

Adiposity hormone, leptin, regulates food intake by influencing learning and memory

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Research to be presented at the Annual Meeting of the Society for the Study of Ingestive Behavior (SSIB), the foremost society for research into all aspects of eating and drinking behavior, finds that the hormone leptin reduces food intake, in part, by activating the hippocampus, an area of the brain that controls learning and memory function. Leptin is a hormone released from fat cells that acts on the brain to inhibit feeding.

Researchers from the University of Pennsylvania found that when leptin was delivered directly to the [hippocampus](#) in rats, the animals consumed less food and lost body weight. Leptin delivered to this region of the [brain](#) also impaired the ability of the animals to learn about the spatial location of food.

These findings highlight the need for future research aimed at identifying the role of cognitive processes in [food intake](#) and body weight control. "Feeding is a complex behavior that is not always driven by hunger or need. An element of our research program is focused on understanding how learning and memory contribute to excessive food intake, and ultimately obesity," says Dr. Scott Kanoski, lead author. When fat stores are plentiful, humans and animals may be less focused on learning about cues that provide information about food location and availability.

According to Kanoski, "these findings suggest that the brain receives and responds to signals about body energy status, specifically the amount of body fat reserves, and in turn these signals influence what type of

environmental cues we learn about. When leptin signaling is impaired, which is common in [obesity](#), cognitive processes that normally would help inhibit or decrease food intake may also be compromised."

Provided by Society for the Study of Ingestive Behavior

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