

How a drug for ADHD is being used to fight binge eating

February 10 2015, by Jordan Gaines Lewis



Credit: AI-generated image ([disclaimer](#))

The US Food and Drug Administration [has just approved](#) the use of lisdexamfetamine dimesylate for the treatment of binge eating disorder. Licensed under the brand name [Vyvanse](#), lisdexamfetamine is the first and only FDA-approved medication for this condition.

But Vyvanse has already been on the market since 2007 as a daily treatment for attention deficit hyperactivity disorder (ADHD) in children and adults. So how does this drug act on two seemingly distinct conditions? Although amphetamines have long been known [to suppress appetite](#), Vyvanse's action on the brain's self-control, motivation, and reward systems makes it particularly useful for combating [binge eating disorder](#).

What is binge eating disorder?

When we hear the term "binge", many of us associate it with subsequent purging, as seen in bulimia. Binge eating disorder, or BED, however, differs in that individuals do not attempt to eliminate their food after a bingeing episode – despite the unbearable shame many often feel afterwards.

BED received its own recognition in 2013 with the release of the DSM-5. Criteria for BED include recurrent episodes (at least once per week for three months) of eating large amounts of food in a short period of time, often accompanied by a sense of no self-control. Before eating, the individual may not have even felt physically hungry, yet will continue only until they feel uncomfortably full. And disgust, guilt, and depression are common feelings after bingeing.

Those with BED often have other concurrent psychiatric conditions, including [major depressive disorder](#), bipolar disorder, substance abuse, or anxiety disorder. [Recent research suggests](#) that those with BED, in general, have lower self-esteem, unhealthy eating patterns and overall body dissatisfaction. As such, many clinicians refer to binge eating as an "expressive disorder", or one that is only expressed as a result of deeper psychological problems.

Recently, 90s tennis star Monica Seles [opened up to Good Morning](#)

[America](#) about her decade-long struggle with BED:

For me, when I was in stressful situations on the tennis court or in my personal life, I would start my binge eating ... My trigger foods were pretzels, potato chips – and I would do it alone because I was so ashamed.

The treatment trials

Lisdexamfetamine's efficacy in treating BED was demonstrated in two clinical trials of 724 adults with moderate-to-severe binge eating disorder. The most recent study, [published in JAMA Psychiatry](#), tracked roughly 260 patients with BED for 14 weeks.

Participants were between 18 and 55-years-old and had no other psychiatric disorders (notably, no bulimia, anorexia, or ADHD). For 11 weeks, participants were divided into four treatment groups. One group received 30mg of lisdexamfetamine daily. Two other groups started with 30mg, but increased to 50mg or 70mg after three weeks. The fourth group received a placebo.

While only 21% of participants on placebo achieved a binge-free month when assessed in the final few weeks of the study, 50% of those on the highest dosage (70mg) experienced no binge-eating episodes during this period. Importantly, the safety parameters examined – including changes in blood pressure, heart rate, and other side-effects – were consistent with previous findings in adults taking lisdexamfetamine for ADHD.

How Vyvanse combats binge-eating

Current models suggest that ADHD is associated with [impaired neurotransmitter release](#) in several key brain areas. Most commonly associated with the disorder are reduced levels of dopamine in the

mesocorticolimbic projection, the brain system that [plays an important role in](#) reward, motivation, learning, memory and movement. Decreased norepinephrine synthesis in the locus coeruleus, a part of the brain stem associated with attention and arousal, and the prefrontal cortex, responsible for executive function, attention, and memory, are also common.

Lisdexamfetamine is a central nervous system stimulant prodrug, meaning that it's inactive when you ingest it, but then converts to an active form through normal metabolism. In this case, lisdexamfetamine is broken down into methylphenidate and amphetamine, which increase neurotransmitter activity in affected brain regions. Psychostimulants (such as this medication) show improvement of ADHD symptoms in [roughly 70% of individuals](#), including increased motivation to perform tasks and increased wakefulness.

[A recent meta-analysis](#) suggests that psychostimulants may also be useful for treating binge eating for three reasons. First, the drug's modulation of dopamine and norepinephrine may also impact eating behaviour and reward. Second, many stimulants are associated with weight loss. And third, large studies have shown a comorbid relationship between BED and ADHD in adolescents and adults.

Indeed, [research suggests](#) that binge eating is influenced by an abnormally strong response to the hedonic properties of food (or, in other words, why we find sweet and fatty foods so tasty). Using PET scans, [a 2011 study](#) by the US Department of Energy's Brookhaven National Laboratory reported that, compared to obese control, binge eaters show a significantly higher spike in dopamine levels in response to the sight or smell of their favourite foods.

During drug metabolism, the amphetamine component of lisdexamfetamine works to increase the release of both dopamine and

norepinephrine in key brain regions related to reward. In short, those with [binge eating disorder](#) may be able to get their "dopamine high" from lisdexamfetamine instead of food.

While lisdexamfetamine may be a promising option for patients with BED, it is not without risk. For one, the impulsivity associated with eating disorders may also [predispose one to substance abuse](#). For a subset of individuals with BED, a disappointing episode of binge-eating or otherwise stressful period of time may cause them to seek relief in medication. [Overdosing on stimulants](#) like lisdexamfetamine can result in restlessness, hallucinations, panic, flu-like symptoms and, in more extreme cases, irregular heartbeat and seizures.

Some individuals with eating disorders may also be more prone to certain cardiac problems and should not take a stimulant medication. Other patients may find that a psychological intervention, such as [cognitive behavioural therapy](#), is more effective than a drug.

Regardless, the use of an ADHD drug for treating a condition such as binge eating demonstrates one of the most fascinating aspects of medicine: although the biological mechanisms may be the same, physical and psychological problems can manifest themselves in very, very different ways.

This story is published courtesy of [The Conversation](#) (under Creative Commons-Attribution/No derivatives).

Source: The Conversation

Citation: How a drug for ADHD is being used to fight binge eating (2015, February 10) retrieved 26 April 2024 from <https://medicalxpress.com/news/2015-02-drug-adhd-binge.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.