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Picturing hunger: fMRIs and visual cues help map brain activity

Determining the role of the central nervous system (CNS) in eating behavior is key to understanding the obesity epidemic, yet before the complex role of the brain in regulating hunger and satiation can be unraveled, a uniform experimental procedure for imaging and studying hunger is necessary. A new study by Führer *et al.* uses functional magnetic resonance imaging (fMRI) and visual stimuli to assess changes in the brain in response to hunger. Male subjects shown various food-neutral and food-related pictures under conditions of satiety and hunger exhibited significant regional processing differences in the orbitofrontal cortices. These results show how CNS activity differs in response not only to different states of satiety but also to various food and nonfood visual stimuli. The use of visual stimuli and fMRI, with its high spatial and temporal resolution, could therefore be valuable as a standard procedure for evaluating the dynamic role of CNS activity in hunger. [See page 945](#)

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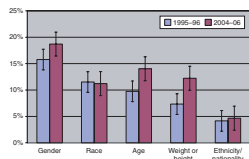


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Childbearing may increase central adiposity

Studies have shown that pregnancy tends to increase a woman's adiposity in the central (or visceral) region, an important risk factor for type 2 diabetes and cardiovascular disease. Using computed tomography and dual-energy X-ray absorptiometry, Gunderson and colleagues reveal how childbearing increases visceral fat in the absence of changes in overall weight, BMI, subcutaneous fat, and total abdominal adipose tissue. They found a threefold increase in visceral fat in childbearing women from before conception to postpartum. These results suggest that childbearing significantly affects visceral fat deposition. Considering the risks associated with high central adiposity regardless of one's overall weight, further research to identify postpartum behaviors that could reverse this tendency is warranted. [See page 1078](#)

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Increases in weight discrimination perceived by Americans

Despite the significant emotional and physical repercussions of weight discrimination, little research has been conducted on its prevalence in the United States and how it has changed over time. In the first study of its kind, Andreyeva and colleagues found an alarming increase in perceived weight discrimination over a 10-year span. Using data from the National Survey of Midlife Development in the United States collected initially in 1995–1996 and again in 2004–2006, they report an increase in perceived discrimination from 7% to 12% in all but elderly populations. The most recent rate of weight/height discrimination reported is comparable to that of race- and age-based discrimination. This trend highlights the need for legal protection and public education to eliminate weight-based bias and discrimination. [See page 1129](#)

The role of endocannabinoids in obesity: cause or effect?

Although previous studies in animals suggest that peripheral activation of the endocannabinoid system (ECS) contributes to obesity, a study of patients undergoing sibutramine treatment to induce weight loss indicates that activation of the ECS may be a cause rather than an effect of obesity. Engeli and colleagues found no change in peripheral ECS activity after a 5% weight loss induced by sibutramine. The study also discovered a correlation between the expression of adipose leptin and the cannabinoid type 1 receptor and certain adipose tissue factors, adding needed detail to our understanding of the mechanisms behind peripheral ECS activity. Further research is necessary to determine whether a higher percentage of weight loss affects ECS activity. [See page 1135](#)