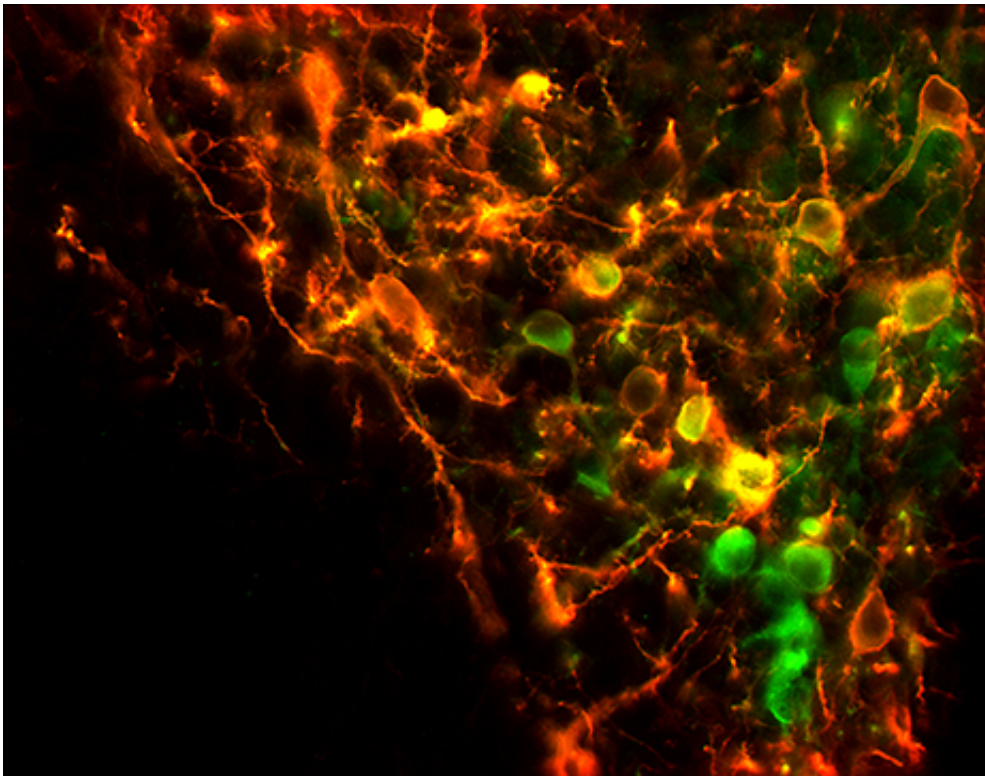


# Researchers find new molecular regulator of eating

August 23 2016, by Bill Hathaway

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TH neurons tagged in green appear to have role in controlling eating. Credit: Yale University

A set of neurons previously linked to lactation in women may also play a key role in regulating eating and body weight, a new study by Yale School of Medicine researchers has found.

Scientists have long known that an area of the brain called the arcuate nucleus of the hypothalamus played a key role in regulating energy metabolism and food intake. Much of the scientific enquiry relating to feeding has focused on the role of POMC [neurons](#), which regulate food intake. Yale neurosurgery professor Anthony van den Pol and colleague Xiaobing Zhang investigated what neighboring [tyrosine hydroxylase](#) (TH) neurons do. When they used optogenetics to selectively activate the TH nerve cells in living mice, the animals began to eat, but when the researchers turned off the stimulating light, the mice stopped eating.

The investigators also found that transmitters the TH neurons release can inhibit both the POMC neuron and other neurons that control feeding. A hormone from the gut called ghrelin that can signal an empty stomach also excites the TH cells and trigger increased [food intake](#). "Our study opens the door for further investigation of how these brain cells may contribute to obesity or other eating-related health problems" said van den Pol.

The study appears online Aug. 22 in the journal *Nature Neuroscience*.

**More information:** Xiaobing Zhang et al. Hypothalamic arcuate nucleus tyrosine hydroxylase neurons play orexigenic role in energy homeostasis, *Nature Neuroscience* (2016). [DOI: 10.1038/nn.4372](https://doi.org/10.1038/nn.4372)

Provided by Yale University

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