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## The Reclassification of Sugar as a Drug

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“If sugar were to be put on the market for the first time today, it would probably be difficult to get it past the FDA.” Kathleen DesMaisons  
*Potatoes not Prozac*

Sugar is traditionally classified as a food “used to improve the palatability of many foods” (ISMA, 2005). As such, it is the “cheapest instant source of energy” (ISMA, 2005) containing no nutritional value. Recent research, however, has proven that “under select dietary circumstances, sugar can have effects similar to a drug of abuse”(Rada, Avena & Hoebel, 2005). There are other health risks as well: as Hunt (1999, p. 18) argues, “The average American consumes his weight in sugar every year (152 pounds),” leading to complications such as cavities, mood swings, and weight gain, or to more serious complications such as diabetes. <sup>1</sup> As a result, it is increasingly difficult to ignore the powerful negative affects sugar may have on the physiology and psychology of consumers. In this paper, I will argue that sugar in fact has many drug-like properties that need to be taken into consideration when classifying this substance purely as a food in order to understand the benefits and dangers of sugar to our minds and bodies.

A drug is defined as “any absorbed substance that changes or enhances

any physical or psychological function in the body” (Liska, 1986). For example, as Weil and Rosen state, “Most people would agree that heroin is a drug. It is a white powder that produces striking changes in the body and mind in tiny doses. [...] Sugar is also a white powder that strongly affects the body, and some experts say it affects mental function and mood as well” (1983, p. 9). But the one substance is highly stigmatized in North American culture, whereas the other is highly accepted. Why then do we make a distinction between the two? Often it is easy to make a distinction between good and bad drugs. For instance, we tend to label prescriptive drugs as being good drugs, and drugs taken for the sole purpose of pleasure, such as heroin and alcohol, as bad drugs (Weil and Rosen, 1983, p. 9-11). This qualitative distinction is not based on scientific or medical reasoning, but rather on arbitrary religious and cultural beliefs or political and historical factors.<sup>2</sup> “The difference between Prozac and Ecstasy is mostly a matter of marketing” (South, 1999, p. 3).

Things are not much clearer when it comes to the classification of sugar. For example, there is a wide range of slang and jargon that implicates sugar in the language of drug use. In India, for example, “street heroin is commonly known as brown sugar” (Vaswani, 2003, p. 79). Other euphemisms are also common: *sugar* is used to refer to “powdered drugs in general”; a *sugar cube* refers to “the hallucinogenic drug L.S.D.”; a *sugar daddy* is used to refer to “a doctor who sells drugs to addicts”; a *sugar down* is used to refer to “the dilution of powdered drugs with sugar; a *sugar habit* is “a light drug addiction”; *sugar lump cubes* are “cubes of morphine the size of sugar lumps”; and finally, *sugar weed* is “marijuana which has been compressed into a brick with sugar or honey” (Spears, 1986 p. 493).

Perhaps even more compelling than this cultural evidence is the physiological and psychological evidence that sugar acts on the brain much like licit and illicit drugs do. Alcoholics might spend most of their day thinking about alcohol, planning elaborate schemes to get their hands on a drink. They may also not be capable of having only a few drinks, but rather need to ingest massive quantities of the drug in order to feel good. Sugar junkies, similarly, will often have plans as to how to get their next fix and once they start eating cookies or doughnuts,<sup>3</sup> they are often compelled to eat more of these foods than the average person in order to satisfy their appetites (Mumey and Hatcher, 1987, p. 106). “Addiction is characterized by a pattern of compulsive, uncontrollable behaviours that occur at the expense of most other activities and intensify with repeated cycles” (Avena and Lone, 2005, p. 359).

In the same way that drug addicts experience withdrawal symptoms when they quit using, sugar addicts can also experience withdrawal from their drug. “There is no question that withdrawal from sugar can be as painful as withdrawal from alcohol. It has been described by those who have undergone both as ‘worse’” (Mumey and Hatcher, 1987, p. 106). These sugar withdrawal symptoms are no less imaginary than the ones produced by heroin or caffeine: they are the product of brain chemistry (Avena and Long, 2005, p. 359).

Research has shown that “intermittent sugar availability (12 hours/day) produces signs of dependence in rats, including escalation of intake, mu-opioid and dopamine receptor changes, behavioral and neurochemical indices of withdrawal and cross-sensitization with amphetamine” (Avena and Long, 2005, p. 359).

Perhaps here we see most clearly how powerfully sugar acts upon the mind and body, behaving more like a drug than a mere food or food additive. Sugar “is a depressant and, consumed in large amounts, it affects the opiate receptor sites in the central nervous system” (Mumey and Hatcher, 1987, p. 104). When ingested, sugar is having much more of an effect on the chemistry of the body and brain than simply providing energy to both. “One of the most cited studies, by University of Washington researcher Adam Brewnowski, found that women who were given a drug that blocks opiate receptors consume less sweet, high-fat foods – but only if they were bulimic. [...] The opiate blocker ‘works, we see it,’ he says. ‘But only in a person whose system is disturbed’” (Fisher, 2005, p. 63). This may prove that sugar is therefore acting on the opiate receptors in the brain like certain drugs do. Because this experiment only worked on bulimics, it is possible that, just like drug addicts, “one does not tend to get addicted to a substance unless there was an imbalance in the system prior to initiation to the drug” (McDonald, 2005).

Presently, studies are being done to see how sugar and other foods affect the brain. “In a lab at Brookhaven National Laboratory on Long Island, Gene-Jack Wang is injecting overeaters with a radioactive sugar solution and putting them into a positron – emissions tomography machine to see how their brains react to food. [...] he will see that the test subject's striatum [...] has fewer dopamine receptors than the striatum of someone with normal eating habits [...] Wang has also shown that drug addicts have a similar shortage of dopamine receptors” (Fisher, 2005, p. 63) By simple observation, it is easy to note that people who overeat tend to mainly consume sugary or fatty foods. Some of the most research done up until today suggests that the pleasure that these foods provide is unmatched by any other food group (Fisher, 2005, p. 66) If we could one day prove that sugar is more of a drug than a food, this could have serious implications on food companies that use high doses of this substance in their products. Wang warns that food companies would have to “brace for a wave of tobacco – style litigation over the nation's obesity problem. If lawyers can show that food has addictive properties, they can argue that overeating isn't a choice but a compulsion. If they can trace the compulsion to specific ingredients such as fat or high-fructose corn syrup, they might have the evidentiary equivalent of nicotine – a substance manufacturers may have manipulated to hook their customers on food” (Fisher, 2005, p. 63) It is hard not to hypothesize that food companies may one day go to great lengths to hire researchers of their own in order to prove evidentiary evidence of the opposite. These results, of course, would more than likely be tampered with in order to protect the health of their wealth instead of the health of a nation.

## Endnotes

1. "Complications from diabetes are intense and serious. They include diabetic food ulcers, circulatory abnormalities, silent heart attacks, and heart disease. [...] diabetes in adults is usually an outcome of carbohydrate addiction" (Braverman 1992, p. 55-56).
2. Erickson and Smart (1980) discuss the "drug problem" in Western culture, noting how narcotic use in the first half of the twentieth century was associated with "a negatively stereotyped racial group (the Asiatics, and to a lesser extent, unconventional low-status whites)" (p. 92).
3. "As in alcoholic drinking, compulsive eaters can experience 'blackouts,' losing their sense of time and surroundings while gorging. When they realise that they have lost control, panic sets in and they want desperately to be back in control of themselves. [...] The substance we are talking about now is food, but the behaviour it is provoking is strikingly similar to that of alcohol abuse" (Mumey and Hatcher, 1987, p. 90-91).

## References

- Avena, M. N. & Long, A. K. & Hoebel, G. B. (2005). Sugar-dependant rats show enhanced responding for sugar after abstinence: Evidence of a sugar deprivation effect. *Physiology and Behaviour*, 84, 359-362.
- Braverman, E. (1992). Diabetes. *Total Health*, 14, 55.
- DesMaisons, K. (1998). *Potatoes not prozac*. New York: Fireside.
- Einstein, S. (1975). *Beyond drugs*. New York: Pergamon Press.
- Einstein, S. (1980). *The community's response to drug use*. New York: Pergamon Press.
- Fisher, D. (2005). Food on the Brain. *Science & Law*, 175, 63-67.
- Hunt, P. (1999). Quit! *Vegetarian Times*, 257, 18.
- Indian Sugar Mills Association. (2005). *World Sugar Market Review*. [\[www.indiansugar.com/briefings/WS ... \]](http://www.indiansugar.com/briefings/WS...)
- Liska, K. (1986). *Drugs & the human body: With implications for society*. New York: Macmillan Publishing.
- McDonald, R. (2005). University of Lethbridge. [\[people.uleth.ca/~r.mcdonald/PSYC ... \]](http://people.uleth.ca/~r.mcdonald/PSYC...)
- Mumey, J., & Hatcher, A. (1987). *Good food for a sober life*. Chicago: Contemporary Books.
- Rada, P. & Avena, M. N. & Hoebel, G. B. (2005). Daily bingeing on sugar repeatedly releases dopamine in the accumbens shell. *Neuroscience*, 134, 737-744.
- South, N. (1999). *Drugs: Cultures, controls & everyday life*. London: Sage

Publications.

Spears, A. R. (1986). *The slang and jargon of drugs and drink*. Metuchen: The Scarecrow Press.

Vaswani, M. (2003). Emerging trend of drug abuse pattern in India: The role of urine testing. *Addictive Disorders & their treatment*. 3, 79.

Weil, A., & Rosen, W. (1983). *Chocolate to morphine: Understanding mind-active drugs*. Boston : Houghton Mifflin.

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