MedicalXpress

Physiological response may explain why some severely obese patients overeat

June 9 2009

Don't feel like you are getting full when eating a large meal? New research from The Miriam Hospital suggests that a physiological response may partially explain why severely obese individuals may not feel satisfied after eating and often have difficulty controlling the amount of food they consume during a meal.

Researchers led by Dale Bond, PhD, of The Miriam Hospital's Weight Control and Diabetes Research Center focused on habituation, or the idea that continual exposure to a specific food decreases one's physical response to that food. Habituation theory suggests that if one habituates, or adjusts, slowly to food cues, they are less likely to feel satisfied with that particular food and can consume more of it.

In the study, published online in *Obesity Surgery*, the research team looked at saliva production following repeated exposure to lemon juice. They compared the responses of two groups - severely obese patients preparing for bariatric surgery and normal weight individuals - and found that the bariatric surgery candidates continued to salivate at a consistent rate throughout the tastings, indicating that very little habituation occurred. Meanwhile, the salivation rate of the normal weight controls decreased with successive exposures to the lemon juice.

"The failure of bariatric surgery candidates to habituate suggests that satiation, or the feeling of fullness while eating, is impaired in this population. This could play a role in the inability of some severely obese individuals to regulate or control the amount of food that they eat during

a meal," says Bond.

He adds that the findings make a case for the use of habituation as a model to study why some patients who have undergone bariatric surgery continue to engage in problematic behaviors, such as binge eating, which contributes to poorer weight loss outcomes.

The study included 34 severely obese bariatric surgery candidates and 18 individuals of normal weight. Saliva was collected from cotton balls positioned in each participant's mouth during two baseline water trials and ten lemon juice trials. Participants also completed questionnaires to assess the level of conscious control over eating as well as the frequency of binge eating episodes during the previous 28 days.

Although the study's findings support previous research comparing individuals with mild obesity and normal weight individuals, the researchers say this is the first study to test this model in a severely obese patient population.

"Bariatric surgery has been referred to as 'behavioral surgery,' given the importance of eating behavior in postoperative outcomes. Habituation may be a valuable tool for enhancing our understanding of eating regulation in severely obese individuals and how it is impacted by bariatric surgery," says Bond, who is also an assistant professor (research) in psychiatry (weight control) at The Warren Alpert Medical School of Brown University.

The authors add that further research is needed to determine whether habituation rates to food stimuli change after bariatric surgery and whether such changes are related to weight loss and/or mechanisms specific to different surgical procedures.

Source: Lifespan (news : web)