



# Is Food Addictive?

By Michael Lutter, MD/PhD

Having worked in the field of Eating Disorders since 2005, I have seen many articles and presentations on 'Food Addiction', a topic which has gained greater interest in recent years as public health concerns over obesity have increased. Despite wide interest and research in the area, the concept of Food Addiction remains controversial with strong feelings on both side of the issue. I spent many years studying the genetic and neurobiological basis of both drug abuse and binge-eating behaviors and while there are certainly some similarities in the two areas, there are notable differences.

There are three important concepts to know related to the idea of addiction: dependence, tolerance, and compulsive- or loss of control- use. Dependence refers to the idea that people who abuse drugs or alcohol have a withdrawal syndrome when they suddenly stop using. Alcohol has well-known and dangerous withdrawal syndrome (racing heart, elevated blood pressure, tremor, hallucinations, seizures, and potentially death), but withdrawal occurs for most drugs of abuse including cocaine, opiates, and nicotine. Food however is not associated with withdrawal symptoms in marked distinction from drugs of abuse.

Tolerance, the second concept relevant to addiction, is the idea that drug abusers either have diminished pleasure from a drug after prolonged use or must take increasing amounts of the drug to get the same effect. Opiates, such as heroin or oxycodone, are notorious for producing tolerance resulting in dramatic escalation in use over time. Again though food addiction does not fit neatly with the concept of tolerance.

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In the absence of physical dependence or tolerance, I most often see people using the idea of ‘compulsive overeating’ to argue that food is addictive. Common examples that I see presented to justify this claim include people with extreme BMIs who can’t lose weight by diet alone despite the health consequences and people with binge-eating who consume unusually large amounts of food despite their desire not to.

A closer look at genetic studies of patients with extreme obesity or eating disorders, however casts doubt on the concept of food addiction. Both conditions are highly heritable meaning that variations in the DNA that we receive from our parents at conception increases the risk of developing either disorder later in life. Research from Sadaf Farooqi at the University of Cambridge and others in the field have found that mutations in genes such as the melanocortin 4 receptor are associated with extreme obesity. The melanocortin 4 receptor is one of the molecules in your body responsible for telling the brain how much energy is stored in the body. The brains of people with mutations in the melanocortin 4 receptor believe that they are starving despite having abundant adipose tissue. Similarly work our laboratory and others has found that patients with binge-eating behaviors are more likely to have mutations in genes for satiety hormones like glucagon-like peptide 1. People with mutations in glucagon-like peptide 1 continue to feel hungry even after a large meal.

These two examples illustrate an important difference between food and drugs of abuse. The body needs food to survive and has evolved to sense the amount of energy it has stored. When energy levels drop to dangerously low levels, the brain responds by increasing the motivation to eat high calories foods at any cost in order to survive. If a person was lost in the woods for weeks with nothing to eat, no one would accuse them of being 'addicted to food' after breaking into a cabin that they happen to stumble upon to look for food. In the same sense, I don't believe that it is fair to call food ‘addictive’ when people have impairments in their ability to regulate appetite and energy balance. Food is pleasurable, and that can lead to poor choices at times, but the fundamental processes of drug addiction and compulsive overeating are different and that distinction is important for treating patients who suffer from both.

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Is a Physician-Scientist who has researched and treated Eating Disorders, Anxiety, and Depression since 2006. He founded Precision Psychiatry in 2018 to bring cutting edge treatments to patients. Learn more or schedule an appointment today at [Precision-Psychiatry.com](http://Precision-Psychiatry.com)

