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- For every 4 kg/m² increase in BMI, observational estimates suggested a 26% increase in odds for IHD.
- Causal estimates suggested a 52% increase.
- These data add evidence to support a causal link between increased BMI and IHD risk, though the mechanism may ultimately be through intermediate factors like hypertension, dyslipidemia, and T2 diabetes.
- This work has important policy implications for public health, given the continuous nature of the BMI-IHD association and the modifiable nature of BMI.

Nordstgaard BG, Palmer TM, Benn M, Zacho J, Tybjaerg-Hansen A, et al. (2012) The Effect of Elevated Body Mass Index on Ischemic Heart Disease Risk: Causal Estimates from a Mendelian Randomisation Approach. *PLoS Med* 9(5): e1001212. doi:10.1371/journal.pmed.1001212

Yale Hosts Historic Conference on Food and Addiction

- New Haven, Conn. — In what is believed to be the first meeting of its kind, Yale University is convening nearly 40 experts on nutrition, obesity, and addiction tonight and Tuesday to discuss the controversial topic of food and addiction.
- Nora Volkow, MD, director of the National Institute on Drug Abuse, will be the keynote speaker Monday evening at the private meeting in New Haven. "It is important that we study the reasons that people behave in unhealthy ways even when they are aware of potentially devastating consequences," Volkow said. "We believe we can learn a lot about obesity by looking at what we know about the science of drug addiction. In this meeting we will be discussing the commonalities in the brain's reward mechanisms related to compulsive eating as well as drug use for non-medical reasons."
- Among the topics of discussion for the meeting: MRI research and other work that shows strong similarities in ways drugs and certain foods affect the brain; the relationship between eating and reward systems in the brain; psychological similarities between food cravings and cravings for drugs, and the implications of this work for government policy, clinical intervention, and the law.
- Although terms such as "chocoholic" and "carbohydrate addict" are prevalent in popular culture, there is little scientific consensus about food as an addiction, said Yale Psychology Professor Kelly Brownell, who is co-chair of the meeting.
- "Everything changes if food is found to have addictive properties, especially the legal and legislative landscape around marketing foods to children," said Brownell, director of the Rudd Center for Food Policy and Obesity at Yale, which is hosting the meeting. "People often use the language of addiction to explain their relationship with food cravings, withdrawal, irresistible impulses—it is all there."
- Co-chair Mark Gold of the University of Florida, who will address the meeting Tuesday, said that in the past, addiction was defined by tolerance and withdrawal. "After our work and that of others on cocaine, it was clear that addiction was more like a pathological, often fatal attraction," Gold said. "The definition of addiction was changed and gambling and sex addiction were considered addictions. Overeating and obesity are candidates for Addictive Disease and such a hypothesis is both testable in humans and can produce novel approaches and treatments for a major public health problem."
- Gold said that food, especially highly palatable food, can produce the same effects as drugs of abuse. "It is common for people to eat more than they intend despite dire consequences," he said. "Failed diets and attempts to control overeating, preoccupation with food and eating, shame, anger, and guilt look like traditional addictions."



Yale Office of Public Affairs & Communications. Yale Hosts Historic Conference on Food and Addiction. <http://opa.yale.edu/news/article.aspx?tid=15814>. July 9, 2007. Accessed Sept. 20, 2011.

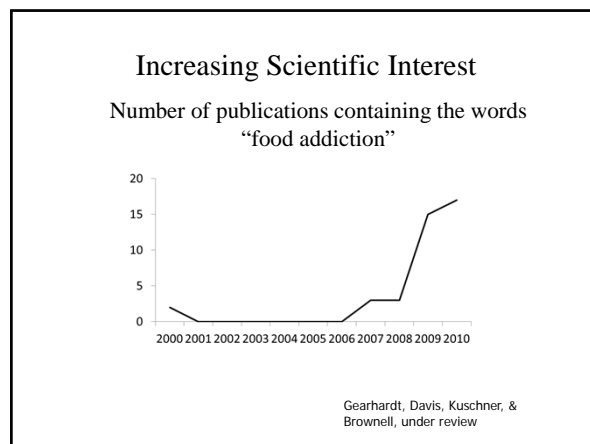
Food and Addiction

A Comprehensive Handbook
Kelly D. Brownell, Mark S. Gold
\$115.00
Available in Hardback, Aug 2012

- ISBN13: 9780199738168
- ISBN10: 0199738165
- Assembles leading scientists and policy makers from fields such as nutrition, addiction, psychology, epidemiology, and public health to explore and analyze the scientific evidence for the addictive properties of food.


EVOLUTION OF A THEORY

<p>1987</p>  <p>Psychiatry Research, 24, 195-199 Jeffrey M. Jonas and Mark S. Gold</p>	<p>1994</p>  <p>ASAM – MARK S. GOLD</p>	<p>2003</p>  <p>GUEST EDITOR: MARK S. GOLD</p>	<p>2004</p>  <p>EDITOR: MARK S. GOLD</p>
	<p>2009</p> <p>SPECIAL ISSUE: FOOD ADDICTION EDITOR: Mark S. Gold</p>		<p>2010</p> <p>Current Opinion in Clinical Nutrition and Metabolic Care; 13:359-365 Daniel M. Blumenthal and Mark S. Gold NEUROBIOLOGY OF FOOD ADDICTION</p>

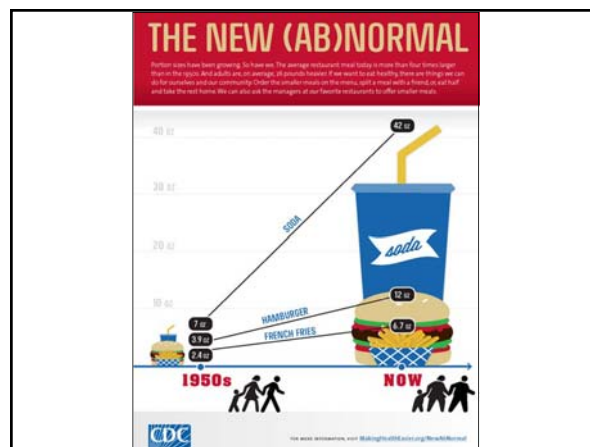


From bedside to bench and back again: A 30-year saga.

Gold MS. *Physiol Behav.* 2011 Jul 25;104(1):157-61. PMID: 21530563.



- Since the 1970's through observation and experience, drugs of abuse and the drive for food appeared to be quite related.
- As pioneered by Bart Hoebel, food can become an object of desire and act in most respects as a drug of abuse.
- The Gold lab is investigating working models for pathological attachment to eating and food addiction.



The New York Times Magazine

The Extraordinary Science of Addictive Junk Food



David Campbell for The New York Times

http://www.nytimes.com/2013/02/24/magazine/the-extraordinary-science-of-junk-food.html?pagewanted=all&_r=0

Bloomberg

Fatty Foods as Addictive as Cocaine in Studies

By Robert Langreth and Duane D. Stanford - Nov 2, 2011 12:01 AM ET/Nov 02 04:01:00 GMT 2011

Food addiction research may reinvigorate the search for effective obesity drugs, said Mark Gold, who chairs the psychiatry department at the University of Florida in Gainesville. Gold said the treatments he is working on seek to alter food preferences without suppressing overall appetite. We are trying to develop treatments that interfere with pathological food preferences, he said. Let's say you are addicted to ice cream, you might come up with a treatment that blocked your interest in ice cream, but doesn't affect your interest in meat.

<http://www.bloomberg.com/news/2011-11-02/fatty-foods-addictive-as-cocaine-in-growing-body-of-science.html>

Wall Street Journal

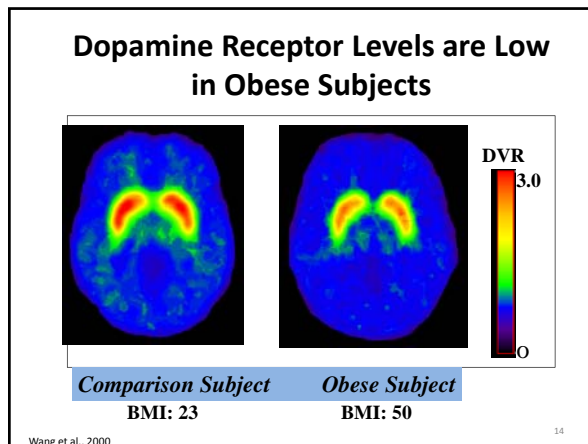
Food May Be Addicting for Some

By KEVIN HELLIKER
April 5th

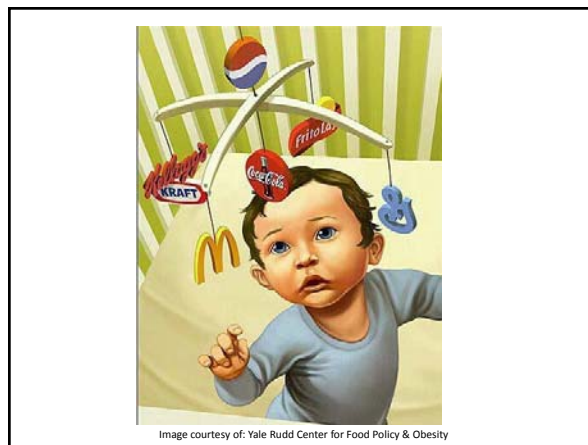
A new study suggests that people who struggle to say no to chocolate, french fries or other junk food suffer from something more insidious than lack of willpower: They may actually have an addiction.

Source: WSJ
http://online.wsj.com/article/SB10001424052748703712504576243192495912186.html?mod=WSJ_hp_MIDDLENexttoWhatsNewsThird

13



4.2 gms. = 1 teaspoon of sugar, so this looks like 1 cube is about the same!

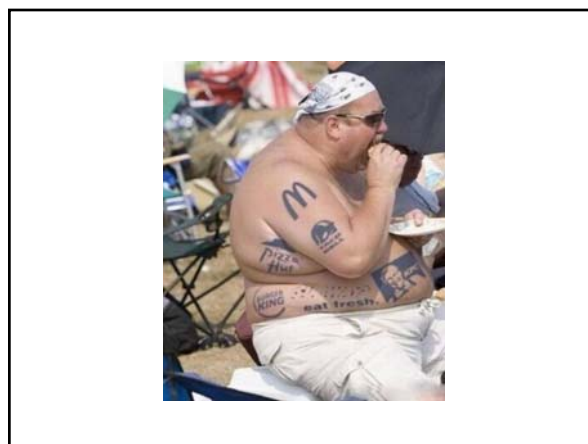


For a better start in life
start COLA earlier!

How soon is too soon?

Nix some tough. Laboratory tests over the last few years have proven that babies who start drinking soda during that early formative period have a much higher chance of gaining acceptance and "biting in" during those awkward pre-teen and teen years. So, do yourself a favor. Do your child a favor. Start them on a strict regimen of sodas and other sugary, carbonated beverages right now, for a lifetime of guaranteed happiness.

The Soda Pop Board of America
1015 W. 34th Ave. - Chicago, IL



Current "Treatment" Strategies for Obesity

- Blame the patient
- Diet
- Tapes, books, classes
- Exercise
- Detoxification and abstinence
- Take drugs of abuse or related prescribed medications
- Surgery
- All the above...and again



WebMD

Eat Less

Eat Less
Guidelines call for most Americans to cut back on certain rich, fattening foods and ingredients. Americans get nearly 800 calories a day from just two problematic nutrients: solid fats and added sugars ("SoFAS"). We're advised to limit those, as well as fast foods, refined grains, saturated fat, and trans fats. Most people eat too much sodium (salt), which is linked to high blood pressure, a risk factor for heart and kidney disease.

Nutrition Plate Unveiled, Replacing Food Pyramid



Variety and Hyperpalatability in Food Choices: Good or Bad?



- Diversity in food choices may be associated with promoting excess food intake and increased BMI
- Inhibitory cognitive control over desire to eat is suppressed in women, but not in men
- Long term habituation to palatable food can occur and is important in our understanding of regulating food intake

Avena NM, Gold MS. Variety and hyperpalatability: are they promoting addictive overeating? *Am J Clin Nutr*. 2011 Jun 29; [Epub ahead of print] Doi: 10.3945/ajcn.111.020164.

Should Sugar be Controlled Like Alcohol?



- There are 30% more obese people in the world than malnourished people.
- Over past 50 years, sugar consumption has tripled worldwide.
- Sugar consumption is linked to rise in non-communicable disease.
- Sugar's effects on the body can be similar to those of alcohol.
- Regulation could include tax, limiting sales during school hours and placing age limits on purchase.

Lustig RH, Schmidt LA, Brindis CD. Public Health: The toxic truth about sugar. *Nature*. 2012; 482(7383):27-29.

Moderate Exercise Yields Big Benefits

Moderately strenuous exercise, about 30 minutes a day, can lead to enormous benefits in terms of your mood, health, weight and the ability to live an independent and fulfilling life. The exercise doesn't need to be athletic or difficult. Studies have shown that simply walking at a brisk pace for 30 minutes or more on most days can lead to significant health improvements. Add simple strengthening exercises two or three times a week to up benefits.

Lower blood pressure: A reduction of 5 to 10 millimeters of mercury (mm Hg) is possible. In some cases, that's enough to prevent or reduce the need for blood pressure medications.

Improve cholesterol: Exercise often increases the concentration of high-density lipoprotein (HDL or "good" cholesterol in the blood), especially when accompanied by weight loss. Exercise also helps reduce triglyceride levels.

Prevent or manage type 2 diabetes: Exercise helps insulin work better, lowering blood sugar.

Manage weight: Coupling exercise with a healthy diet is the best way to shed fat and maintain a healthier body composition.

Prevent osteoporosis: Exercise may increase bone density and protect against bone mass decline, especially if weight-bearing activities are involved.

Prevent cancer: Exercise has been shown to strengthen the immune system, improve circulation, reduce body fat and speed digestion. Each has a role in preventing cancer, particularly cancers of the colon, prostate, uterine lining and breast.

Maintain mental well being: Exercise may help reduce stress, improve mild-to-moderate depression and anxiety, improve sleep and boost moods.

Increase energy and stamina: A lack of energy often results from inactivity, not age.

Mayo Clinic
200 First St. SW
Rochester, MN 55902 <http://www.mayoclinic.com>

Exercise for the overweight and obese.

Gold J, Gold MS. *Curr Pharm Des.* 2011; 17(12):1193-7. PMID: 21492089.



- We need to consume less in a modern life of desk and computer work, driving and even internet shopping.
- We are driven and reinforced to consume and easily fall prey to television and other cues and messages driving this relationship to eating.
- New treatments may be developed by increasing exercise adherence and increasing the reinforcing value or power of exercise itself.

IOM Committee Report on Accelerating Progress in Obesity Prevention



Goal 1: Make physical activity an integral and routine part of life (4 strategies)

Goal 2: Create food and beverage environments that ensure that healthy food and beverage options are the routine, easy choice (5 strategies)

Goal 3: Transform messages about physical activity & nutrition (4 strategies)

Goal 4: Expand the role of health care providers, insurers, and employers in obesity prevention (4 strategies)

Goal 5: Make schools a national focal point for obesity prevention (3 strategies)

IOM (Institute of Medicine). 2012. *Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation.* Washington, DC: The National Academies Press.



28

CNN.com

Why isn't there a safe weight-loss pill?

By Madison Park, CNN
April 15, 2011 1:58 p.m. EDT

Obesity treatment "is high priority" among drug research, said Dr. Mark Gold, chair of psychiatry at the University of Florida, who focuses on addiction and eating habits. They've failed most of the time before. Our brains crave calories to store for hard times, said Gold. Unfortunately for us, that worked very well when we had little food and we needed incentive to hunt. Right now, with abundant food, it's very easy to get food and fast food, he said. The global obesity epidemic is due to food being widely available. The food has evolved, but our brains haven't really changed from the time that we had to hunt and grow our own food. Many of our brains' pathways are linked to appetite, he said. It's hard to create a drug to suppress appetite when there could be many unknown factors involved.

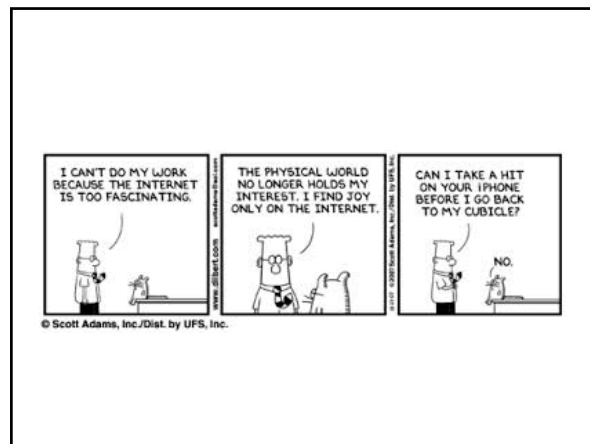
History of Antiobesity Medications Now We Understand Why!

Drug	FDA approval date	FDA withdrawal date
Phentermine	5/1959	
Fenfluramine	6/1973	9/1997
Dexfenfluramine	4/1996	9/1997
Orlistat	4/1999	
Sibutramine	11/1997	10/2010
Rimonabant	6/2006 ^a	10/2008
Diethylpropion	8/1959	
Benzphetamine	10/1960	
Phendimetrazine	9/1982	

FDA, US Food and Drug Administration. ^aThe drug (Rimonabant) was not approved by the FDA in the United States. It was an approved drug on the market in Europe, but has since been recalled.

Powell AG, Apovian CM, Aronne LJ. *Clin Pharmacol Ther.* 2011 Jul;90(1):40-51

30



Process and Substance Addictions

What do they have in common?

- Gambling
- Sex
- Food
- Work
- Exercise
- Internet
- Alcohol
- Tobacco
- Marijuana
- Prescriptions
- Cocaine
- Methamphetamines
- Heroin
- Etc., etc., etc.

1. They are characterized by a drive for and pathological attachment to the activity/drug
2. Loss of control, lying about, more and more time spent on thinking, getting, or doing
3. Continued use despite serious consequences

Gold MS, Merlo LJ, Brujinzeel AW, Roytberg A, Herkov MI. Addiction to Drugs, Food, Gambling, Sex, and Technology: Shared Causal Mechanisms? In: Cottler LB, editor. Mental Health in Public Health: The Next 100 Years. New York: Oxford Press; 2011. p118-48.

Pathological Gambling, Food Addiction & Sexual Compulsivities in Parkinson's Disease: A Review

- Prevalence is 3.4% to 6% in treated Parkinson's, which is higher than background population
- Discussion of evidence indicating that dopamine agonists are much more likely to trigger this than either L-dopa or selective monoamine oxidase B inhibitors
- Pornography and Food Addictions also reported & related to PD treatment

Djamshidian A et al. *Mov Disord*. 2011 June 5; (Epub ahead of print).

What do healthcare professionals think about their addiction treatment experiences?

41

Views Regarding Helpfulness of Treatment

Treatment Experience	Mod/Extreme Helpful	Slightly Helpful	Not Helpful	Did Not Participate
Detox Facility	28.0%	16.1%	8.6%	47.3%
Residential or PHP Program	★ 62.7%	14.9%	3.2%	19.1%
Intensive Outpatient Program	34.7%	9.8%	8.7%	46.7%
Outpatient Treatment	23.9%	13.0%	9.8%	53.3%
AA/NA Meetings	★ 81.9%	14.9%	2.1%	1.1%
Individual Therapy	52.7%	22.6%	8.6%	16.1%
Couples/Family Therapy	19.3%	14.0%	8.6%	58.1%
Weekly Monitoring Group	★ 75.5%	21.3%	3.2%	--
Random Drug Screening	★ 71.3%	19.1%	6.4%	3.2%
Church-Based Recovery Group	17.3%	6.5%	4.3%	72.0%

Merlo, Kingman, Conwell, & Rivenbark (2012). *American Psychological Association Annual Meeting*. Orlando, FL¹²