake and at just under 2 U reduced body weight gain over the 7 days of active pumping. In follow-up studies, we found that insulin produced this effect primarily by reducing nocturnal intake, by reducing meal size without affecting meal frequency and without producing frank hypoglycemia.

It is important to integrate the above findings with our streptozotocin work. In animals given diabetes-producing doses of streptozotocin, rats demonstrate the advent of the disease, in our studies, by initially increasing meal size. Only after significant weight loss occurs does an increase in the number of meals also appear (VanderWeele & Gorang, 1983). Another report also noted that in insulin-normal rats, subdiaphragmatic truncal vagotomy attenuated the suppression produced by the minipump-administered insulin and an attenuation was also produced in animals induced to become obese by a modified "variety" diet (Vanderweele, Harackiewicz & Van Itallie, 1982).

Dr. Rhonda Oetting-Deems and I then proceeded to examine the effects of insulin