A history of “food addiction”

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A chocolate inebriate has appeared. His addiction has been for three years, and his general health is much impaired, principally the digestion. His only thought night and day is how to get chocolate.

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Introduction

Concepts of diseases and mental disorders are not set in stone. References to drink madness can be found in ancient civilizations and terms such as drunkenness, intemperance, inebriety, dipsomania, or alcoholism were used in the 18th and 19th centuries to describe substance-related addictive disorders (White, 2000). While the fourth version of the Diagnostic and Statistical Manual of Mental Disorders (DSM) distinguished between substance abuse and substance dependence (American Psychiatric Association, 1994), this distinction has been repealed in its fifth revision. The DSM-5 now lists several substance use disorders and, for the first time, a non—substance-related addiction: gambling disorder (American Psychiatric Association, 2013).

Similar dynamics can be found in the field of eating disorders. Anorexia nervosa was the first eating disorder included in DSM-I in 1952 and appeared along pica and rumination in DSM-II in 1968 (Dell’Osso et al., 2016). Bulimia nervosa was added to the DSM-III in 1980. The DSM-IV yet again involved some slight changes in the categorization of eating disorders and now—in addition to changes made to the diagnostic criteria for anorexia and bulimia nervosa—the DSM-5 lists pica, rumination disorder, avoidant/restrictive food intake disorder, anorexia nervosa, bulimia nervosa, binge eating disorder, and other specified eating disorders (e.g., night eating syndrome).

In the light of high prevalence rates of obesity in the past decades, there is an increased interest if certain foods may have an addiction potential and if obese individuals—or at least a subgroup of them—can be considered “food-addicted.” In fact, it seems widely accepted that “food addiction” is a relatively new idea that was conceived in the past 20 years to explain the rising obesity prevalence (Davis, Edge, & Gold, 2014; Yau, Gottlieb, Krasna, & Potenza, 2014). Yet, is this...
alleged “new disorder” really a new concept in an attempt to explain why nowadays so many people are obese? This chapter will demonstrate that the concept of “food addiction” actually has a long history and did not arise from the obesity pandemic.

References to addiction in relation to food in the 19th century

In the scientific literature, references to addiction in relation to food have been made as early as the late 19th century. In the first journal of addiction medicine—the Journal of Inebriety (1876–1914)—food was routinely mentioned (Davis & Carter, 2014; Weiner & White, 2007). When describing “diseased cravings,” for example, Clouston (1890) referred to the stimulating effects of, craving for, and dependence on both food and alcohol (Table 1.1). Similarly, Crothers (1890a) cautions against some stimulating foods when describing how diseases in children with “alcoholic ancestors” should be treated (Table 1.1). Finally, a case of a “chocolate inebriate” is mentioned in the journal (Crothers, 1890b), describing his persistent craving for and preoccupation with chocolate as an addiction (Table 1.1).

A description of eating disorders in 1932

Mosche Wulff was a Soviet-Israeli physician and psychoanalyst who lived from 1878 to 1971. In 1932, he published an article in German in the International Journal of Psychoanalysis (Fig. 1.1), in which he describes case studies of five of his patients (Wulff, 1932). I refer interested readers to an article by Stunkard (1990) that provides a short biographical note on Moshe Wulff along with an English translation of some excerpts of his article. In a nutshell, Wulff’s case studies include the description of binge eating, including precedent food craving and subsequent feelings of guilt as well as aspects of emotional eating (eating more in response to negative affect, eating less when in a positive mood) and restrained eating (periods of restriction between eating binges). Importantly, he calls the symptomatology of all five cases “eating addiction” (German: Esssucht) throughout the article and provides an explanation for using this term at the end (Table 1.1).

“Food addiction” in the 1950s

Following up on Wulff’s observations, Hamburger (1951) noted the apparent parallels between recurrent binge eating episodes and gambling or drinking: “it is this eating pattern that most readily invites the label ‘addictive’” (Table 1.1). The American physician Theron Randolph (1906–95) first used the term “food addiction” in the scientific literature in 1956 (Table 1.1). In contrast to modern views that associate addiction with the consumption of highly processed foods (Ifland et al., 2015;
Table 1.1 Some references and quotes demonstrating the long history of the "food addiction" idea.

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<th>References</th>
<th>Quote</th>
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<td>Clouston (1890)</td>
<td>&quot;It is a fact that some foods are more stimulating to the brain cortex than others, e.g., strong beef-tea than milk, flesh than bread. […] If from childhood upwards the possessor of such a brain has depended on stimulating diet and drink for its restoration when exhausted, there is an intense and irresistible craving set up for such food and drink stimulants whenever there is fatigue. Such a brain has developed an affinity for them, and for such alone. Milk and farinaceous diet often become repugnant, and when taken do not satisfy the brain craving. Its owner becomes physiologically a flesh-eater and an alcohol-drinker.&quot; (p. 207)</td>
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<td>Crothers (1890a)</td>
<td>&quot;There is a special affinity for all nerve stimulants by those higher brain centers. Their use constantly interferes with the natural development of brain energy from food. Thus, alcohol, tea, coffee, and other substances have a peculiar delusive effect. […] The diet should not include meats of any kind, because of their stimulating character; while meats contain much food force, they act as stimulants to a brain already over stimulated and exhausted, and increase the peril of nervous disease. The pathological tendency of all these cases is to become alcohol-takers and meat-eaters, hence the diet should always be non-stimulating and farinaceous, and should be carried out with military regularity.&quot; (p. 285)</td>
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<td>Crothers (1890b)</td>
<td>&quot;A chocolate inebriate has appeared. His addiction has been for three years, and his general health is much impaired, principally the digestion. His only thought night and day is how to get chocolate.&quot; (p. 392)</td>
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<td>Wulff (1932)</td>
<td>&quot;I have used the term &quot;eating addiction&quot; above without justifying why I deem it important to call it an &quot;addiction&quot; and not, for example, a compulsion. I believe that the nature of this compulsive eating can be best characterized by the term addiction. How do addiction and compulsion differ from each other except regarding the different manners through which they are experienced? […] Another characteristic of a compulsion is the fact that its suppression produces anxiety while suppression of a compulsive, addiction-related urge increases the tension of the addictive desire (if withdrawal symptoms do not complicate the picture)—just as it was observed in the cases described here with regard to eating.&quot; (p. 299)</td>
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<td>Hamburger (1951)</td>
<td>&quot;A number of authors have described people who show extreme preoccupation with food and weight, who episodically consume enormous amounts of food, in short periods of time in an ‘orgiastic’ manner (episodes varying in frequency from more than once a day to once every few weeks), and who experience guilt, shame, depression and self-condemnation following ‘binges.’ The parallel with apparently ‘compulsive’ patterns of gambling or drinking is immediately striking. Indeed it is this eating pattern that most readily invites the label ‘addictive’.&quot; (p. 487)</td>
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| Randolph (1956) | "Food addiction—a specific adaptation to one or more regularly consumed foods to which a person is highly sensitive—produces a
Schulte, Avena, & Gearhardt, 2015), however, he noted that “most often involved are corn, wheat, coffee, milk, eggs, potatoes, and other frequently eaten foods” (Randaloph, 1956, p. 221). Although “food addiction” did not appear in other scientific articles around this time, famous psychiatrist Albert J. Stunkard (1922–2014) noted during a panel discussion in 1959 that the term “food addiction” was widely used back then (Table 1.1; Hinkle, Knowles, Fischer, & Stunkard, 1959).

### Table 1.1 Some references and quotes demonstrating the long history of the “food addiction” idea.—cont’d

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| Hinkle et al. (1959) | “One of the most common and difficult problems we face is that of food addiction, both in the genesis of diabetes and in its treatment. Are there physiological factors involved in this mechanism or is it all psychological? What is its relation to alcohol addiction and addiction to narcotics? [...]
Is that a good question, because these terms “food addiction” and “compulsive eating” are widely used and widely misunderstood.” (p. 377) |
| Bell (1960)        | “Social custom and occupational contact, as well as medical treatment and physiological need, can be responsible for the introduction of a person to the chemicals involved in addiction. Food addiction is the only one in which the chemicals and the person come together initially out of physiological necessity.” (p. 1348) |
| Bell (1965)        | “It is important for the physician to explain that an uncontrollable need for a drug or for alcohol is not planned; that initially these agents were used to produce temporary improvement in wellbeing; and that addiction is a very common type of human disability. It is helpful to compare tobacco and food addiction to alcohol and drug addiction, and to remove as much of the guilt and shame as possible at the first interview. The physician has a good chance of initiating motivation if at the end of the first interview the patient feels that he does not need to down-grade himself in order to accept his illness.” (p. 230) |

*This quote is from an editorial for which authorship was not specified and, thus, the editor (T.D. Crothers) is indicated as author here.

b This article is in German and the quotes have been translated by the author of this chapter. An English translation of some excerpts of this article can be found in Stunkard (1990).

Schulte, Avena, & Gearhardt, 2015), however, he noted that “most often involved are corn, wheat, coffee, milk, eggs, potatoes, and other frequently eaten foods” (Randaloph, 1956, p. 221). Although “food addiction” did not appear in other scientific articles around this time, famous psychiatrist Albert J. Stunkard (1922–2014) noted during a panel discussion in 1959 that the term “food addiction” was widely used back then (Table 1.1; Hinkle, Knowles, Fischer, & Stunkard, 1959).

### Varying themes in the second half of the 20th century

In 1960, Overeaters Anonymous was founded. This self-help organization is based on the 12-step program of Alcoholics Anonymous and, accordingly, uses an addiction framework for overeating. For example, in contrast to cognitive behavioral therapy, which emphasizes flexible food choices with no forbidden foods (Wilson, 2010), Overeaters Anonymous advocates abstinence from certain foods (Russell-Mayhew, von Ranson, & Masson, 2010). Yet, the term “food addiction”
was only occasionally mentioned in scientific articles in the 1960s and 1970s, primarily in the context of obesity (Table 1.1; Bell, 1960, 1965; Clemis, Shambaugh, & Derlacki, 1966; Swanson & Dinello, 1970; Thorner, 1970).

Notably, however, some cases of bulimia nervosa or binge/purge-subtype anorexia nervosa were described as an addiction in these decades as well (Vander-eycken, 1994). For example, Ziolko (1966) presents a case of “hyperorexia,” which he denotes—similar to Wulff (1932)—as “eating addiction” (i.e., *Esssucht* in German). In a report about an expert group discussion about overeating and vomiting, Garrow (1976) notes that “one group of subjects with chronic anorexia nervosa exemplify many aspects of addiction; they habitually/constantly ingest and vomit food in large quantities” (p. 407).

In the 1980s, the excessive food restriction displayed by individuals with anorexia nervosa was mentioned for the first time in the context of addiction (Scott, 1983). Similarly, Szmukler and Tantam (1984) described anorexia nervosa as an addiction—what they called *starvation dependence*. For example, they note that “patients with anorexia nervosa are dependent on the psychological and possibly physiological effects of starvation. Increased weight loss results from tolerance to starvation necessitating greater restriction of food to obtain the desired effect, and the later development of unpleasant ‘withdrawal’ symptoms on eating.” (p. 309). Finally, Marrazzi et al. (Marrazzi et al., 1990; Marrazzi & Luby, 1986) compared anorexic phenomenology with addictive states in their auto-addiction opioid model of chronic anorexia nervosa.
Another approach stemming from an addiction perspective on eating was the examination of addictive personality in individuals with anorexia nervosa, bulimia nervosa, or obesity (Davis & Claridge, 1998; Feldman & Eysenck, 1986; Kayloe, 1993; Leon, Eckert, Teed, & Buchwald, 1979). Several studies compared whether individuals with anorexia nervosa, bulimia nervosa, or obesity scored higher than healthy controls and similar to individuals with tobacco use, alcohol use, or gambling disorder on certain addiction personality questionnaires (de Silva & Eysenck, 1987; Hatsukami, Owen, Pyle, & Mitchell, 1982; Kagan & Albertson, 1986; Leon, Kolotkin, & Korgeski, 1979).

In the 1990s, a particular interest emerged on addiction-like consumption of chocolate. Characteristics of chocolate such as its macronutrient composition, sensory properties, and ingredients such as caffeine and theobromine were discussed as contributors to its addictive-like nature (Bruinsma & Taren, 1999; Patterson, 1993; Rozin, Levine, & Stoess, 1991). Some studies investigated self-identified “chocolate addicts” (Hetherington & Macdiarmid, 1993; Macdiarmid & Hetherington, 1995; Tuomisto et al., 1999) or examined associations between “chocolate addiction” and other addictive behaviors (Greenberg, Lewis, & Dodd, 1999; Rozin & Stoess, 1993).

Besides these themes, a variety of different topics were covered in one or few single articles in the 1980s and 1990s. These include discussions of the role of endorphins in terms of an addictive response in obesity (Gold & Sternbach, 1984; Wise, 1981), substance abuse as a metaphor in the treatment of bulimia nervosa (Slive & Young, 1986), a “foodaholics” group treatment program (Stoltz, 1984), and some unusual case studies of addiction-like carrot consumption (Kaplan, 1996; Černý, Černý, 1992). Finally, the first critical reviews were published, which scrutinized adopting an addiction framework in the treatment of eating disorders (Bemis, 1985) and questioned the overall “food addiction” approach based on conceptual and physiological considerations (Rogers & Smit, 2000; Vandereycken, 1990; Wilson, 1991, 2000).

**Increased popularity in the 21st century**

Increased interest in “food addiction” in the early 2000s was largely driven by brain imaging studies in humans—particularly in individuals with obesity or binge eating disorder (Volkow, Wang, Fowler, & Telang, 2008)—and by animal models of addiction-like sugar intake (Avena, Rada, & Hoebel, 2008). Besides these lines of research, numerous review articles were published that discussed behavioral, cognitive, and neural parallels between obesity or binge eating disorder and substance dependence and examined whether the diagnostic criteria for substance dependence can be applied to food and eating (e.g., Barry, Clarke, & Petry, 2009; Corsica & Pelchat, 2010; Davis & Carter, 2009; Gearhardt, Corbin, & Brownell, 2009a; Ifland et al., 2009; Pelchat, 2009; Thornley, McRobbie, Eyles, Walker, & Simmons, 2008).

Correspondingly, several approaches were developed to measure addiction-like eating in humans based on translating substance dependence criteria to food and
eating (Meule, 2011). For example, Cassin and von Ranson (2007) replaced references to *substance* by *binge eating* in the substance dependence module of the structured clinical interview for DSM-IV axis I disorders to “diagnose” addiction-like eating in individuals with binge eating disorder. Relatedly, Gearhardt, Corbin, and Brownell (2009b) developed the Yale Food Addiction Scale by adapting DSM-IV substance dependence criteria to food and eating. Scoring of this self-report questionnaire allows for a dichotomous classification of the presence or absence of “food addiction.” It may be because of this uniqueness that the scale turned out to be widely used in the years that followed (Meule & Gearhardt, 2014).

**Current developments**

In 2013, gambling disorder was the first behavioral addiction that was added as an addictive disorder in addition to substance use disorders in DSM-5. Reflecting this nosological change, researchers have proposed that framing addiction-like eating as a behavioral addiction may be more appropriate than framing it as a substance-related disorder (Hebebrand et al., 2014). This approach has intuitive appeal and, at first glance, seems to resolve some controversies that are inherent in the substance-based “food addiction” approach. Yet, the “eating addiction” approach may create more problems than it solves. For example, efforts have been made to develop self-report measures for capturing “eating addiction” (Ruddock, Christiansen, Halford, & Hardman, 2017). Yet, “eating addiction” may be in fact even harder to distinguish than “food addiction” from existing concepts such as binge eating—related disorders (Schulte, Potenza, & Gearhardt, 2018; Vainik & Meule, 2018).

The current state of affairs can be broken down into three different views:

1. certain foods are regarded as addictive substance(s), and, thus, so-called “food addiction” represents a substance-related addictive disorder (ffland et al., 2015; Schulte, Potenza, & Gearhardt, 2017),
2. it is not possible to identify a specific substance in foods that is addictive (similar to nicotine in tobacco, ethanol in alcoholic beverages, tetrahydrocannabinol in cannabis, etc.), and, thus, so-called “eating addiction” represents a behavioral addictive disorder (Hebebrand et al., 2014; Ruddock et al., 2017),
3. neither “food addiction” nor “eating addiction” represent valid concepts or—even if they are—they are not necessary (Finlayson, 2017; Rogers, 2017; Ziauddeen & Fletcher, 2013).

While most writings on this topic clearly take up one of these three positions, it has also been argued that the addiction perspective on eating requires a more nuanced view (Fletcher & Kenny, 2018). For example, Lacroix, Tavares, and von Ranson (2018) emphasize that alternative conceptualizations of addictive-like eating may be overlooked when the discussion is framed as a dichotomous debate between food and eating addiction models. Such alternative views include, for example,
considering compulsivity as a transdiagnostic construct in both addiction and pathological overeating (Moore, Sabino, Koob, & Cottone, 2017).

Conclusions

“Food addiction” is not a new idea that emerged in the 21st century because of the obesity pandemic. Instead, researchers have discussed for many decades whether humans can be addicted to certain foods and whether certain eating behaviors represent an addictive behavior. The history of “food addiction” research involves different perspectives, which range from mentioning food in the context of addiction in the late 19th century, describing binge eating as “eating addiction” in the 1930s, establishing the term “food addiction” in the 1950s, acknowledging the addiction-like character of binge eating in individuals with bulimia and binge/purge-subtype anorexia nervosa in the 1960 and 1970s to characterizing the self-starvation of individuals with anorexia nervosa as an addiction in the 1980s, and many more. Thus, research on “food addiction” encompasses a long history with dynamically changing but recurring themes. These include the types of food involved (e.g., chocolate and other foods), discussions about the appropriateness of a “food addiction” versus “eating addiction” rationale, and which type of individuals are involved (e.g., individuals with anorexia nervosa, bulimia nervosa, binge eating disorder, and/or obesity).

In spite of its long history, the “food addiction” versus “eating addiction” versus “not-an-addiction” discussion has developed to a lively debate in recent years. To move the field forward, researchers need to generate—and agree upon—testable predictions, which may include neural mechanisms (Fletcher & Kenny, 2018) or whether the construct of addictive-like eating holds incremental clinical utility over and above existing eating disorder diagnoses (Lacroix et al., 2018). Furthermore, providing an addiction framework in the prevention and treatment of eating disorders and obesity will likely be helpful in some instances but may be unnecessary or even counterproductive in others (Meule, 2019). Therefore, future studies need to systematically examine under which circumstances and for whom an addiction perspective on eating is beneficial for normalizing food intake and reduce eating-related distress.

References


