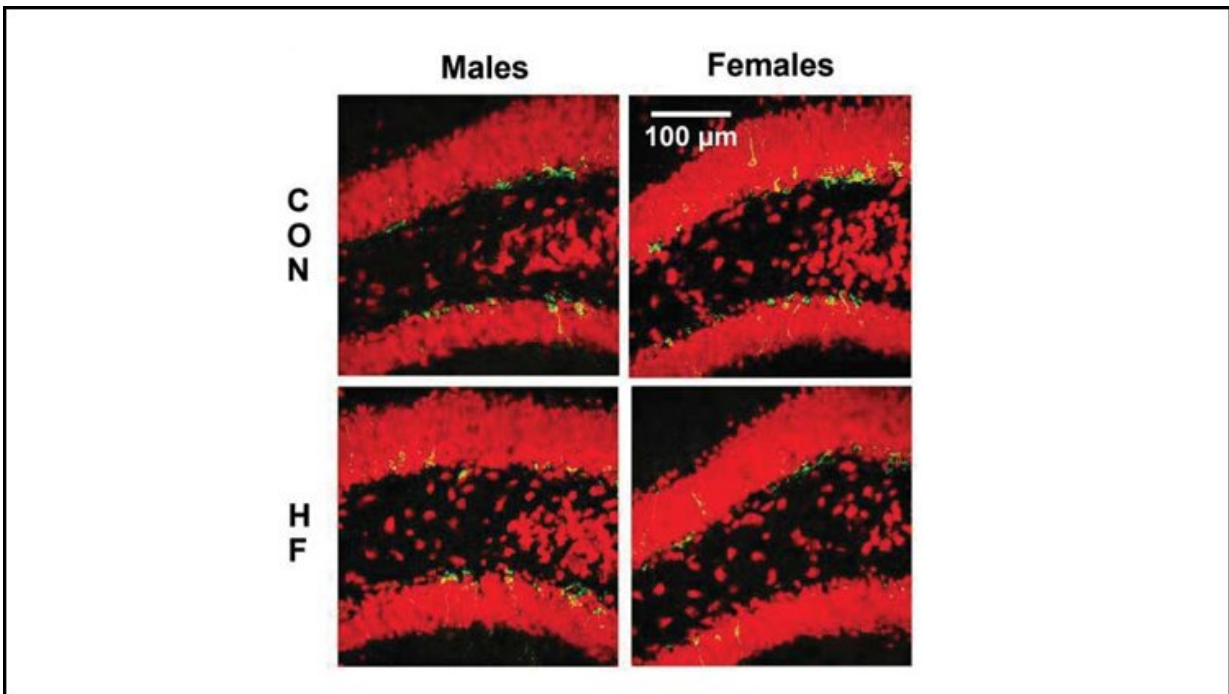


High fat diet impairs new neuron creation in female mice

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Female mice on the high fat diet displayed fewer developing neurons in the hippocampus. Credit: Robison et al., *eNeuro* 2019

A high fat diet limits the birth and growth of new neurons in adult female, but not male, mice, according to new research published in *eNeuro*. Further research could inspire metabolism-based preventions and treatments for brain disorders.

Metabolic disorders like obesity and type 2 diabetes are associated with an increased risk for brain disorders ranging from depression to Alzheimer's disease. The birth and development of new neurons—adult neurogenesis—may be a link between these two types of conditions. The hippocampus, an area of the brain implicated in memory and emotional processes, is a known site of adult neurogenesis.

Robison et al. fed one group of mice a high fat diet and another group a normal diet for eighteen weeks. The high fat diet caused [weight gain](#) and high blood sugar in both male and female mice, however, only female mice experienced impaired neurogenesis in the hippocampus. The [female mice](#) on the high fat diet had fewer newborn and developing neurons, while male mice on the [high fat diet](#) had the same number of new neurons as the control mice.

This finding offers additional insight into why women are more at risk for greater cognitive decline during Alzheimer's disease and depression.

More information: High Fat Diet-Induced Obesity Causes Sex-Specific Deficits in Adult Hippocampal Neurogenesis in Mice, *eNeuro*, [DOI: 10.1523/ENEURO.0391-19.2019](https://doi.org/10.1523/ENEURO.0391-19.2019)

Provided by Society for Neuroscience

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