Is Sugar the New Tobacco? How to Regulate Toxic Foods

Barbara L. Atwell

*Elisabeth Haub School of Law at Pace University*

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Is Sugar the New Tobacco?
How to Regulate Toxic Foods

Barbara L. Atwell*

“I have eliminated refined sugar from my diet. . . . Ultimately, it’s something I can do to decrease my risk of cancer.”

Introduction

In May 2012, New York City’s mayor Michael Bloomberg announced a proposed ban on the sale of sugary drinks in excess of 16 ounces at certain establishments like movie theatres, restaurants and other food service facilities. This has provoked controversy, with detractors arguing that the proposed ban constitutes governmental interference with the basic freedom to choose what to consume, and supporters countering that it is a creative public health initiative.

*Associate Professor of Law and Director of Diversity Initiatives, Pace Law School. I am grateful to Andrew B. Hurst for his assistance with this article.


One inevitable question is why the Bloomberg administration singled out sugar. After all, foods that are high in fat, like sugar, can contribute to obesity and clog arteries, and foods that are high in sodium can cause hypertension. What health risks associated with sugar consumption are so serious that they warrant the recent wave of attention and regulation?

First, sugar, and more specifically “added sugar,” contributes to some of the most widespread chronic diseases in the world. In addition to America’s obesity epidemic, excessive sugar consumption is linked to diabetes and heart disease. New research suggests that sugar is also a “chronic poison” that directly contributes to diseases like cancer and depression, among others.

Second, the number of people adversely impacted by excessive sugar consumption exceeds the number who are adversely impacted by tobacco use. Sugar consumption worldwide has tripled over the past fifty years, and the number of people suffering from chronic diseases associated with it has also grown. Approximately thirty-six percent (about eighty million) of American adults are obese, more than twenty-five million suffer from

5. There are various forms of sugar, including sucrose, fructose, high fructose corn syrup and glucose. See infra note 8 and accompanying text.


8. This article addresses added sugar, sugar that is not a natural part of the food product but is added as part of food processing. This includes sugar from sugar cane and sugar beet, high fructose corn syrup and other sweeteners that add fructose to the food supply. See Robert H. Lustig et al., Public Health: The Toxic Truth About Sugar, 482 NATURE 27 (Feb. 2, 2012); cf. WILLIAM DUFFY, SUGAR BLUES (1975) (defining refined sugar as “produced by multiple chemical processing of the juice of the sugar cane or beet and removal of all fiber and protein, which amount to ninety percent of the natural plant.”); JOHN S. YUDKIN, PURE, WHITE AND DEADLY 28 (2nd ed. 1986) (explaining that some foods, like fruits have natural sugar and do not present the same health concerns because fruits also have natural fiber that counterbalances the fructose contained in fruit).

9. Lustig et al., supra note 8 (noting that chronic, non-communicable diseases like heart disease and diabetes contribute to thirty-five million deaths each year).

10. Id.

11. See infra notes 48, 56 and accompanying text.


13. See infra notes 48-57 and accompanying text.

14. Lustig et al., supra note 8.

diabetes, and in 2008, more than 616,000 Americans died from heart disease. Meanwhile, approximately 45.3 million adults smoke cigarettes, and approximately 443,000 Americans die prematurely each year from tobacco use. Thus, the number of people adversely impacted by sugar exceeds the number adversely impacted by tobacco. A third (and related) reason to focus on sugar is that it is added to approximately eighty percent of processed food products on the market. Thus, dangers associated with it are almost impossible to avoid. Added sugar’s infiltration into most processed food products undoubtedly helps explain the increase in sugar consumption.

This article explores the health risks associated with added sugar. It then examines how, if at all, sugar should be regulated, by considering tobacco regulation as a possible model. Part I identifies the health risks of sugar consumption. Part II examines the reasons why sugar is added to so much of our food supply. Part III provides an overview of tobacco regulation, including educational initiatives, warning labels, advertising restrictions, age limitations, and taxes. Finally, Part IV provides a framework for sugar regulation, suggesting that most of the foregoing laws designed to discourage tobacco use should, with the exception of age restrictions and with appropriate modifications, be applied to products with large quantities of added sugar. Part IV also suggests regulatory changes within the FDA to remove sugar’s classification as a substance that is “generally recognized as safe (GRAS).”

In addition to looking solely at sugar, Part IV also takes a broader look at how food policy can shift to improve the overall food supply in ways that enhance consumer choice, and proposes the appointment of an independent

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19. Id.
20. See Here’s the Thing, infra note 112 and accompanying text.
21. Many of the recommendations in this article can be implemented administratively where hopefully public health considerations are more likely to outweigh political ones than they would at the legislative level. Mayor Bloomberg opted for this administrative approach, having the NYC Department of Health vote on the soda size restrictions rather than the legislative City Council.
22. See infra notes 209-211 and accompanying text.
National Director of Food, who would have sufficient authority to help neutralize the impact that the food lobby has on food supply.

I. THE EVIDENCE OF SUGAR’S TOXICITY – THE SCIENCE

Sugar is a carbohydrate that for many years was assumed to be no better or worse for our health than other carbohydrates. Basic sugar, or sucrose, comes from sugar cane or sugar beets. Additionally, high fructose corn syrup is also included as sugar for purposes of this article. Added sugar is unnecessary for a healthy diet. Calories from sugar are often called “empty calories” because sugar has little or no nutritional value. Yet Americans add many calories to our diets through sugar consumption. In fact, Americans have the highest rate of sugar consumption in the world. The average American now consumes between 150-200 pounds of sugar a year. Sugar is not just a source of empty calories, however, it is also a source of toxic calories. There are biochemical reactions related to sugar consumption that make it uniquely unhealthy. As a result, it has been described as a “chronic toxin.”

23. Yudkin, supra note 8, at 1 (noting that our carbohydrate consumption shifted from primarily wheat, rice and corn based starches to increased levels of sugar over the past 100-200 years).
24. See Taubes, supra note 1 (describing Dr. Robert Lustig’s famous lecture on sugar in which Dr. Lustig explains, “[h]igh-fructose corn syrup, sugar – no difference. . . . The point is they’re each bad – equally bad, equally poisonous.”); see also infra notes 30-32.
25. Duffy, supra note 8, at 27 (“From the Garden of Eden through thousands of years, what we call sugar was unknown to man.”); see also Yudkin, supra note 8, at 2 (noting that while we all require healthy levels of sodium, “there is no physiological requirement for sugar.”).
27. Lustig et al., supra note 8, at 28-29.
30. See infra notes 33-41 and accompanying text.
31. See Samantha Quinn, The Real Truth About Sugar: Dr. Robert Lustig’s Lecture, “SUGAR: The BITTER TRUTH.” 19 [hereinafter The Real Truth About Sugar] (Quinn explains in print format what Dr. Lustig described in his lecture); see also Lustig, supra note 8.
HOW TO REGULATE TOXIC FOODS

Although health risks associated with sugar consumption have been discussed for a number of years, the biochemical process that occurs when we consume sugar has received recent attention largely due to a lecture by Dr. Robert Lustig, a professor of Pediatrics at the University of California at San Francisco. In his lecture, Sugar: The Bitter Truth, Dr. Lustig distinguishes between glucose, which is not particularly harmful, and fructose, which is. Table sugar, or sucrose, is comprised of fifty percent glucose and fifty percent fructose. High fructose corn syrup, which is sweeter than sugar, is comprised of fifty-five percent fructose and forty-five percent glucose. Because of the relative similarity in the proportion of glucose to fructose in both sugar and high fructose corn syrup, Dr. Lustig considers them to be equally harmful.

Dr. Lustig explains the biochemical difference between consuming 120 calories of glucose versus 120 calories of sucrose. When we consume glucose by eating white bread all the organs of the body use eighty percent of the calories with only twenty percent being processed by the liver. Conversely, when we consume 120 calories of sucrose (sugar) by consuming a glass of orange juice, for example, we are consuming equal

32. See e.g., YUDKIN, supra note 8; Xiaosong Ouyang, et al., Fructose Consumption as a Risk Factor for Non-alcoholic Fatty Liver Disease, 48 J. HEPATOLOGY 993 (June 2008) (Study found that patients with non-alcoholic fatty liver disease consumed 2-3 times as much fructose as control subjects.); Richard J. Johnson, et al., Potential Role of Sugar Fructose in the Epidemic of Hypertension, Obesity and the Metabolic Syndrome, Diabetes, Kidney Disease, and Cardiovascular Disease; 86 AMER. J. CLINICAL NUTRITION, 899, 904 (2007) (“[W]e propose that sugar intake, and particularly that of fructose, may have an important participatory role in the current cardiorenal disease epidemic,” because it raises uric acid levels.”); Vasanti S. Malik et al., Sugar-Sweetened Beverages, Obesity, Type 2 Diabetes Mellitus, and Cardiovascular Disease Risk, 121 CIRC. AMER. HEART ASS’N J. 1356 (2010), available at http://circ.ahajournals.org/content/121/11/1356.full#sec-9 (“SSB intake is a significant contributor to weight gain and can lead to increased risk of T2DM and cardiovascular disease.”); E.M. ABRAHAMSON, BODY, MIND & SUGAR (1951).

33. Dr. Lustig’s lecture, Sugar: The Bitter Truth, was posted on YouTube and has been viewed more than 2 million times. Robert H. Lustig, Sugar: The Bitter Truth, YOUTUBE.COM (July 30, 2009), http://www.youtube.com/watch?v=dBnrua6-oM [hereinafter Lustig lecture]. This lecture is relied upon heavily by reporter Gary Taubes, in Is Sugar Toxic? supra note 1.

34. Lustig lecture, supra note 33.

35. Id.

36. NESTLE, supra note 28, at 318; Taubes, supra note 1.

37. QUINN, supra note 31, at 43; NESTLE, supra note 28, at 318; see also Taubes, supra note 1 (noting that Luc Tappy, a researcher at University of Lausanne in Switzerland and one of the world’s foremost experts on high fructose corn syrup, has stated that there is “not the single hint” that it is more dangerous than “other sources of sugar.”).

38. Other carbohydrates that contain glucose include potatoes.

39. QUINN, supra note 31, at 43.
parts of glucose and fructose. The glucose is not harmful because the liver processes so little of it. Moreover, the few calories that are metabolized by the liver activate an enzyme that is converted almost entirely to glycogen, a non-toxic substance that can be stored in the liver in unlimited quantities without harm. The half of sucrose that constitutes fructose, however, is processed differently. The liver will process all 60 of the calories from fructose. Therefore, as a matter of volume alone, consuming sugar, fifty percent of which is fructose, causes our livers to work harder than when glucose is consumed alone. In addition, the problem is exacerbated when fructose is consumed via soft drinks because the fructose hits the liver so quickly. In essence, what is being discovered is that a high sugar diet is effectively a high fat diet.

Understanding the metabolic processes associated with fructose consumption has given scientists a better understanding of how that consumption contributes to a variety of diseases. For example, sugar consumption is a key culprit in the obesity epidemic.
premise is that in order to maintain a healthy weight, we have to burn more calories than we consume. Dr. Lustig’s theory refutes this premise; because fructose is only metabolized by the liver, fructose calories are more likely than calories from other sources to contribute to obesity.49 As such, not all calories are created equal.50 A study by Dr. David Ludwig of Boston Children’s Hospital confirms Dr. Lustig’s theory.51 This is one of the reasons for Mayor Bloomberg’s initiative to limit quantity sizes of sugar-laden beverages.52 “Desserts and sodas and energy and sports drinks are the top sources of added sugar in most American diets.”53 Sugar adds calories and fat, but no nutritional value to the diet.54 This may help explain why low-fat diets, which were promoted in the 1980s, failed to make a dent in obesity rates. When fat was taken out of many foods, sugar was often added to enhance taste. In fact, obesity rates since the 1980s have skyrocketed.55 While correlation does not prove causation, there is substantial evidence that sugar is a primary factor in the current rates of obesity.

Sugar consumption is also implicated in diabetes, heart disease, and hypertension, all of which are connected to metabolic syndrome.56 The liver, as the sole metabolizer of fructose, is critical in terms of insulin production, the hormone used to regulate blood sugar. When we eat, we produce insulin to keep blood sugar at normal levels. Glucose and fructose consumption impact insulin production in different ways. When we consume glucose, insulin production is stimulated, telling the brain when we are full and when to stop eating. Fructose, however, does not stimulate insulin upon entry.57 Having the liver convert fructose to fat “apparently

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50. See Gina Kolata, In Dieting, Magic Isn’t a Substitute for Science, N.Y. Times, July 10, 2012 (in conversation with Dr. Jules Hirsch, Dr. Hirsch believes that the idea that not all calories are created equal in the obesity debate is an “illusion”).
52. New York Plans Ban, supra note 2.
54. See Taubes, supra note 1.
56. Vasanti S. Malik et al., Sugar-Sweetened Beverages, Obesity, Type 2 Diabetes Mellitus, and Cardiovascular Disease Risk, 121 CIRCULATION 1356, 1364 (2010).
57. QUINN, supra note 28, at 52.
induces a condition known as insulin resistance, which is now considered the fundamental problem in obesity, and the underlying defect in heart disease and in [type 2] diabetes. . .It might also be the underlying defect in many cancers." 58 Our bodies respond to insulin resistance by producing more insulin, which ultimately causes blood sugar levels to rise. 59 “[H]aving chronically elevated insulin levels has harmful effects of its own — heart disease for one. A result is higher triglyceride levels and blood pressure, lower levels of HDL cholesterol (the ‘good cholesterol’), further worsening the insulin resistance — this is metabolic syndrome.” 60

The biochemical waste product of fructose consumption is uric acid. 61 Excess uric acid is associated with gout, and also blocks endothelial nitric oxide synthase, “an enzyme . . . that is responsible for generating . . . our internal blood pressure.” 62 Therefore, sugar consumption is linked to hypertension. 63 Sugar consumption is also associated with mental illness, including depression. 64 There is also evidence that sugar is addictive. 65

58. Taubes, supra note 1. There has been a debate over many decades about whether fat or sugar is the key culprit in heart disease, diabetes and obesity. Compare Ancel Keys et al., Seven Countries Study (1980) (fat), with Yudkin, supra note 8 (sugar). Given the manner in which sugar is metabolized and converted to fat, it is possible that both fat and sugar are implicated, with sugar being the worst culprit. One thing is clear: rates of obesity, diabetes, and heart disease continued to climb while we focused on fat as the culprit.

59. Taubes, supra note 1.


61. Quinn, supra note 31, at 52.

62. Id. at 53.

63. He supports this theory with evidence from a study by Dan Feig at the University of Texas, San Antonio. Id. at 53-54.

64. O’Connell, supra note 28, at 79; Duffy, supra note 8, at 48 (“It is quite possible to improve your disposition . . . and change your personality for the better. The way to do it is to avoid cane and beet sugar in all forms and guises.”). The so-called “twinkie defense” has been criticized as a form of “defense du jour” that has no real legitimacy. State v. Stewart, 719 S.E.2d 876, 903 (W. Va. 2011) (Benjamin, J., dissenting) (the majority “encourages such notable defenses as the “twinkie” defense (used in the defense of Dan White in the
Thus, efforts to stop eating sugar or to decrease the amount of sugar consumption may be very difficult for some individuals. Less well-known risks of sugar consumption are cancer and tuberculosis. The Department of Agriculture’s 2010 Dietary Guidelines, the Department of Health and Human Services, and the American Heart association have all advised Americans to limit their sugar consumption because of the health risks associated with its excessive intake.

Additional research is needed to determine the level at which sugar consumption becomes toxic. Dr. Lustig points out that “[a] little is not a problem, but a lot kills slowly.” While American sugar consumption is a lot higher than it is in much of the rest of the world, we need controlled studies to determine at what point sugar consumption leads to fatty liver, insulin resistance and metabolic syndrome. “In . . . laboratory rats and mice, it’s clear that if the fructose hits the liver in sufficient quantity and with sufficient speed, the liver will convert much of it to fat,” leading to insulin resistance and metabolic syndrome.

One of the reasons why sugar consumption contributes to the foregoing diseases is that in many ways, we metabolize sugar the same way we metabolize alcohol. Fructose is a “chronic toxin” rather than an acute toxin like ethanol (alcohol), in that it does not cause drunkenness; rather, the harmful effects of sugar are seen over time. Fructose, however, is

killings of San Francisco Mayor George Moscone and Supervisor Harvey Milk.

65. Duffy, supra note 8, at 24 (“Sugar Blues . . . deserves . . . to become the universal name for an addictive planetary plague.”).
66. Burton Goldberg et al., An Alternative Medicine Definitive Guide to Cancer 25 (1997) (Dr. Atkins’ diet for cancer treatment begins with “sugar free” recommendation); see also Dr. Douglas Brodie, id. at 71 (“avoid refined sugars.”); Dr. Etienne Callebout, id. at 98 (recommending that cancer patients avoid sugar and if sweets are eaten, not to eat them by themselves because “this practice tends to destabilize blood sugar levels and promote cancerous conditions.”).
67. There is evidence that a high sugar diet creates the conditions necessary for tuberculosis bacteria to thrive. Duffy, supra note 8, at 76-77.
68. Lustig et al., supra note 8, at 28.
71. Taubes, supra note 1; Lustig et al. supra note 8 (“[S]ugar induces all of the diseases associated with metabolic syndrome.”).
72. Quinn, supra note 31, at 19, 47.
metabolized like alcohol. After all, alcohol (ethanol) is fermented sugar; they come from the same plant, and they are taken care of by the liver in the same way.73

Despite the forgoing discussion, research on the health risks associated with sugar consumption remains inconclusive.74 It will take several years to conduct double blind studies to prove Dr. Lustig’s theories. Just as tobacco was thought to be dangerous for our health before it was conclusively proven,75 sugar is now thought to be more dangerous than scientific data can prove.76 For example, the Institute of Medicine reported that there is still no consensus on how much sugar can be consumed as part of a healthy diet.77 The Sugar Association exploits this lack of certainty, suggesting that sugar is a safe part of a nutritious diet.78 This is one reason, among others, why sugar remains a pervasive part of our food supply. In the case of sugar, it may be useful to apply the precautionary principle from the field of environmental law and take precautions based on the knowledge we have.79

II. WHY ADDED SUGAR IS PERVERSIVE THROUGHOUT THE FOOD SUPPLY

A. Follow the money

The old adage “follow the money”80 applies to the addition of sugar to a large majority of our food supply, just as it applies to so many other things. Even before Citizens United,81 bank bailouts, the retention of private for-
profit insurance companies for health care coverage, and the virtual corporatization of America, the food lobby was a strong political force. The food lobby works for policies that will maximize the profitability of big food. For example, the dairy industry has successfully lobbied to include dairy in the United States Department of Agriculture’s (USDA) daily-recommended diet, despite evidence that we do not need dairy, and that many dairy products are unhealthy for human consumption. Similarly, the
National Cattlemen’s Beef Association “works to advance the economic, political and social interests of the U.S. cattle business and to be an advocate for the cattle industry’s policy positions and economic interests.” 88

The sugar industry also has a long history of looking out for its own interests. 89 Historically, humans ate very little sugar because it was very expensive to extract from the sugar cane plant. 91 As a result, sugar was considered a luxury item and was often kept in a special covered dish and used sparingly. 92 The commercial production of sugar in the Caribbean was initiated by Europeans who “virtually exterminated” the indigenous population and then imported slave labor from Africa to work the sugar plantations. 93 With modern machinery, sugar production became relatively inexpensive and the price of sugar plummeted. 94 Moreover, when high fructose corn syrup was introduced in the 1970s, it was sweeter and cheaper than sugar from sugar cane or sugar beets, and the cost of sweetening food was further reduced, especially given our agricultural corn subsidies. 95 Sweetening food shifted from a very expensive proposition to a relatively inexpensive process.

The Sugar Association, a key sugar lobbying organization, maintains that the single largest source of saturated fat and have been linked to prostate cancer. Id. Moreover, milk is more difficult to digest than, for example, cheese or other dairy products. Id. Yet the “federal government not only supports the milk industry by spending more money on dairy than any other item in the school lunch program, but by contributing free propaganda as well as subsidies amounting to well over $4 billion in the last 10 years.” Id. The scientific evidence suggests that when it comes to preventing diseases like osteoporosis, other countries with less dairy consumption have much lower incidences of the disease. In fact, we can get the calcium we need from vegetables like broccoli and kale. See Health Concerns about Dairy Products, Physicians Comm. For Responsible Med., http://www.pcrm.org/health/diets/vegdiets/health-concerns-about-dairy-products (last visited Dec. 15, 2012) (“Many Americans, including some vegetarians, still consume substantial amounts of dairy products—and government policies still promote them—despite scientific evidence that questions their health benefits and indicates their potential health risks.”).

89. I am including both the corn and sugar industries when I use this term, although they are competitors. See infra note 106 and accompanying text.
90. YUDKIN, supra note 8, at 2.
91. DUFFY supra note 8, at 27-28.
92. See Id.
93. DUFFY, supra note 8, at 31-33 (noting that two-thirds of the African trade slave was for sugar plantations.). See also id. at 31-45 for a detailed account of the history of the sugar trade.
94. YUDKIN, supra note 8, at 12-13.
“[s]ugar has been an important ingredient in people’s diets for centuries and the subject of countless studies. When the full body of science is evaluated during a major review of scientific literature, experts continue to conclude that sugars intake is not a causative factor in any disease, including obesity.”

The sugar industry, unlike some other food industries, has made no effort to conduct studies to evaluate the health risks associated with sugar consumption. In 2003, the World Health Organization was poised to suggest that sugar should constitute no more than ten percent of a daily diet. The Sugar Association lobbied so extensively against the recommendation that it was dropped and replaced with a much weaker and more vague recommendation that we eat sugar in moderation. Without regard to health consequences, corporate lobbying focuses on maintaining or increasing quarterly profits for industry members by attempting to advance policies that maximize sales, including food subsidies that adversely impact the food supply.

Food subsidies have substantially contributed to the widespread addition of sugar to our food supply. Since 1933, Congress has passed a farm bill

97. YUDKIN, supra note 8, at 14 (“Other industries which produce foods like meat or dairy products or fruits have spent a great deal of money over the years to carry out or support nutritional studies on their products, even though these foods form a smaller proportion of the western diet than sugar now does. But the sugar people seem quite content to spend their money on advertising and public relations, making claims about quick energy and simply rejecting suggestions that sugar is really harmful to the heart or the teeth or the figure or to health in general.”).
100. Arguably, re-writing corporate law should be a high priority. Rather than focus on quarterly profit for investors, corporations should have a legal incentive to balance profit with good corporate citizenship. LYNN STOUT, THE SHAREHOLDER VALUE MYTHE: HOW PUTTING SHAREHOLDERS FIRST HARMS INVESTORS, CORPORATIONS AND THE PUBLIC (2012).
every five years that has a significant impact on what farmers grow and on the ultimate price of food. Initially designed to provide income protection for small farmers during the Depression, farm subsidies now go primarily to huge agribusiness enterprises. Moreover, crops like corn, which are high in calories but relatively low in nutrition, are subsidized rather than whole grains and produce. “We’re subsidizing the least healthy calories in the supermarket – high fructose corn syrup... and we’re doing very little for farmers trying to grow real food.” The impact of these subsidies is multifaceted. The subsidies encourage overproduction of crops like corn because


103. Windham, supra note 102, at 6; Foster, supra note 101, at 240, 242.

104. Nicholas D. Kristof, Obama’s ‘Secretary of Food’?, N.Y. TIMES (Dec. 11, 2008), http://www.nytimes.com/2008/12/11/opinion/11kristof.html?_r=0. Attributing much of the problem to the farm lobby. Id. See also Foster, supra note 101 at 239 (questioning “the value of using the third-largest federal benefits program to reduce the cost of commodities that contribute to $147 billion in annual obesity-related health costs.”); Michele Alexandre, We Reap What We Sow: Using Post-Disaster Development Paradigms to Reverse Structural Determinist Frameworks and Empower Small Farmers in Mississippi and Haiti, 14 U. PA. J. L. & SOC. CHANGE, 135, 139 (“[D]omestic and international trade policies...[including] the encouragement of mass production of energy-related products like corn, through subsidies to large farming entities and international restrictions on exportation – have contributed to the disenfranchisement of small farmers around the world.”). Cf. FARM SUBSIDY PRIMER, supra note 95. The subsidies not only protect against risk, but ensure profitability for large farmers, while small farmers settle for a “pittance” in terms of governmental assistance. Id. Our agricultural policy has led to an agribusiness that produces ninety-eight percent of our food supply. Windham, supra note 102, at 4. In addition to noting the policy favoring large farming which causes pollution and other problems, the author notes that “agribusiness is arguably America’s largest corporate welfare recipient.” Id. See Margaret Sova McCabe, Foodshed Foundations: Law’s Role in Shaping our Food System’s Future, 22 FORDHAM ENVTL. L. REV. 563 (Fall 2011) (discussing the need for more state and local power over the food supply, a model she labels the foodshed model.); Phoenix X. F. Cai, Think Big and Ignore the Law: U.S. Corn and Ethanol Subsidies and WTO Law, 40 GEO. J. INT’L L. 865 (2009).
wheat, rice and soy. In response to the overabundance of these crops, manufacturers have found inventive ways to process these commodities, creating unhealthy foods that are highly processed. Farmers who grow fruits and vegetables are not subsidized, and are ineligible even for most conservation programs, because they do not grow program crops.105

While the focus of this article is on the health hazards of both sugar from sugar cane and sugar beets, as well as high fructose corn syrup, the sugar and corn industry are competitors.106 Each is trying to convince consumers that it has the healthier sweetener.107 The USDA engages in direct efforts to keep the sugar industry stable.108 By limiting import of foreign sugar, the USDA keeps domestic prices at a level that helps maximize corporate profitability.109 Therefore, both the corn and sugar industries profit substantially from government food policies.

In addition to food subsidies, humans have a natural, evolutionary affinity for sweet foods.110 There is also some evidence that sugar is addictive, so once we begin to consume large quantities of sugar, we want to continue the habit.111 Thus, there is a great deal of money to be made from sugar-sweetened products, making it an especially attractive food additive from the industry’s standpoint. As a result, an estimated eighty percent of the approximately 600,000 processed food products on the

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105. Foster, supra note 101 at 240-42 (2011) (suggesting that the focus of the farm bill should shift from quantity of the food supply to quality of affordable food.).


107. Id.


109. Fox, supra note 108.

110. There are no bitter plants that are acutely toxic, so as a matter of human survival, we evolved to favor sweet foods. Yudkin, supra note 8, at 8:

111. DUTTY, supra note 8, at 30 (Some “viewed sugar addiction among the sultan’s armies in much the same way as modern observers discovering American forces in Asia hooked on heroin and marihuana.”).
market contain added sugar, severely limiting consumer choice. These products are not only on supermarket shelves, but they are in vending machines, schools, convenience stores and virtually everywhere one looks. Sugar is even added to products not normally considered as sweet, like bread and ketchup. The sugar lobby has a vested interest in keeping it that way. With this ready availability, sugar consumption has drastically increased over the past 50 years. The average American consumes 152 pounds of sugar annually.

III. PUBLIC HEALTH LAW AND TOBACCO

[Sugar . . . resembles alcohol and tobacco in that it is a material for which people rapidly develop a craving, and for which there is nevertheless no physiological need.

Tobacco use is the single largest cause of premature death in the United States, killing more than 400,000 people annually. In addition to those

112. See Robert Lustig: Transcript, Here’s the Thing: With Alec Baldwin, http://www.wnyc.org/shows/heresthething/2012/jul/02/transcript/ [hereinafter Here’s the Thing] (In a discussion with Alec Baldwin, Dr. Lustig notes that Dr. Barry Popkin “has just done a study that shows that 80 percent of the food items, there are 600,000 food items in America, 80 percent of them are laced with sugar, added sugar.”). It bears repeating that any regulation should address only foods with added sugar. Foods like fruit that naturally contain sugar, also contain fiber, which appears to counteract the negative impact of sugar consumption. Fruit also contributes to the body’s natural cleansing process. See YUDKIN, supra note 8.

113. Lustig et al., supra note 8.

114. See supra note 28 and accompanying text. Cf. YUDKIN, supra note 8, at 8-14 (describing the evolution of the human diet over thousands of years, and focusing on our shift from proteins and fats toward carbohydrate starches and sugars). Our diet is now focused more on palatability than nutrition. Id. at 11.


116. This section focuses on the legal regulation of cigarettes. Other tobacco products, like cigars and chewing tobacco are subject to some, but not all of the same regulations.

117. YUDKIN, supra note 8, at 13 (noting that many countries have taxed sugar, along with tobacco and alcohol.) Like tobacco, alcohol is also subject to various public health laws, like the twenty-one year old age restriction for alcohol purchases and DUI laws. While sugar and alcohol are metabolized in essentially the same way, sugar is not an acute toxin that can impair such basic functions as the ability to drive. Moreover, tobacco regulations are more extensive than alcohol regulations. For these reasons, this article compares sugar to tobacco rather than alcohol.

who die, many others who smoke suffer from a variety of illnesses that adversely impact their quality of life. Additionally, second-hand smoke threatens the health of those in the vicinity of the smoker because there are no safe levels of exposure to second-hand smoke. The health care costs and lost productivity associated with tobacco use is estimated at approximately 193 billion per year, with another ten billion in costs associated with second-hand smoke.

Due to the number of people who smoke, the danger it presents to others, and the financial costs associated with tobacco use, there are many legal restrictions on tobacco products. These restrictions include mandated warnings, advertising and age restrictions, and geographic limitations on where smokers can light up. Tobacco laws mirror public health laws in general, as they include every level and type of government entity.

Moreover, the 1998 Master Settlement Agreement between the states and the tobacco industry, gave the industry assurance that if it paid the requisite sums of money, state and local governments could not sue them for future actions unless criminal in nature or to enforce the terms of the settlement agreement. C. Stephen Redhead, Tobacco Master Settlement Agreement (1998): Overview, Implementation by States, and Congressional Issues, CRS REPORT FOR CONGRESS (last updated Nov. 5, 1999), http://www.law.umaryland.edu/marshall/crsreports/crsdocuments/RL30058.pdf. Thus, tobacco companies were permitted to stay in business, for a price. States that sell the most tobacco products receive the greatest amount of money under the settlement agreement, so they may have conflicting interests in terms of limiting sales. As noted above, sugar consumption rivals tobacco in public health deaths and costs when the entire range of diseases with which it is linked is taken into account.


122. Id.

123. See infra notes 125-163 and accompanying text.

124. Public health laws exist at every level of government. In addition to federal legislation, federal agencies like the National Institutes of Health, Centers for Disease Control and Food and Drug Administration (FDA), all of which are encompassed within the Department of Health and Human Services, play a role in protecting public health as do agencies like the Federal Trade Commission (unfair and deceptive trade practices), Federal Communications Commission, The Department of Alcohol, Tobacco and Firearms (illegal sales), and Internal Revenue Service (taxing unhealthy products). States and municipalities also play a central role in promoting public health. See Jacobson v. Massachusetts, 197 U.S. 11, 25 (1905) (Court upheld a state statute empowering local boards of health to require smallpox vaccinations if they felt it necessary. The Court broadly construed state police power to regulate public health and safety. The regulations must not be “arbitrary or oppressive” and must substantially relate to the public health threat.). In addition, private
Federal, state and local legislative and administrative initiatives permeate the tobacco regulation landscape.

A. Federal

At the federal level, the Cigarette Labeling and Advertising Act (Cigarette Labeling Act) was first passed in 1965. A key purpose of the Cigarette Labeling Act was to educate the public about the risks of smoking. Accordingly, it required a warning on every package of cigarettes to make smokers aware of health hazards associated with smoking. The required warning was strengthened in 1969 as scientific understanding of the risks associated with smoking evolved. In 1984, four rotating warnings were implemented to include some of the specific diseases linked to smoking and to emphasize the potential benefits of quitting. In 2009, Congress acted once again by requiring nine rotating textual warnings. In addition, Congress included a requirement that fifty percent of every cigarette package include graphic warnings depicting negative aspects of smoking. The tobacco industry has challenged these organizations like the Institute of Medicine, a not-for-profit organization, provide “unbiased” advice that the government and the public alike may look to for guidance. See INST. OF MED. OF THE NAT’L ACAD., About the IOM, http://www.iom.edu/About-IOM.aspx.


How to Regulate Toxic Foods

graphic warning requirements with mixed results.\textsuperscript{132} The 1965 Cigarette Labeling Act, along with later amendments, not only mandates cigarette warnings but also places advertising restrictions on tobacco products.\textsuperscript{133} Additionally, it preempts state laws related to labeling and advertising as long as the requisite warnings are in place.\textsuperscript{134} The Cigarette Labeling Act bans advertising on “any medium of electronic communication subject to the jurisdiction of the Federal Communications Commission (FCC),” including television and radio.\textsuperscript{135} Although the tobacco industry raised first amendment challenges to the ban, the law was upheld.\textsuperscript{136} The foregoing rule has also expanded to cover the internet because the FCC asserted jurisdiction over it, albeit adopting a “nonregulatory approach.”\textsuperscript{137} The 1998 Master Settlement Agreement explicitly prohibited advertising that targeted people under eighteen years of age.\textsuperscript{138} Nevertheless, in part because of the need to heighten protection requires manufacturers to apply graphic warnings to the top fifty percent of the front and back of cigarette packages for graphic, color health warnings. The FDA is charged with issuing regulations for graphic images that will “[depict] the negative health consequences of smoking.” Tobacco Regulation, Federal Retirement Reform, Pub. L. No. 111-31, § 201(d), 123 Stat. 1776 (2009). Other tobacco products have different requirements.


136. The television and radio ban on advertising was upheld in Capital Broadcasting Co. v. Mitchell, 333 F. Supp. 582 (D.D.C.1971), aff’d 405 U.S. 1000 (1972). Cf. Lorillard Tobacco v. Reilly, 533 U.S. 525 (2001). Cf. American Legacy Foundation v. Lorillard Tobacco Co., 886 A.2d 1 (Del. Ct. Chan. 2005) (dispute regarding 1998 settlement agreement that prohibited ALF from advertising that “vilified” tobacco companies or employees). Today, commercial speech must satisfy the well-established Central Hudson test. Central Hudson Gas & Electric Co. v. Public Serv. Comm’n, 447 U.S. 557, 566 (1980). Under Central Hudson, the court determines first, whether the commercial speech concerns a lawful activity and is not misleading. If the speech passes muster under this analysis, the Court proceeds to determine whether the government has met its burden of showing that it has a substantial interest in regulating the speech. If it does, the regulation must directly advance that interest and be no more extensive than necessary to achieve its purpose. Id.


of adolescents, Congress later enacted the Family Smoking and Prevention and Tobacco Control Act (Tobacco Control Act). 139

Congress passed the Tobacco Control Act in 2009 140 which goes beyond labeling and advertising by broadly regulating tobacco products on several levels. For example, it grants regulatory authority over tobacco products to the Food and Drug Administration (FDA), authority the FDA lacked prior to 2010. 141 Furthermore, the Tobacco Control Act required the FDA to reissue regulations it had attempted to implement, unsuccessfully, in 1996. Among the FDA’s regulations now in place are age restrictions mandating that purchasers of tobacco products be at least eighteen years old. In 1996, the FDA found that eighty-two percent of adult smokers began smoking prior to their eighteenth birthday, and half had become regular smokers by the time they turned eighteen. 142 Thus, key to reducing the incidence of


139. “The government has . . . copious documentation of the practices used by the industry, oftentimes directly aimed at juveniles and other times seriously effecting them, to maintain and increase tobacco use and dependency.” Discount Tobacco, supra note 131 at 519. See also Kate E. Wigginton, Will The Supreme Court Knock Tobacco Advertising Out Of The Park For Good?: The Commercial Speech Implications Of The Family Smoking Prevention And Tobacco Control Act, 21 SETON HALL J. SPORTS & ENT. L. 533 (2011); Commonwealth Brands v. U.S., 678 F. Supp. 2d 512 (W.D. Ky. 2010).


141. See The Tobacco Control Act, 21 U.S.C.A. §§ 387a-(f), 123 Stat. 1788, (2009). (A decade earlier, the Supreme Court denied the FDA’s attempt to assert jurisdiction over tobacco products on the theory that nicotine is a drug and the tobacco products are drug delivery devices. FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120 (2000). The Court held that Congressional intent precluded FDA jurisdiction. The Court reasoned that if the FDA had jurisdiction, it would have to classify tobacco products in a class that would bar them from being marketed because of their health risks. The Court pointed out that Congress explicitly foreclosed that result under 7 U.S.C.§ 1311(a), which provides, “the marketing of tobacco constitutes one of the greatest basic industries of the United States, . . . and stable conditions therein are necessary to the general welfare.”). Id. at 137. For additional history surrounding the FDA’s role in tobacco regulation, see Matt Shechtman, Smoking Out Big Tobacco: Can the Family Smoking Prevention and Tobacco Control Act Equip the FDA to Regulate Tobacco Without Infringing on the First Amendment?, 60 EMORY L. J. 705, 708-711 (2011). Among Congress’ findings under the Tobacco Control Act is the following: “Neither the Federal Trade Commission nor any other Federal agency except the Food and Drug Administration possesses the scientific expertise needed to implement effectively all provisions of the . . . Tobacco Control Act.” Section 2 of the Tobacco Control Act – Findings, ¶ 45, Pub. L. No. 111-31, 123 Stat. 1776 (2009), http://www.fda.gov/TobaccoProducts/GuidanceComplianceRegulatoryInformation/ucm261832.htm. See also 21 U.S.C. § 387n (2009) (clarifying FDA jurisdiction and coordination with the FTC).

smoking are initiatives targeted to adolescents.\textsuperscript{143} The Supreme Court has also acknowledged that smoking, and especially “underage smoking, poses perhaps the single most significant threat to public health in the United States.”\textsuperscript{144} Adolescent feelings of invincibility make it less likely that they will take the dangers of smoking as seriously as an adult.\textsuperscript{145} But if they make it to adulthood without smoking, it is unlikely that they will begin smoking thereafter.\textsuperscript{146} In recognition of adolescent vulnerability, the Tobacco Control Act prohibits outdoor advertising within one thousand feet of a school or playground, mandates that purchasers of tobacco products be at least eighteen, and prohibits tobacco companies from sponsoring sports and entertainment events.\textsuperscript{147} It also restricts distribution of free samples of tobacco products\textsuperscript{148} and bans flavored cigarettes.\textsuperscript{149}

There are other federal regulatory controls on tobacco use implemented by various agencies. For example, taxing and spending are also used in the tobacco context, as they are in other public health contexts. Thus, the IRS has played a role in taxing tobacco products,\textsuperscript{150} while other agencies spend money to educate the public about the dangers of smoking.\textsuperscript{151} The Bureau

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\item 143. See, e.g., U.S. DEP’T OF HEALTH AND HUMAN SERV., PREVENTING TOBACCO USE AMONG YOUNG PEOPLE; A REPORT OF THE SURGEON GENERAL, 5 (1994) (“Nearly all first use of tobacco occurs before high school graduation; this finding suggests that if adolescents can be kept tobacco-free, most will never start using tobacco”); Cf. Lorillard Tobacco Co. v. Reilly, 533 U.S. 525, 564 (2001) (the government has a substantial interest, even a compelling interest in preventing underage smoking).
\item 144. Food & Drug Administration v. Brown & Williamson Tobacco Co., 529 U.S. 120, 161 (2000); see also Discount Tobacco City & Lottery v. United States, 674 F.3d 509, 519 (6th Cir. 2012) (noting that the government provided extensive evidence that “the use of tobacco, especially by juveniles, poses an enormous threat to the nation’s health, and imposes grave costs on the government.”). 
\item 145. INSTITUTE OF MEDICINE REPORT, ENDING THE TOBACCO PROBLEM: A BLUEPRINT FOR THE NATION, 93 (2007) (“research suggests that adolescents misperceive the magnitude of smoking harms and the addictive properties of tobacco and fail to appreciate the long-term dangers of smoking, especially when they apply the dangers to their own behavior. . . . These distorted risk perceptions are associated with adolescents’ decisions to initiate tobacco use, a decision that they will later regret.”).
\item 147. Wigginton, supra note 139, at 536-537.
\item 150. See Jennifer Costello, Comment, THE FDA’S STRUGGLE TO REGULATE TOBACCO, 49 ADMIN. L. REV. 671, 678, n 42 (1997).
\item 151. This includes local government initiatives. New York City, for example, has a variety of tobacco related regulations, including those focused on education. See Legal Action, N.Y.C. DEPT. OF HEALTH AND MENTAL HYG., http://www.nyc.gov/html/doh/html/smoke/smoke2-legal.shtml.
of Alcohol, Tobacco, Firearms, and Explosives (ATF) is charged with fighting illegal tobacco sales, and the Department of Agriculture regulates tobacco farming. Therefore, the research and education efforts explicitly set forth in the Cigarette Labeling Act should not be overlooked.

B. State and Local

In addition to federal laws governing tobacco use, state and local regulations impose wide-ranging restrictions. For example, like the Tobacco Control Act, states have traditionally required purchasers to be at least eighteen years of age, with some states and localities mandating a nineteen year age minimum. States have also imposed their own cigarette taxes. In addition, since the 1970s many states and municipalities have restricted the physical locations where smoking is permitted in an effort to address second-hand smoke exposure. Many municipalities do not permit smoking in restaurants, bars or workplaces. Others have gone further, banning smoking in some outdoor spaces. San Luis Opisbo, California, for example, banned smoking in some county parks and parking lots located near county-owned property. New York City also implemented a smoking ban in public parks and beaches.


158. Id.

159. See, e.g., NYC Smoke Free Air Act of 2002, N.Y.C. Admin. Code § 17-502. This statute, which banned smoking in most restaurants and bars, was later amended to add hospitals and the grounds immediately outside hospital buildings. See also AMERICAN NON-SMOKERS’ RIGHTS FOUND., http://www.no-smoke.org/pdf/mediaordlist.pdf. (“Across the United States, 22,434 municipalities, representing 81.1% of the US population, are covered by a 100% smokefree provision in non-hospitality workplaces, and/or restaurants, and/or bars, by either a state, commonwealth, territorial, or local law.”).


161. Atlanta recently imposed a ban on public parks with $1,000 fine and up to six months in jail or community service for violators. Robbie Brown, In the Tobacco-Rich South, New Limits on Smoking, N.Y. TIMES, Jul 21, 2012, at A14. Sometimes, preemption
Additionally, there are some residential buildings in New York City that are smoke-free, meaning that an individual who smokes may be barred from smoking in his or her own home.\textsuperscript{162} Despite the varied regulatory approaches to cigarettes, the tobacco industry itself receives governmental support for its continued existence\textsuperscript{163} Thus, it continues to market its products.\textsuperscript{164}

IV. REGULATING SUGAR/REGULATING FOOD

[1] If we judge by its impact on human health, the American food supply is a disaster.\textsuperscript{165}

A. Regulating Sugar

Regulating sugar would undoubtedly prove controversial. People have been consuming sugar for more than two thousand years\textsuperscript{166} and most, presumably, do not associate any significant harm with its consumption. Consequently, any intrusion into personal freedom will likely be met with resistance. Former New York Governor David Patterson proposed a soda tax in 2009, for example, but lobbying and political conflict killed it.\textsuperscript{167} Likewise, Mayor Bloomberg’s proposal to limit portion sizes of sugary challenges are made to municipal restrictions, with plaintiffs arguing that the restrictions are preempted by more lenient state laws. See, e.g., Entertainment Industry Coalition v. Tacoma-Pierce Cty Health Dep’t., 153 Wash.2d 657, 105 P.3d 985 (2005) (local ordinance was preempted by more lenient state law). Subsequent to this decision the state legislature imposed stricter rules regarding smoking. See Wash. Rev. Code § 70.160.011.


\textsuperscript{163} 15 U.S.C. § 1331 (2). The Master Settlement Agreement Between the States and Tobacco Manufacturers also gives the tobacco companies assurance that in exchange for the payment of money, they will permitted to continue their business enterprises. KENNETH WING ET AL., Public Health Law 459 (LexisNexis 2007).

\textsuperscript{164} At least one person has noted that the industry itself could be abolished while keeping tobacco products legal, forcing smokers to grow their own products. See Raj Patel, Abolish the Food Industry, infra note 200.


\textsuperscript{166} Yudkin, supra note 8, at 12.

drinks has critics referring to a developing “nanny state.”168 Most regulations, therefore, should be at the level of production, focusing on improving the food supply rather than restricting consumer freedoms at the retail level. However, there are enough similarities between sugar and tobacco to warrant applying some, but not all, of the same regulatory approaches to sugar that are already applied to tobacco.

Tobacco generates direct health hazards for anyone in the vicinity of the user because of the dangers of second-hand smoke.169 The over-consumption of added sugar also harms more than just the person consuming it. The societal health costs associated with obesity, diabetes, and heart disease, among others, are huge.170 Everyone pays higher health insurance premiums to help pay for those who suffer from these illnesses.171 Thus, the societal economic harms associated with sugar consumption, while arguably more indirect than the threat of being near a smoker are quite real.172 Using tobacco as a model for addressing the health risks associated with added sugar through regulatory channels, a combination of federal, state, and local initiatives is likely to have the most significant impact.

First, given the large number of diseases linked to sugar consumption, obesity, heart disease, diabetes, and others, public health agencies are obligated to educate the public. After all, providing information is a central reason why public health agencies exist. Federal, state and local public health agencies can use their spending power for public health announcements and other initiatives to warn of the health hazards of sugar consumption, just as they have been used extensively to educate and warn of the dangers associated with smoking.173 Knowledge that smoking is bad

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168. See supra note 3.
169. See REPORT OF THE SURGEON GENERAL, supra note 120.
170. The United States Surgeon General estimated that the costs associated with obesity were 117 billion dollars in 2000. See infra note 187.
171. As America’s Waistline Expands, Costs Soar, REUTERS (Apr. 30, 2012, 6:00 AM), http://www.reuters.com/article/2012/04/30/obesity-idUSL2E8FO3MV20120430. The Affordable Care Act retains our substantial reliance on private, for-profit insurance companies, whose main mission is to make a profit. Therefore, they will raise premiums as needed to keep profits high. The public option, which failed to make it through the final round of the Act, would have created a source of competition for the private health insurance industry.
172. In addition to the economic hardships associated with the consumption of sugar, there are also emotional challenges for those living with people who are obese, suffering from heart disease or one of the many other ailments associated with sugar.
HOW TO REGULATE TOXIC FOODS

for one’s health is virtually universal.\textsuperscript{174} The same cannot currently be said of sugar. Therefore, making the public as aware of the dangers of sugar as they are of the dangers of smoking would be a worthwhile initiative.

In addition to educational initiatives, labeling and advertising restrictions that apply to tobacco products should be embraced and applied to sugar. This will help inform the public about the foods they are eating. Nutrition labels detailing sugar and fat content, should be enhanced to include not just the total number of grams of sugar per serving but also the number of grams of \textit{added} sugar per serving. Natural sugars, such as those from fruit,\textsuperscript{175} usually contain fiber and are not unhealthy in the same way that added sugars are.\textsuperscript{176} Just as the nutritional facts break down saturated, unsaturated and trans fats, they should also distinguish between the number of grams of added sugars versus natural sugars and state the total grams of sugar per serving. This will facilitate intelligent consumer decision-making.

Warning labels required on cigarette packages can be used as a model for warning labels on foods with added sugars. The warnings should contain current information about the risks associated with sugar consumption. Instead of requiring warnings on every food product with added sugar, the warning labels could be limited to products with, for example, more than ten grams of added sugar per serving.\textsuperscript{177} The warnings should be mandated at the federal level, as they are under the Cigarette Labeling Act, so they can be standardized throughout the country.\textsuperscript{178} This will help educate the public, and commercial speech considerations are more easily overcome for warning labels, which disclose information, than they would be for advertising restrictions.\textsuperscript{179}

In conjunction with improved nutrition labels and warnings, advertising

\begin{footnotesize}
\begin{enumerate}
\item Second Hand Smoke, \textsc{Nemours}, \url{http://kidshealth.org/teen/drug_alcohol/tobacco/secondhand_smoke.html} (last visited Jan. 8, 2013).
\item See \textsc{Here’s the Thing, supra} note 112.
\item Cf. \textsc{Steward et al., Sugar Busters: Cut Sugar to Trim Fat}, 63-64 (1995).
\item Ten grams is being used as an example. The scientific evidence should dictate the actual number. Most soft drinks have more than twenty grams of sugar, so this change would require warnings on most soft drink containers.
\item See \textit{supra} notes 125-26 and accompanying text.
\item Zauderer v. Office of Disciplinary Counsel, 471 U.S. 626, 673 (1985) (explaining that “[t]he courts have regularly held that mandating disclosure is a less burdensome imposition on commercial speech than placing prohibitions on such speech.” Thus the court rejected appellant’s contention that we should subject disclosure requirements to a strict “least restrictive means” analysis.). \textit{But see} \textsc{R.J. Reynolds Tobacco Co. v. FDA}, 2012 U.S. Dist. LEXIS 26257 (2012) (striking down FDA regulations requiring the display of textual warnings and graphic images that would cover the top fifty percent of every package of cigarettes). Cf. \textsc{Jonathan Mincer, Court Misapplies First Amendment to Strike Down FDA Cigarette Warning Labels}, \textsc{RegBlog} (Mar. 3, 2012), \url{http://www.law.upenn.edu/blogs/regblog/2012/03/court-misapplies-first-amendment-to-strike-down-fda-cigarette-warning-labels.html}.
\end{enumerate}
\end{footnotesize}
restrictions on food companies can be used strategically to limit sugar consumption, just as tobacco advertising restrictions attempt to discourage smoking. Every parent knows that Saturday morning television programming is filled with advertisements for junk food. Restricting advertisements targeted to young children who are easily influenced would be a start. Smokers usually begin smoking during adolescence, and the data shows that youths are more easily influenced by advertising and less likely to take seriously the health threats associated with their behavior.\textsuperscript{180} Due to this vulnerability and the pervasiveness of sugar-related illnesses, sugar-advertising restrictions are appropriate.

Advertisers will likely claim that such restrictions violate their first amendment right to commercial speech.\textsuperscript{181} Since advertising restrictions have been successfully implemented in the tobacco industry, one key question will likely be whether sugar is as harmful for health as smoking, and whether any proposed advertising restrictions pass muster under the Central Hudson test.\textsuperscript{182}

Pursuant to the Central Hudson test, the deciding court must first determine whether the commercial speech concerns a lawful activity and is not misleading.\textsuperscript{183} If the speech satisfies this analysis, the Court must determine whether the government has met its burden of showing that it has a substantial interest in regulating the speech.\textsuperscript{184} If it does, the regulation must directly advance that interest and be no more extensive than necessary to achieve its purpose.\textsuperscript{185}

Sugar consumption contributes to a variety of illnesses, including obesity, diabetes and heart disease.\textsuperscript{186} Given that the economic costs associated with obesity alone (not to mention the many other diseases associated with sugar consumption) was an estimated 117 billion dollars in 2000,\textsuperscript{187} the government arguably has a substantial interest in regulating sugar consumption, including advertising restrictions. And while sugar consumption is a legal activity, it could be argued that when advertisements focus only on the tastiness of the product without also disclosing its harms, 

\textsuperscript{180}. See supra note 139 and accompanying text.
\textsuperscript{181}. Tobacco companies have resisted advertising restrictions. See, e.g., Lorillard Tobacco Co. v. Reilly, 533 U.S. 525 (2001).
\textsuperscript{183}. Id.
\textsuperscript{184}. Id.
\textsuperscript{185}. Id.
\textsuperscript{186}. See supra Part I.
they are misleading.\textsuperscript{188} Prescription drug advertisements must include side effect warnings in addition to the potential benefits of the medication.\textsuperscript{189} Similar requirements should be imposed for products in excess of a set number of grams of sugar per serving.

In order to satisfy the \textit{Central Hudson} requirement that any regulation directly advance governmental interest and be narrowly drawn, advertising restrictions may initially be limited solely to advertisements directed to minors, on the theory that adults are capable of making their own informed choices. Alternatively, advertising restrictions could be imposed more broadly, but only to products with sugar content that exceeds a specified limit.

Age restrictions, which apply to tobacco products and alcoholic beverages, should not apply to added sugar. While tobacco and alcoholic beverages are consumed by choice, food is a necessity. And until we drastically change the food supply, most children will consume sugar before they are old enough to understand nutritional information. Once they are old enough to shop independently, it will be difficult to prohibit something they have grown accustomed to. It may be feasible to impose age restrictions; many grocery stores sell cigarettes, beer and wine while imposing the necessary age restrictions. But because added sugar is present in so many products, an age restriction may be difficult to monitor. For example, the entire cereal aisle of the typical grocery store might be off-limits, along with the soda, ice cream, and bakery sections.\textsuperscript{190} Therefore, monitoring age restrictions may be difficult and costly.\textsuperscript{191} A better approach would be to restructure grocery stores in a manner that embraces our understanding of how product placement influences purchasing decisions.\textsuperscript{192}

Perhaps the strongest argument against imposing an age restriction on

\textsuperscript{188} Central Hudson Gas & Electric Co. v. Public Service Comm’n, 447 U.S. 557, 565 (1980) (“[T]here can be no constitutional objection to the suppression of commercial messages that do not accurately inform the public about lawful activity”). This is why prescription drug advertisements generally end with a person informing of possible side effects associated with advertised drug.

\textsuperscript{189} 21 U.S.C. §§ 301 et seq.

\textsuperscript{190} \textit{See Here’s the Thing, supra} note 112.

\textsuperscript{191} Moreover, if the age restriction applies only to products with, for example, more than ten grams of added sugar per serving, manufacturers will likely re-formulate their products to come in just under the restrictive number of grams of sugar. Of course, this would be a good thing, especially if the number of sugar grams subject to an age requirement was continually adjusted downward so that eventually very few products contain excessive amounts of sugar.

\textsuperscript{192} \textsc{Richard H. Thaler} \& \textsc{Cass R. Sunstein}, \textsc{Nudge: Improving Decisions About Health, Wealth, and Happiness} 2-3 (2008) (noting that where items are placed has a significant impact on choice).
sugary products is the political backlash likely to occur that could nullify its impact. At a time when much of the population is concerned with too much governmental regulation, the quest for freedom would make age restrictions unlikely to succeed. Ideal regulations will focus at the level of production and limiting availability of unhealthy products in the first place. Even Mayor Bloomberg’s proposal to limit the size of sugary drinks, which arguably is less intrusive than age restrictions, is nonetheless controversial.

Mayor Bloomberg’s limit on container sizes of soft drinks is a creative approach to tackling the sugar problem. Portion sizes have grown over the years, embracing the notion that bigger is better. The original Coca-Cola bottle was 6.5 ounces. From there it went to ten ounces, then to the twelve ounce can, and now the standard twenty ounce bottle—more than three times the quantity of the original bottle. It is common knowledge on the part of anyone entering a grocery store, that finding a soft drink less than twelve ounces is difficult, limiting consumer choice. Therefore, even

193. Given the strong objections to relatively mild forms of regulation, like a soda tax or size restrictions, age requirements, which impact free choice much more directly, would likely be subject to a great deal of opposition.

194. First Lady Michelle Obama, for example, was criticized for her initiatives designed to combat childhood obesity. While she did not suggest laws restricting choice, some suggested that the government should not involve itself in any way in what we choose to eat. See, e.g., James Oliphant, Conservatives Dig Into Michelle Obama’s Anti-obesity Campaign, L.A. TIMES, Feb. 26, 2011, available at http://articles.latimes.com/2011/feb/26/nation/la-na-michelle-obama-obesity-20110227.

195. See supra note 3 and accompanying text.

196. Notice of Public Hearing, supra note 2. Virtually all snack foods have gotten larger over the past 50 years—candy bars, bagels, muffins—yet we eat these products and think that eating just one is reasonable. But eating one today is often the equivalent of 2 or 3 several years ago. Cf. Lisa R. Young and Marion Nestle, The Contribution of Expanding Portion Sizes to the U.S. Obesity Epidemic, 92 AM. J. PUB. HEALTH 246 (Feb. 2002), available at http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.92.2.246. Ironically, while efforts are being made to reduce the size of sugary beverages, cigarettes cannot be sold in packages of less than 20 cigarettes. If you want one, you must purchase another 19, which seems counter-intuitive. From a public health perspective, the cigarette purchaser should be permitted to buy just one. On the other hand, requiring the purchase of a full pack keeps the price high and is will arguably discourage use.

197. Definition of “the bigger the better”, CAMBRIDGE DICTIONARIES ONLINE, http://dictionary.cambridge.org/dictionary/british/the-bigger-the-better?ct=the+bigger+the+better#the-bigger-the-better__1 (last visited Dec. 8, 2012).


199. Brian Palmer, When Did Sodas Get So Big?, SLATE (Sept. 14, 2012, 2:03 PM), http://www.slate.com/articles/news_and_politics/explainer/2012/09/new_york_city_soda_ban_when_did_soft_drinks_get_so_big_in_the_first_place.html; See also Notice of Public Hearing, supra note 2. In addition, coca-cola and other sodas have high levels of sodium, which, as the companies know, makes people thirsty. This, they hope, will lead to higher sales volumes.
the absence of regulation does not necessarily enhance consumer choice.

The reality is that unfettered corporate marketing actually limits our choices about the products we consume. If what’s mostly available is junk food and soda, then we actually have to go out of our way to find an apple or a drinking fountain. What we want is to actually increase people’s choices by making a wider range of healthy foods easier and cheaper to get.

Portion control can be an important tool for regulating sugar and other calorie consumption. It does not preclude anyone from buying a product, and if the purchaser wishes, he or she can buy more than one. But many consumers will likely purchase a soft drink or candy bar or other sweetened product and eat it based on the portion size in which it is produced. If the drink is ten ounces, they will stop when they have finished the ten ounce bottle. If it is a twelve ounce can, they will likely stop when the can is empty. While portion size control may be effective, the public perception that choice is being restricted may limit its impact, and it is unclear what impact that backlash may have.

The Food and Drug Administration (FDA) is the agency charged with

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200. Laura Schmidt, Opinion: Why we should regulate sugar like alcohol, CNN.COM (Feb. 1, 2012, 1:12 PM), http://www.cnn.com/2012/02/01/health/opinion-regulate-sugar-alcohol/index.html. See FORUM HARVARD SCH. PUB. HEALTH, supra note 165 (discussing whether consumer choice is the root of the problem, a panelist points out that what is “affordable and available is junk.”). See also Raj Patel, Abolish the Food Industry, THE ATLANTIC, Feb. 6, 2012, available at http://www.theatlantic.com/health/archive/2012/02/abolish-the-food-industry/252502/ (“[O]ur choices are far from free, in no small part because of the commercial and cultural power of the food industry.” Analogizing to tobacco and the power of the tobacco industry, Patel points out that most smokers would not smoke if they could choose freely). Amy Dillard, supra note 102 (discussing children’s preference for healthy foods when it is provided as one of their options and the obstacles to including those healthy options under the 2007 Farm Bill.).


203. Id.

204. NOTICE OF PUBLIC HEARING, supra note 2. (“When people are given larger portions they unknowingly consume more and do not experience an increased sense of satiety. In one study, people eating soup from self-refilling bowls ate seventy-three percent more.”).

protection of our food supply. Currently, the FDA classifies sugar as a substance that is “generally recognized as safe” (GRAS). Without the GRAS classification, added sugar would be considered a “food additive” subject to FDA regulation. With the GRAS classification, it is not. The discussion in Part I points out that sugar is not safe unless consumed in small quantities. Otherwise, it can cause a great deal of harm. The FDA should re-classify sugar as a food additive and regulate it accordingly, just as it has taken a broad approach to regulating tobacco.

Taxing and spending are tools that have traditionally been used to modify behavior in the public health context. Cigarettes, as noted above, are heavily taxed to make them more expensive, in an effort to discourage use. Likewise, in an attempt to discourage the use of soda, former New York Governor, David Patterson, proposed a tax on sodas. Sodas have more added sugar than any other product, so they have been targeted because they contribute heavily to obesity and other diseases associated with excessive sugar consumption. And research suggests that when it comes to optional food items like sodas, consumers are sensitive to prices. They will consume less when prices are high and more when the prices are low. Therefore, at the very least, taxes should be imposed on sodas and other soft drinks with equally high sugar content. In addition, taxes should be imposed on products with ten or more grams of added sugar.

208. Food, Drug and Cosmetic Act, 21 U.S.C. §§ 301 et seq. See also Generally Recognized as Safe (GRAS), FOOD & DRUG ADMIN., http://www.fda.gov/Food/FoodIngredientsPackaging/GenerallyRecognizedasSafeGRAS/default.htm (last visited Nov. 13, 2012) “[A]ny substance that is intentionally added to food is a food additive, that is subject to premarket review and approval by FDA, unless the substance is generally recognized, among qualified experts, as having been adequately shown to be safe . . . Under . . . FDA . . . regulations in 21 CFR 170.3 and 21 CFR 170.30, the use of a food substance may be GRAS either through scientific procedures or, for a substance used in food before 1958, through experience based on common use in food.”).
209. Generally Recognized as Safe, supra note 208.
210. See supra note 150 and accompanying text.
211. See Confessore, supra note 167.
212. NOTICE OF PUBLIC HEARING, supra note 2. (“Sugary drinks are the largest source of added sugar in the average American’s diet, comprising nearly 43% of added sugar intake.” (citing J.F. Guthrie & J.F. Morton, Food Sources of Added Sweeteners in the Diets of Americans, 100 J. OF THE AM. DIETETIC ASS’N 43 (2000))).
213. FORUM HARVARD SCH. PUB. HEALTH, supra note 165; Foster, supra note 101, at 262 (“Clinical studies show that altering the price of foods significantly impacts consumer food choices.”) (citing HEATHER SCHOONOVER & MARK MULLER, INS. FOR AGRIC. & TRADE POLICY, FOOD WITHOUT THOUGHT: HOW THE U.S. FARM POLICY CONTRIBUTES TO OBESITY 8 (2006)).
214. Id.
per serving. Increased taxes will likely encourage manufacturers to limit the amount of added sugar per serving in their processed foods. And even if they do not limit the sugar content, the increased price will shift consumer-purchasing patterns to lower priced healthier products. Increased taxes will likely encourage manufacturers to limit the amount of added sugar per serving in their processed foods. And even if they do not limit the sugar content, the increased price will shift consumer-purchasing patterns to lower priced healthier products. In fact, those healthy products should also be subsidized through government spending. The targeted use of taxing and spending can significantly reduce consumers’ added sugar consumption.

B. Regulating Food

While sugar is toxic in itself, some of the challenges associated with it are symptomatic of a much larger problem. Added sugar is a symptom of a generally unhealthy food supply. To adequately address the problem of the food supply, we must engage in an honest assessment of what created it. First, farm bill food subsidies result in the overproduction of corn and other subsidized crops. They occupy so much of the agricultural landscape that we would have to “more than double our fruit and vegetable acreage” to satisfy the USDA’s recommended daily allowance of these items. The government, like the medical profession, should first “do no harm,” yet farm subsidies do a lot of harm. When we subsidize corn, it becomes attractive not only for farmers to over-produce but also for manufacturers to over-use in food processing, because the large supply reduces the price. The farm bill encourages agricultural growing patterns that are a disservice to consumers because the food supply becomes inundated with products made, for example, with high fructose corn syrup.

Our food system is fundamentally broken. A few companies dominate the market, prioritizing profits over people and our planet. Government policies put the interests of corporate agribusiness over the livelihoods of farm families. Farm workers toil in unsafe conditions for minimal wages. School children lack access to healthy foods—as do millions of Americans living in

215. Id.
216. See generally, Atwell, supra note 55, at 3.
217. For example, approximately eighty percent of the 600,000 food products examined by Dr. Larry Popkin are laced with sugar. Here’s the Thing, supra note 112. Any major grocery store will have far more shelf space for processed food products than whole foods like meats, fruits and vegetables. Ted Bendixson, Get Rid of Processed Food at the Grocery Store, SLATE, Feb. 22, 2011, available at http://hive.slate.com/hive/time-to-trim/get-rid-of-processed-foods-at-the-grocery-store.
218. See supra notes 85-87 and accompanying text.
HOW TO REGULATE TOXIC FOODS

poverty. From rising childhood and adult obesity to issues of food safety, air and water pollution, worker’s rights and global warming, our current food system is leading our nation to an unsustainable future.221

A number of policy changes could help to address some of the current food industry challenges. For example, the 2012 farm bill should shift agricultural policy by decoupling production from income support,222 which should assist small farmers. This will assure farmers that their incomes will be reasonable, while allowing them to diversify their crops. This will not only lead to an increase in acreage dedicated to healthier crops, like fresh produce, but will also help protect farmers who will be less dependent on the market price of a single crop.223

Furthermore, policymakers should create a system that minimizes the influence of outside lobbying.224 This could be achieved through the creation of an independent national Director of Food.225 The Director of Food could be a non-political appointee within the FDA. Alternatively, the Director of Food could be entirely independent of current administrative agencies. The key will be to appoint the Director in a manner that shields him or her from political pressure, while providing sufficient authority to

221. FOOD DEMOCRACY NOW, http://www.fooddemocracynow.org/about/ (last viewed Jan. 13, 2013). Efforts to address some other food supply problems are underway.

222. See supra notes 102-109 and accompanying text; see e.g., Food Safety Modernization Act, 21 U.S.C. § 2201 (2011) (giving FDA power over imported foods and ability to create standards to prevent food contamination.).

223. Foster, supra note 101 and accompanying text.


225. Cf. Kristof, supra note 104 (suggesting that the Department of Agriculture be renamed and its mission refocused on food. Kristof points out that today, only two percent of Americans are farmers, compared to thirty-five percent when the Department of Agriculture was formed.).
make real change.\textsuperscript{226} The Director of Food would replace the USDA in making recommended daily dietary guidance.\textsuperscript{227}

In order to change the food supply it may also be necessary to rethink what it means to be a good corporate citizen. Current lobbying efforts on the part of big food appear to have no regard for public health.\textsuperscript{228} Fundamentals of corporate law should shift, incorporating regulations to encourage corporate accountability to more than just shareholders.\textsuperscript{229} Corporate laws that emphasize profit maximization to the exclusion of all else should be re-evaluated. If other considerations were taken into account, perhaps lobbying would be brought under control.

CONCLUSION

At first glance, most would say that sugar is not the new tobacco. After all, we do not hear about more than 400,000 people dying annually from sugar consumption, a statistic commonly associated with smoking. However, the evidence suggests that sugar contributes to obesity, diabetes, heart disease, and some cancers. Therefore, sugar adversely impacts as many, or more, people than tobacco use. Accordingly, many of the legal restrictions applicable to tobacco products – warning labels, advertising restrictions and excise taxes – should also apply to processed foods with large quantities of added sugar. In addition, sugar is symptomatic of a larger food supply problem. To address the broader problem, food subsidies must be re-evaluated and changed. An independent, national Director of Food could alleviate some systemic problems. These changes would help create a food supply that improves public health, which is the appropriate role of a variety of governmental agencies at the federal, state and local levels.

\textsuperscript{226} While it may be impossible to ensure complete independence, there are other models, like the Congressional Budget Office, that could provide guidance. \textit{See Overview}, CONG. BUDGET OFFICE, \url{http://www.cbo.gov/about/overview} (last visited Jan. 13, 2013) ("Since its founding in 1974, the Congressional Budget Office has produced independent, nonpartisan, timely analysis of economic and budgetary issues.\ldots\). All CBO employees are appointed solely on the basis of professional competence, without regard to political affiliation."). The Surgeon General is also charged with advancing the public health and could be a key participant in making necessary changes. \textit{Duties}, SURGEON GENERAL\@GOV, \url{http://www.surgeongeneral.gov/about/duties/index.html} (last visited Jan. 13, 2013).

\textsuperscript{227} The USDA has arguably become an honorary member of the food industry rather than a regulator of it. Steve Johnson, \textit{The Politics of Meat}, PUB. BROAD. SYS., \url{http://www.pbs.org/wgbh/pages/frontline/shows/meat/politics/}.

\textsuperscript{228} \textit{See} Patel, \textit{supra} note 200.

\textsuperscript{229} \textit{See generally} STOUT, \textit{supra} note 100.