

# Starvation prompts body temperature, blood sugar changes to tolerate next food limitation

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Rats that have experienced past episodes of limited food resources make physiological adaptations that may extend their lives the next time they are faced with starvation. New research about starvation physiology will be presented today at the American Physiological Society (APS) annual

meeting at Experimental Biology 2017 in Chicago.

Researchers from St. Mary's University in Texas severely limited [food intake](#) in [adult rats](#) on three separate occasions during their lifetime. During the first two periods of starvation, the animals lost 20 percent of their body mass. In the third, the most prolonged starvation period, they lost 30 percent. The research team found that the starved rats had a lower body temperature and lower blood sugar levels when compared with healthy, fed control rats. These physiological adaptations helped the rats to hold on to stored fat for energy and suggest that previous periods of extreme hunger "affected the starvation strategies used by the rats," wrote Marshall McCue, first author of the study.

These findings are important to understand the "potentially adaptive physiological responses to starvation," McCue wrote. He encourages biologists to conduct "experiments of starvation physiology that more closely resemble the dynamic nature of food availability."

**More information:** Marshall McCue, PhD, will present "Repeated exposure to food limitation earlier in life enables rats to spare lipid stores during prolonged starvation" in a poster session on Monday, April 24, from 12:45 to 3 p.m. CDT in Hall F of the McCormick Place Convention Center.

Provided by Experimental Biology 2017

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