Study: Impulsivity may weigh down some people

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Dr. Francesca Filbey. Credit: University of Texas at Dallas

Researchers at the Center for BrainHealth at The University of Texas at Dallas have found a link between having an impulsive personality and a

high body mass index (BMI).

The findings published in the journal *Obesity* demonstrate that having an impulsive personality—the tendency to consistently react with little forethought— is the key factor that links brain patterns of impulsivity and a high BMI. BMI is a measure of body fat for adults, based on height and weight.

"Our research points to impulsive personality as a risk factor for weight gain," said Dr. Francesca Filbey, principal investigator and associate professor in the School of Behavioral and Brain Sciences and the Center for BrainHealth. "Thus, addressing impulsive personality traits is essential to developing effective weight management programs that can help the 70 percent of Americans who are overweight or obese."

For the study, researchers recruited 45 individuals, ages 22 to 43 with an average BMI of 30.7, and analyzed three separate measures to understand the role of impulsivity in body weight, including a self-report, neuropsychological testing and functional magnetic resonance imaging (fMRI).

For the self-report, researchers used an impulsive sensation-seeking scale to gauge innate personality characteristics. Participants were asked to rate how much they agreed with statements such as: "I tend to change interests frequently" or "I tend to begin a new job without much advance planning on how I will do it."

The neuropsychological measure sought to assess whether an individual's decision-making style was more impulsive or cautious. It evaluated a participant's ability to distinguish between visual images on a screen and indicate an accurate response while being tested for speed. An fMRI was used to examine brain activation and connectivity during an impulse control task that required participants to push one of two buttons

depending on visual cues and refrain from pushing a button if an audio cue occurred at the same time as the visual cue.

"Despite performing similarly to controls on the impulse-control task in the scanner, individuals with a high BMI exhibited altered neural function compared to normal weight individuals," Filbey said. "We expected that an impaired ability to inhibit impulses would be the factor linking high BMI and brain change, but our study showed that having the inherent, impulsive personality trait, not an impulsive decision-making state in a specific situation or in response to vices, is the mediating factor.

"Given our findings, treatments that provide coping skills or cognitive strategies for individuals to overcome impulsive behaviors associated with having an impulsive personality could be an essential component for effective weight-loss programs," Filbey said. "Others have found that increased self-awareness of impulsive behaviors is helpful in being able to regulate behavior."

More information: Francesca M. Filbey et al. A multimodal study of impulsivity and body weight: Integrating behavioral, cognitive, and neuroimaging approaches, *Obesity* (2017). DOI: 10.1002/oby.21713

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