

Brain images focus on stress eaters' neurological response to comfort foods

November 21 2014, by Marcia Wood



Bakery products--cakes, cookies, pies, and other pastries. Credit: Peggy Greb.

Stress eaters who load up on high-calorie goodies as a source of comfort

when life gets tough may end up battling overweight or obesity. Either condition can increase the risk of heart attack, stroke or chronic diseases such as type 2 diabetes. That's the reason why U.S. Department of Agriculture (USDA) nutrition researcher Kevin D. Laugero and colleagues are taking a close look at pathways inside the brain that link stress to unhealthy eating or, technically speaking, the neurophysiology of stress eating.

Laugero's investigations are part of ongoing obesity prevention research at the USDA Agricultural Research Service (ARS) Western Human Nutrition Research Center in Davis, California, where Laugero is based.

In one of Laugero's most recent studies, featured in the November/December 2014 issue of *Agricultural Research* magazine, 30 healthy female volunteers age 20 to 53 were asked to evaluate the amount of [chronic stress](#) that problems with work, relationships, or finances were causing in their lives. Then, brain scans known as functional magnetic resonance images were taken while each volunteer viewed photos of high-calorie foods, healthy foods, or everyday objects such as coins.

Laugero's team of USDA and University of California-Davis scientists found that some patterns of brain activity in the high-chronic-stress volunteers differed markedly from those of low-chronic-stress participants. For example, activity in the prefrontal cortex, a region of the brain that regulates self-control and strategic decision-making, was essentially "turned off" when high-stress volunteers viewed calorie-rich foods. This was in contrast to the response revealed in [brain scans](#) of the low-stress volunteers who were shown the same photos.

For more than a decade, obesity researchers have used sophisticated neuroimaging technology to detect and map the way the brain responds to food. But Laugero's research, documented in a 2013 peer-reviewed

scientific article in *Physiology & Behavior*, is unique and may help pave the way to science-based strategies that help stress eaters break the habit.

Provided by Agricultural Research Service

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