

Study reports changing to a low-fat diet can induce stress

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Changing one's diet to lose weight is often difficult. There may be physical and psychological effects from a changed diet that reduce the chances for success. With nearly 65% of the adult population currently classified as overweight or obese and with calorically dense foods high in fat and carbohydrates readily available, investigating those factors that contribute to dieting failures is an important effort.

In a study in the May 1st issue of *Biological Psychiatry*, researchers found that mice withdrawn from high-fat or high-carbohydrates diets became anxious and showed changes in their brains indicating higher stress levels.

Using a variety of standard measures of mouse behavior, researchers acclimated mice to either high-fat (HF) or high-carbohydrate (HC) diets, abruptly replaced those diets with standard chow, and observed behavioral changes. The brains of the mice were also examined for increases in corticotrophin releasing factor (CRF) levels which can indicate high stress levels.

Writing in the article, Tracy L. Bale, Ph.D., states, "Our behavioral, physiologic, biochemical, and molecular analyses support the hypothesis that preferred diets act as natural rewards and that withdrawal from such a diet can produce a heightened emotional state." Once deprived of their preferred diet, mice would overcome their natural aversion to bright environments to obtain the HF foods, even when standard food was available. The authors continue, "These results strongly support the

hypothesis that an elevated emotional state produced after preferred-diet reduction provides sufficient drive to obtain a more preferred food in the face of aversive conditions, despite availability of alternative calories in the safer environment. Our results may suggest that, similar to the case of an individual who is in withdrawal from a rewarding substance, these mice effectively are displaying risk-taking behavior to obtain a highly desirable substance, supporting the powerful rewarding aspects of the HF food."

Source: Elsevier Health Sciences

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