

Obesity counseling should focus on neurobehavioral processes, not personal choice, researchers say

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Current approaches to dietary counseling for obesity are heavily rooted in the notion of personal choice and will power – the ability to choose healthy foods and portion sizes consistent with weight loss while foregoing sweets and comfort foods.

According to preventive medicine and behavioral experts at Rush University Medical Center, research supports a new counseling approach that views obesity as a result of neurobehavioral processes - ways in which the brain controls eating behavior in response to cues in the environment.

The new, proposed neurobehavioral model is highlighted in an article in the August issue of the *Journal of the American Dietetic Association*.

"Typically, overweight and obese patients receive education about dietary contributions to weight gain, and they are simply encouraged to fight the powerful urge to eat the delicious foods that are available almost everywhere in the environment, and instead, make dietary choices consistent with weight loss," said Brad Appelhans, PhD, clinical psychologist and obesity researcher in the Rush University Prevention Center and lead author of the article. "Yet, we know this approach rarely works. Even highly motivated and nutritionally informed patients struggle to refrain from highly palatable foods that are high in sugar, salt and unhealthy fats."

The suggestion that individuals become or remain obese due to their unhealthy personal choices or a lack of willpower to make healthy choices is also stigmatizing to patients and unlikely to motivate them to lose weight.

The new model adopts a scientifically informed framework that clarifies how personal choice is affected by biological and environmental factors.

The three neurobehavioral processes consistently implicated in obesity and overeating are food reward, inhibitory control and time discounting.

Food Reward – is largely mediated by the mesolimbic dopamine system, a neural pathway in the brain also known as the reward circuit. Food reward includes both the experience of pleasure one receives from eating and the motivational drive to obtain and consume highly palatable foods. Those with greater sensitivity to reward have stronger food cravings for sweet and fatty foods. This biologically-based sensitivity, coupled with easy access to delicious snacks and fast food outlets, makes one highly vulnerable to overeating and weight gain.

- Inhibitory Control – Beyond the intensity of food cravings is the ability to suppress urges to eat high-calorie foods. Controlling behavior despite a strong motivation to eat is largely mediated by the brain's prefrontal cortex, which is considered critical for self-control, planning and goal-directed behavior. The dorsolateral region of the prefrontal cortex has been implicated in the decision to engage inhibitory processes for the purpose of self-regulation, and this brain area becomes activated when dieters choose healthy food options over tastier options.
- Time Discounting – A third factor that likely contributes to the low success rates of dietary interventions for obesity is the human tendency to devalue delayed rewards.

"Most of us would rather receive \$200 today rather than \$300 a year from now," said Appelhans.

Similarly, the immediate pleasure from eating has a greater effect on decision making than the more delayed health benefits of weight loss.

The link between time discounting and body weight is reflected neuroanatomically because it is governed by the same brain regions associated with food reward and inhibitory control – the mesolimbic dopamine system and the prefrontal cortex.

"Obesity is heavily influenced by genetic vulnerabilities and a toxic food environment," said Appelhans. "However, counselors can help patients control their weight through strategies focused on the interaction between the brain and the environment, rather than the traditional approach of encouraging patients to simply ignore or fight food cravings and eat fewer calories than they expend."

A few strategies recommended by the researchers include:

- In order to combat food reward, patients can remove high fat foods they crave from personal environments such as the home and workplace to prevent the activation of the reward circuitry.
- Limit the impact of reward on food choice by shopping with a grocery list or using online grocers.
- Practice stress management techniques since stress promotes overeating and obesity by enhancing [food reward](#) processing.
- Avoid situations such as buffets and restaurants that challenge inhibitory control.
- Focus on achieving short-term behavioral goals, such as cooking a healthy dinner on three nights of the week rather than focusing on long-term weight loss goals.

Dr. Appelhans is affiliated with the Rush University Prevention Center, which specializes in the behavioral, medical, and nutritional management of [obesity](#) and other risk factors for heart disease and diabetes.

Provided by Rush University Medical Center

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