Weight Loss Does Not Improve Impaired Brain Responses in People With Obesity

Losing weight boosted metabolic markers, such as insulin sensitivity, in people with obesity, but did not remedy their blunted brain responses to nutrient intake, according to functional magnetic resonance imaging results from 30 participants with obesity, or a body mass index of 30 or higher, and 28 participants without obesity.

Activity in several brain regions involved in eating behavior decreased after people without obesity received an intragastric infusion of glucose or lipids. In addition, participants without obesity released dopamine, a neurotransmitter linked with motivation and reward around food intake, after receiving a lipid infusion. In contrast, participants with obesity did not experience a change in brain activity after nutrient intake or an increase in dopamine after lipid infusion, even after losing 10% of their body weight during a 12-week diet intervention.

“[O]ngoing resistance to post-ingestive nutrient signals after significant weight loss may in part explain the high rate of weight regain after successful weight loss,” the researchers wrote in Nature Metabolism.

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Note: Source references are available through embedded hyperlinks in the article text online.