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Curing the Obesity Epidemic: The Government's Obligation to Regulate Food

by

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Abstract

Curing the Obesity Epidemic: The Government's Obligation to Regulate Food

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The first chapter demonstrates the impact of the obesity epidemic in the United States. The epidemic affects obese individual directly, and burdens all US citizens. The second chapter is an argument as to why the obesity epidemic should be addressed by government intervention. The US regulates risky substances such as consumption of alcohol, tobacco, and marijuana, and risky behaviors such as driving. This work explores why food is morally equal to other risky substances. The final chapter explores several food regulation policy options.

Chapter 1: Understanding the Consequences of Obesity

Obesity: Who's Fault is it Anyway?

Meet Noah “Biingo” Gray.¹ He is thirteen years old, from New Windsor, Maryland. He became overweight at ten years old, when his family moved to Virginia due to employment reasons. Biingo sought comfort in food with the challenge of adjusting to a new life, and he soon faced bullying and teasing as he gained weight. He likes to be physically active and plays sports with his friends, but he is frustrated with his weight’s limitations. His parents are overweight but are deeply concerned for their family’s health and want to help Biingo lose weight. Luckily for Biingo, he became a participant on NBC’s hit show “The Biggest Loser” and his family is being coached on how to lose weight and live a healthy lifestyle.² However, most people do not have access to health coaches such as Biingo and do not know how to realistically live a healthy lifestyle.

Why did Biingo become overweight? In this chapter of my thesis, I will dissect the various layers to this question. I will first describe the extent to which individuals and social forces are responsible for the state of obesity in the United States. Next, I demonstrate the severity of the epidemic from a public policy stance and show why the government needs to combat it. The goal of this chapter is to demonstrate that obesity affects individuals, families, and society as a whole. Combating obesity improves the quality of life for those who suffer from the condition, as well as relieves the financial and social burdens obesity places on the nation. Much of the information from this chapter is frequently discussed in the media, reflecting many

¹ “Biingo.”

² Ibid.

Americans' concern about this issue. This essay is a small contribution to the ever-growing research on how to best address the obesity epidemic. Many policies and studies have developed rapidly as I worked on this project, and it is very possible that some of my policy suggestions may be implemented in the near future.

In the second chapter, I will demonstrate through a normative argument that it is morally permissible to regulate food, just as we regulate tobacco and substances that affect public health. Many people recognize the potential for public health policies to reduce obesity rates, however, they object because they do not believe the government has the right to interfere with people's autonomy. These objectors claim that obesity reduction policies are paternalistic. In the second chapter, I demonstrate that obesity regulation is morally equivalent to the already accepted and implemented paternalistic public health policies in the US. In the final chapter, I will explore some regulation options and evaluate what steps are needed to reduce obesity and its related illnesses. The obesity epidemic is continuing to grow and harm our population; it is my goal that I will motivate my readers to support government action to reduce obesity, as well as to support leaders in their communities who are striving to improve health outcomes.

Understanding the Multiple Sources of Obesity

Obesity is a condition that results from a complex array of factors. I begin by exploring the role of the individual, followed by an analysis of the role of external factors. Fundamentally, individuals choose what they consume and how often they exercise; therefore it is within the

individual's control to change their behavior. However, it is clear that families, education, and community resources also affect the individual's likelihood of success. Evidence shows that people can change their condition, but success is much more likely with community support.

Individuals and Families are Responsible

It is natural to first blame the individual for his or her obese condition. For example, it is logical to claim that Biingo is responsible for being obese. Historically, scholars and opinion leaders have treated obesity as a failure of the individual to make healthy decisions.³ The food industry has supported advocates of personal responsibility because this ideology translates to permitting the industry to make unhealthy products without being held accountable for poor health outcomes.⁴ Some people believe that it is wrong for paternalistic policies to be implemented, which limit autonomy or use force to prevent obesity. For example, McDonald's Corp. CEO Jim Skinner said:

We believe in the democratic process and our government officials believe in the democratic process... This is about choice, this is about personal, individual right to choose in the society we live in... We [McDonalds] provide many choices that fit with the balanced, active lifestyle. It is up to [children] to choose and their parents to choose, and it is their responsibility to do so.⁵

³ Steinbrook, "Imposing Personal Responsibility for Health"; Brownell et al., "Personal Responsibility And Obesity"; Bernard, "Obesity Problem Is About Personal Responsibility and Access."

⁴ "How The Food Industry Is Enabling The United States' Obesity Epidemic."

⁵ "McDonald's CEO Defends Spokesclown, 'Right To Choose' Fast Food."

Some people believe that the food industry has taken this logic too far.⁶ Food manufacturers have made unhealthy products and have not been held liable due to the consumers' freedom to choose their diet. Consumers have expressed their distrust of the fast food industry and several people have tried to sue fast food establishments for making them fat, beginning in 2002.⁷ Caesar Barber brought the first case to court. Barber was a fifty-six-year-old maintenance worker who had been eating fast food several times a week for at least twenty-five years. Barber claimed that the fast food establishments he frequented deceived him, and he believed the items he was eating were healthy choices. Barber said in an interview, "They said '100 percent beef.' I thought that meant it was good for you...I thought the food was OK."⁸ Barber's case was ultimately dismissed from court in 2003, because the judge stated that the case did not demonstrate that McDonalds presented any hidden dangers.⁹ However, this case indicated that it would be possible to address the questionable practices of the fast food industry as long as the lawyers could strengthen their case.

The most famous lawsuit on this issue is *Pelman v. McDonald's*. This case fought to protect children who ate at McDonald's regularly and allegedly became obese or overweight and developed diabetes, coronary heart disease, high blood pressure, elevated cholesterol intake, or other health effects as a result.¹⁰ The plaintiffs ranged from 14-19 years old (along with their parents), and ate at McDonalds 3-10 meals per week consistently for at least 7 years each. The *Health Affairs* report on litigation against the fast food industry summarizes the dilemma:

⁶ "Fast Food Restaurants Not Fighting Child Obesity."

⁷ Mello, Rimm, and Studdert, "The McLawsuit."

⁸ Kinsley, "A Lawsuit to Choke On."

⁹ Wald, "McDonald's Obesity Suit Tossed."

¹⁰ Mello, Rimm, and Studdert, "The McLawsuit."

This kind of litigation raises the important question of whom, if anyone, ought to be held accountable for the economic and public health consequences of obesity. Courts have spent the past three decades answering that question as it relates to tobacco-related illness, another public health problem of staggering proportions. Lawsuits brought against tobacco companies initially were greeted with the same disparaging reaction and gloomy legal predictions that the fast-food lawsuits are now receiving—yet the tide of public and legal opinion has shifted to place responsibility for the harms of smoking squarely on the tobacco industry.¹¹

It is challenging to determine the extent to which any particular food establishment or product is responsible for consumer weight gain. I believe that it is not worthwhile to invest time and money into research to determine the health effects of specific food companies or products. Policy makers and researchers should focus on how to improve health outcomes rather than finding a scapegoat for obesity rates. Whether legislators agree with my opinion, or simply wanted to keep matters of personal responsibility out of the court, they have gone as far as to propose policies that *protect* food manufacturers from being held accountable for weight gain and other health outcomes due to the public's consumption of their food. In 2005, the highly controversial "Cheeseburger Bill" was proposed to address the rise in litigation against fast food. The bill, formally called the Personal Responsibility in Food Consumption Act of 2005, "Prohibits new and dismisses pending civil actions by any person against a manufacturer, marketer, distributor, advertiser, or seller of food or a trade association for any injury related to a person's accumulated acts of consumption of food and weight gain, obesity, or any associated

¹¹ Ibid.

health condition.”¹² The bill passed in the House but not in the Senate. However, about 20 states passed similar legislation. One can see that many people believe that it is wrong for food regulation limits autonomy and individuals should be expected to moderate their own diets.¹³

Proponents of the Personal Responsibility in Food Consumption Act may find obesity prevention proposals paternalistic. Many people find paternalism wrong because no one has the authority to determine what is best for another person.¹⁴ They believe the government’s top priority should be to maximize peoples’ ability to make their own choices regarding their lives.¹⁵ One instance of impermissible paternalism is demonstrated in John Stuart Mill’s harm principle. He states:

That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. He cannot rightfully be compelled to do or forbear because it will be better for him to do so, because it will make him happier, because, in the opinions of others, to do so would be wise or even right. These are good reasons for remonstrating with him, or reasoning with him, or persuading him, or entreating him, but not for compelling him or visiting him with any evil in case he do otherwise.¹⁶

This ideology is evident in the discussion on combating obesity today. Many people believe their food choices are a personal issue, and their diets do not affect other people. Therefore, no person

¹² “Text of H.R. 554 (109th).”

¹³ Sunstein, “It’s For Your Own Good!”.

¹⁴ Ibid.

¹⁵ “What’s Wrong with Paternalism and The.”

¹⁶ Mill, *On Liberty*.

or governing body has the right to interfere with their eating habits.¹⁷ Justin Wilson from the Center for Consumer Freedom explains the roles of the individual and government in reducing obesity:

No one is forcing us to eat too much junk food or sit on the couch all day long and watch television. We're doing it to ourselves. Since personal irresponsibility got us into this mess, it's going to take personal responsibility to get us out of it. That is the proper role of public health. Government should provide consumers with incentives, information and opportunities so that we can make smart choices and take responsibility for ourselves.¹⁸

To a certain extent, Wilson and Mill are correct. There are plenty of people who are obese and have the means to eat better. Let's return to the case of Biingo's family; they are not affluent and have the capability to keep healthier foods in the house. Biingo and his family will need to take responsibility for their unhealthy behaviors and make changes in order to become healthy, but assigning them this responsibility will not solve the issue. Biingo's family needs help making lifestyle changes.

It is especially unreasonable to blame children for their obese condition because they are not responsible for purchasing or cooking food. Children like Biingo receive food from their parents, their schools, and their other periodic caretakers (from babysitters to friend's parents). While individuals and their families must take ownership of the poor choices they have made, often these choices are made out of ignorance of the alternatives. I reject the claim that obesity is always a choice and believe people will choose a healthy lifestyle if they are educated on how to

¹⁷ Sunstein, "It's For Your Own Good!".

¹⁸ "Should the Government Help You Lose Weight?".

do so. In Biingo's case, it is clear that he did not choose his unhealthy lifestyle and is not responsible for his condition.

While Biingo is not responsible for his obese condition, his parents are responsible for creating the environment and establishing the habits that led to his weight gain. The family eats most of their meals at home, and their pantry is full of sweets and highly processed snacks. Biingo's family was hit hard by the economic recession in 2008, and Biingo's parents are very conscious of their food spending.¹⁹ Biingo's parents want to create a healthy home within their economic means, but they are ill informed on how to do so. They are slightly overweight and have some health issues because they don't understand how to live differently. Luckily Biingo's family received assistance and education from The Biggest Loser program. There are millions of families like Biingo's that are eager to change their lives but need assistance and perhaps some oversight in order to succeed in building a healthier lifestyle. There is an inevitable cycle of overweight parents teaching their children unhealthy lifestyle habits out of ignorance. For example, Biingo has expressed his aversion to vegetable to the point where his mother had nearly eliminated them from his diet. The family's dinners consist of carbohydrates (such as pasta) and meats. The nutritionists on The Biggest Loser taught Biingo's mother how to incorporate vegetables into meals in a subtle way, such as loading pasta sauce with pureed vegetables. There are many opportunities to increase health education in the US. Options include health education in public schools, employee wellness programs, or classes/workshops at health care offices or pharmacies. Many of these programs already exist, yet they are not extensive enough--many people still don't have access to preventive education.

¹⁹ "Biingo."

It is appealing to focus on children when dissecting the obesity epidemic because it is clear that they are not responsible for their condition. However, children are not the only population with rising obesity rates. In fact, in 2010 researchers found that obesity is growing fastest among Americans with an annual income over \$60,000 a year.²⁰ The rise in obesity in this population is largely attributed working longer hours, longer times being sedentary while commuting and working at a computer, and eating at restaurants (or take-out) more frequently. This population does have some control over the factors that lead to weight gain. Making exercise a priority, grocery shopping and meal planning, and eating in a more health-conscious manner while at work are viable options for many. Obesity prevention campaigns have been effective with this sect of the population because they are able to make small changes and improve their wellbeing.²¹

There are many obesity intervention programs already in place in the US that are based on helping people make small changes in their lives in order to develop healthy habits and ultimately lose weight. One example of a model of program that has been successful for many communities is community-wide weight loss competitions supported by various organizations and resources, such as a program conducted by the NJ Collaborative for Excellence in Public Health. This program was ten weeks long in Montgomery, New Jersey in June 2010. To hold participants accountable and help them succeed, the program included cash prizes for the winners, online forums, group weigh-in events, email reminders and assignments, and access to flyers and online educational materials. 16 people participated with an 88% retention rate during the 10 weeks. Those who participated in yoga had a higher likelihood of losing weight (RR 1.5), as well as those who engaged in the online support group (RR 3.7). In this study specifically,

²⁰ "Wealthy Closing Obesity Gap."

²¹ Chan and Woo, "Prevention of Overweight and Obesity."

participants who actively used the Google group software lost an average of 7 pounds, whereas the average non-user lost only 1.9 pounds. This is a small sample, and long-term success data is not available for this population. However, programs such as Montgomery's are increasingly common and are one of many plausible ways to help overweight and obese individuals become healthy.²² Individuals are capable of making lifestyle changes and improving their health if they are given the resources and education on how to do so.

The one limitation with relying on weight loss programs such as Montgomery's is that the people who need it most are the least likely to participate and often are the participants who drop out before they have achieved the desired results. In the Montgomery program, 3 participants were considered to be of "normal" weight, 7 were overweight, and 6 were obese; the participants who dropped out were overweight (1) and obese (1).²³ Although the analysis of the program did not specify why the participants dropped out, I suspect they stopped the program for psychological/emotional reasons. According to the Stages of Change Model, originally developed in the late 1970's and early 1980's researchers were studying how smokers were able to give up their habits or addiction, people must be in the right mindset in order to make lasting changes in their lives.²⁴ The stages of change are precontemplation, contemplation, preparation/determination, action/willpower, maintenance, and relapse. I suspect that the obese people who drop out of intervention programs are still in the precontemplation or contemplation stages. These programs have self-selecting participants; therefore it is likely that most participants are in a mindset to create change. However, we cannot expect this model of

²² Carey, "Montgomery Township Health Department: Increasing Success Rates in Community Obesity Prevention Programs."

²³ Ibid.

²⁴ "Stages of Change Model."

intervention alone to make a significant impact on the obese population because most obese people are not actively seeking help.²⁵

Regardless of the cause of their non-compliance, drop out is a major issue in obesity intervention programs. A meta-analysis of 244 intervention programs found the drop out rates to be between 14% and 23%. Surprisingly, the researchers did not find a significant correlation between intensity of the intervention and drop out rates. This indicates that interventions with high expectations of participants and lofty goals may be equally successful as more conservative intervention programs.²⁶

A Lack of Education

The lack in education highlights the larger systemic issue. Who is responsible for educating the public? Health education occurs in public schools for children but is limited in scope and effectiveness at the moment.²⁷ People learn about health and nutrition from various sources. According to the 2009 National Grocers Association Consumer Panel Survey, 70% of consumers obtain nutrition information from the Internet, followed by television (67%), newspapers (40%), supermarkets (32%), books (32%), friends and family (31%), and doctors (24%).²⁸ One of the predominant sources of nutrition information is the USDA's MyPlate (formerly MyPyramid) nutrition guideline program. USDA's information has been taught in public school curriculums, and organizations can order materials to educate their members (such as wellness departments of corporations). However, according to a 1999 study (which is the most

²⁵ Macqueen, Brynes, and Frost, "Treating Obesity."

²⁶ Fox, "Intense Obesity Interventions Don't Increase Attrition."

²⁷ Sharma, "Dietary Education in School-Based Childhood Obesity Prevention Programs."

²⁸ "Where Do YOU Get YOUR Nutrition Information?"

recently cited study on the USDA website), only about 30% of Americans were familiar with the national dietary guidelines.²⁹ This number has probably risen in the last decade due to publicity surrounding the 2005 publication of MyPyramid and the 2010 introduction of MyPlate.

MyPyramid was a pyramid-shaped diagram, which showed the recommended number of servings of each food group, plus a recommendation for exercise.³⁰ MyPyramid received much criticism for being unclear and difficult to utilize on a daily basis. The USDA responded by creating a new graphic of a plate with the appropriate portions of each food group, fittingly named MyPlate.³¹ The response to MyPlate has been mostly positive. It is much easier to teach children how to make their meals mimic the MyPlate icon, rather than comply with the pyramid symbol.³²

The fundamental problem with the current model is that many of the nutrition resources available require people to actively seek out information. Although some nutritional information is taught in the education system, it is limited in scope and there is a lack of data on the effectiveness of current nutrition education practices.³³ Currently, there is no federal requirement for nutrition education, but some states have adopted mandatory health education components to their curriculums.³⁴ While I commend those states for taking action, it is important that the US has a universal standard of nutrition education. It is unreasonable to hold children to different

²⁹ “USDA Economic Research Service - AIB750”; Guthrie, Derby, and Levy, *America’s Eating Habits: Changes and Consequences. Chapter 13: What People Know and Do Not Know About Nutrition.*

³⁰ See Appendix

³¹ “MyPlate 5 Food Groups Nutritional Graphic - Replaces the Pyramid”; “American Council On Exercise.”

³² See Appendix

³³ Sharma, “Dietary Education in School-Based Childhood Obesity Prevention Programs”; Veugelers and Fitzgerald, “Effectiveness of School Programs in Preventing Childhood Obesity.”

³⁴ “State School Healthy Policy Database: Nutrition Education.”

nutrition education standards based on where they happen to live. The lack of a universal education standard on nutrition may be a factor of unequal health and obesity outcomes across the country.

The responsibility of educating the public on the importance of a healthy diet falls heavily on primary care physicians, however perhaps this obligation should be placed elsewhere.³⁵ Physicians spend very little time during their education learning about nutrition, and there are plenty of nutritionists and registered dieticians in the US who are more capable of educating the public.³⁶ In addition, people should not have to travel to the doctor to learn about nutrition. Especially if patients are charged a co-pay to visit their primary care physician, they will find very little incentive to contact their doctor for nutritional guidance. Nutrition education should be easily accessible and there should be incentives for the public to seek information. For example, an extreme policy suggestion is to create a mandatory federal program enacted to ensure people are informed before they have the right to purchase unhealthy food—this would cause national food purchasing and consumption trends to shift. Although I do not think this policy is likely, evidence has already been established that nutrition programs can be effective in changing people’s eating behavior.

A meta-analysis in the *Asian Pacific Journal of Clinical Nutrition* found “An analysis of the evidence from over 300 studies shows that nutrition education is more likely to be effective when it focuses on behavior/action (rather than knowledge only) and systematically links relevant theory, research and practice.”³⁷ Effective nutrition education programs have three essential phases or components: a motivational phase, an action phase, and an environmental

³⁵ Truswell, “Family Physicians and Patients: Is Effective Nutrition Interaction Possible?”.

³⁶ “What Doctors Don’t Know About Nutrition.”

³⁷ Contento, “Nutrition Education: Linking Research, Theory, and Practice,” 177.

phase.³⁸ The motivational phase is crucial to increase awareness of the importance of proper nutrition and give students an understanding of why they need to make dietary changes. The goal of the action phase is to facilitate the ability to take action by educating participants on how to make concrete changes in their lives. The environmental phase consists of nutrition educators and policymakers collaborating to promote environmental support and help entire communities improve their health.³⁹ I highlight this meta-analysis because it is important to recognize that there are education-based interventions already being designed and implemented. A more unified, larger scale effort to educate the public on proper nutrition is required to dramatically improve health outcomes. I will elaborate more on my recommendations for a nutrition education program in Chapter 3.

The Role of the Government

In the United States, the government strives to promote its citizens' well being. One aspect of well being is being healthy; therefore the government creates policies to enable people to live healthily. Tobacco use is the leading preventable cause of death in the US, which has led public health officials to create policies to reduce tobacco consumption and improve health outcomes.⁴⁰ Obesity is the second highest preventable cause of death in the United States⁴¹, yet many people argue that regulations to reduce obesity are impermissible. Obesity is a public health issue because it causes morbidity. Just as the government should regulate tobacco for the sake of public health, so too the government should implement regulations to reduce obesity's

³⁸ Contento, "Nutrition Education: Linking Research, Theory, and Practice."

³⁹ Ibid.

⁴⁰ Health, "Smoking and Tobacco Use; Fact Sheet; Tobacco-Related Mortality."

⁴¹ Thoenen, *Obesity: Facts, Figures, Guidelines*.

harm to society. In the remainder of this chapter, I will demonstrate that obesity is a public health issue, and then establish the direct and indirect costs related to obesity.

Understanding Public Health and Obesity

Let me begin by defining public health issues. Public health, as defined by the World Health Organization (WHO), is “an organized effort by society, primarily through its public institutions, to improve, promote, protect and restore the health of the population through collective action.”⁴² Public health policy is one of the government’s tools to protect citizens’ right to life, liberty, and the pursuit of happiness. In order to guarantee people the right to life, they must have the opportunity to live a healthy life. This includes health promotion endeavors, as well as enacting paternalistic public health policies. Generally speaking, the process of improving a society’s health is to first identify behaviors that lead to increased morbidity or mortality and secondly, to implement policies to change those behaviors. By definition, public health officials are required to actively prevent morbidity and mortality in order to improve health outcomes.

This definition also allows us to identify obesity as a public health issue. Obesity is a public health problem because it is a condition that increases morbidity. The Center for Disease Control declared more than one-third of adults and almost 17% of children in the United States to be obese in 2009-2010,⁴³ and the data does not forecast a decline unless major changes are made to the American diet. First Lady Michelle Obama deemed obesity an “epidemic”, which

⁴² Starfield, “Basic Concepts in Population Health and Health Care.”

⁴³ “Overweight and Obesity.”

has heightened awareness of this issue.⁴⁴ Obesity, which is defined as having a body mass index (BMI) of 30 or higher, is linked to many illnesses.⁴⁵ Medical conditions with a statistically significant relationship to obesity include various cardiovascular diseases, diabetes, hypertension, cancer, kidney disease, strokes, osteoarthritis, sleep apnea, metabolic syndrome, polycystic ovary syndrome (PCOS), complications with reproduction/sexuality, thyroid conditions.⁴⁶ The causal relationship between most of these conditions has been demonstrated through research projects in which individuals were assisted in losing weight and their conditions were reduced or eliminated.⁴⁷

Many obesity-related illnesses are chronic illnesses. “In general, chronic illnesses are slow in progression and long in duration, and they require medical treatment. All chronic illnesses have the potential to limit the functional status, productivity, and quality of life of people who live with them.”⁴⁸ Unfortunately for policy makers, it is often difficult to prove that obesity itself is the cause of death. However, it is often apparent that obesity is a contributing factor in people’s deaths and reducing obesity would certainly improve health outcomes. Not only does obesity increase morbidity as it leads to other illnesses; it also decreases ones’ quality of life because it compromises their ability to live life to the fullest.⁴⁹ Health-Related Quality of Life (commonly referred to as HRQL or HRQOL) surveys are based on self-reporting. These surveys range in length from 5-30 minutes long and are used in medical facilities around the world. Most HRQLs are broad to capture quality of life data for large populations; however there

⁴⁴ “Exclusive.”

⁴⁵ Behan and Cox, *Obesity and Its Relation to Mortality and Morbidity Costs*.

⁴⁶ “Obesity-Related Diseases”; Behan and Cox, *Obesity and Its Relation to Mortality and Morbidity Costs*.

⁴⁷ Behan and Cox, *Obesity and Its Relation to Mortality and Morbidity Costs*.

⁴⁸ *Living Well with Chronic Illness: A Call for Public Health Action*.

⁴⁹ Wadden and Phelan, “Assessment of Quality of Life in Obese Individuals.”

are some obesity-specific HRQLs that are used today as well.⁵⁰ The generic HRQLs address issues that most people would consider important to their health such as mobility, self-care, and physical, emotional, and social capabilities.⁵¹ Obesity negatively impacts all of the factors above. Living with chronic illnesses can have physical, psychological, and social implications, which I will now explore in more depth.

Physical, Mental, and Psychological Limitations Due to Obesity

Individuals who are obese consistently perceive their general physical health to be worse than healthy-weight individuals. Each obesity-related illness has its own set of physical limitations. These include limited mobility, trouble sleeping, reproductive issues, and chronic pain.⁵² More specifically, obesity has noticeable negative effects on multiple organ functions that affect individuals' abilities to function. The most notable limitations are felt on heart and vascular system, respiratory system, musculoskeletal system, and skin. Even those who are not knowledgeable on the scientific health consequences of obesity can identify decreased quality of life. Examples include physical limitations due to shortness of breath or cardiac trouble, limited range of motion, and bodily pain.⁵³ Obesity even changes one's gait pattern; in terms of biomechanics, obese people are shown to walk "with a shorter step length, lower cadence and velocity, a decrease in the duration of the simple support phase and an increased double support phase".⁵⁴

⁵⁰ Ibid.

⁵¹ Guyatt et al., "Guides to the Medical Literature: Xii. How to Use Articles About Health-related Quality of Life."

⁵² "Health Effects of Morbid Obesity."

⁵³ Kushner and Foster, "Obesity and Quality of Life."

⁵⁴ Nantel, Mathieu, and Prince, "Physical Activity and Obesity."

Obesity can also lead to the development of mental health disorders due to the disruption of hormonal pathways related to lower levels of physical activity and/or unhealthy diets and loss of control in eating. Evidence suggests that there are bi-directional associations between depression and obesity. One longitudinal study found that obese people had a 55% increased risk of developing depression over time, and depressed persons had a 58% increased risk of becoming obese.⁵⁵ Mental health disorders are truly a disability; people with these disorders are unable to maintain employment or relationships with their families. Mental health disorders may make people lethargic and unable to sleep, therefore limiting their capabilities.⁵⁶ Exercise is a commonly cited therapy to improve one's mood, but obese people may not be able to exercise.⁵⁷ Therefore obese individuals may feel hopeless in their condition.

Mental disorders due to obesity not only negatively affect one's quality of life directly; they can have indirect psychological consequences. The most notable consequences of obesity are decreased self-esteem and depression.⁵⁸ An expert panel of doctors on obesity claimed, "Obesity creates an enormous psychological burden. In terms of suffering, this burden may be the greatest adverse effect of obesity."⁵⁹ Obese individuals face discrimination, which affects their social lives due to the belief that excess weight reflects a lack of personal control. For example, one study found that children as young as six label silhouettes of obese youngsters as "lazy, stupid, cheats, lies, and ugly."⁶⁰ Another study found that obese youth were more socially withdrawn, had less leadership abilities and displayed greater aggressive-disruptive behavior. Peer responses among students also noted obese children as less physically attractive, less

⁵⁵ Gattineau and Dent, *Obesity and Mental Health*, 3.

⁵⁶ "Depression, Major."

⁵⁷ Engstrom, "Obesity and Depression"; "Depression (major Depression)."

⁵⁸ "Psychological Side Effects of Morbid Obesity and Other Obesity Statistics."

⁵⁹ Kushner and Foster, "Obesity and Quality of Life."

⁶⁰ "Obesity: Complications."

athletic, more sick, tired, and absent from school.⁶¹ Therefore discrimination based on body size starts at a young age and can have significant implications on people's abilities for success in the future.

Discrimination against obese individuals is not only detrimental for the victims; it has shaped social dynamics in the US as a whole. Experimental studies have demonstrated that discriminatory perceptions of obese lead to inequality in the workplace and schools. Studies from as early as the 1980s have shown that all other variables being equal, an obese person is less likely to be hired for a position than a non-obese person.⁶² These studies have tested hiring preferences by manipulating perceptions of employee weight, using written descriptions, photographs, or (more recently) videos. One of the newest studies used videotaped mock interviews with the same professional actors acting as job applicants for computer and sales positions in which weight was manipulated with theatrical prostheses. The study found a significant employment bias in favor of average-weight applicants, compared with overweight applicant. The bias was more apparent for women than for men. One's weight not only made a candidate less likely to be selected, obese applicants were more likely to be recommended for a systems analyst position than for a sales position.⁶³ A literature review by Puhl and Brownell in the 2001 *Obesity Research* journal found additional studies confirmed these biases. Some studies had participants rate job applicants based on videotapes of simulated hiring settings, while other studies had participants evaluate candidates based on resumes and written descriptions of the candidates' physical appearances. These studies consistently found that obese applicants were

⁶¹ Zeller, Reiter-Purtill, and Ramey, "Negative Peer Perceptions of Obese Children in the Classroom Environment."

⁶² Puhl and Brownell, "Bias, Discrimination, and Obesity."

⁶³ Pingitore et al., "Bias Against Overweight Job Applicants in a Simulated Employment Interview."

selected for less visible, and more behind-the-scenes positions. One study found “obese applicants were more likely to be recommended for a systems analyst position than for a sales positions” and another obese people were “unfit in public sales positions and more appropriate for telephone sales involving little face-to-face contact.”⁶⁴ Puhl and Brownell also found overweight people are not only limited in their job opportunities, they are less likely to be assigned to challenging sales territories and more likely to be disciplined harshly than non-overweight employees, according to studies of sales managers and supervisors.

Even physicians are unsympathetic towards obese individuals. Many obese people feel uncomfortable talking about their weight with their doctors because they are treated differently.⁶⁵ One study found that doctors associate obesity with noncompliance, hostility and dishonesty. Another study found that health care professionals often believe obese people are indulgent or lack willpower. This study also recognized that obesity is frequently caused by emotional problems; doctors recognize the complexity of the causes of obesity, yet they ultimately hold the patient responsible for his/her condition.⁶⁶ Obese individuals face a world of discrimination from family, friends, employers, physicians, and strangers on a daily basis. There are countless other examples of informal discrimination that affect the mental and emotional well being of individuals who are obese. These include separate clothing stores, additional transportation costs (such as the requirement to purchase two airplane seats when flying), and the prevalence of “fat jokes” in pop culture. In addition to discrimination, obese and overweight individuals may not be

⁶⁴ Puhl and Brownell, “Bias, Discrimination, and Obesity,” 789; Pingitore et al., “Bias Against Overweight Job Applicants in a Simulated Employment Interview”; Everett, “Let an Overweight Person Call on Your Best Customers? Fat Chance.”

⁶⁵ Hoffman, Chaykin, and Teale, *The Weight of the Nation*.

⁶⁶ Puhl and Brownell, “Bias, Discrimination, and Obesity,” 792.

able to participate in activities they enjoy due to their condition, which can lead to depression.⁶⁷ It has become evident that obesity leads to a decreased quality of life and increases morbidity; therefore it is a public health problem.

Food Oppression

Many people who are obese do not have the option to be healthier. Poor populations are susceptible to food oppression due to a lack of access to healthy foods and an overabundance of fast food restaurants in their vicinities. Food oppression can be defined as human deprivation due to a lack of access to adequate food. University of San Francisco Law scholar Andrea Freeman's report on this topic demonstrates that food oppression, which is caused by "institutionalized practices and policies of government and the fast food industry" undermines both the survival and well being of low-income communities.⁶⁸ Market forces have moved supermarkets out of urban areas to meet the demand created by suburban sprawl, which has left urban residents with few to no healthy food options. Grocery stores have incentives to serve suburban populations because they can reach a larger, more mobile, and more affluent population. "As the number of grocery chains decreases through consolidation, market pressures to increase profits and cash flow have led to a business model of multi-service operations demanding higher per-store sales."⁶⁹ In the current US food system, there is no incentive for supermarkets to stay in low-income, at-risk communities. The consequences are populations (often African American and Latino) that suffer disproportionately from preventable diseases that are largely caused by nutritionally poor diets because of a lack of access to better food. The rates of chronic illnesses

⁶⁷ "Obesity: Complications."

⁶⁸ Freeman, *Fast Food*.

⁶⁹ *Ibid.*, 2227.

and morbidity due to obesity are exorbitant in these populations. As I have established earlier in this chapter, the quality of life for individuals in these communities is therefore compromised, which perpetuates the poverty cycle. Yet fast food oppression does not just affect these communities; health care costs are impacted nationally because tertiary care for obese people is much more expensive than preventing the condition in the first place. I will explore the financial implication of obesity in the next section.

Direct and Indirect Costs of Obesity

It is important to distinguish that obesity is both a *health problem* and a *public health problem*: obesity causes health issues for the individual and negative ramifications on the population level. The effects of obesity on the American people are apparent when we see its financial implications. Obesity-related direct and indirect costs exceed \$100 billion annually in the United States.⁷⁰ Total costs for hospitalizations with any diagnosis of obesity increased from \$125.9 million in 2001 to \$237.6 million in 2005 (2005 dollars). Although obesity is not the direct cause of these hospital visits, I have already established that obesity plays a role in the development of the illnesses that lead to hospitalization. Hospital visits for which obesity was a primary and secondary diagnosis increased 23.9 percent and 11.5 percent per year. It is important to note that the prevalence of obesity did not rise in proportion with obesity-associated hospitalizations. Rather, doctors have become increasingly aware of obesity's role in patients' health.⁷¹ In addition to hospitalization and treatment costs for the illnesses and diseases related to obesity mentioned previously, obesity can lead to postoperative complications and increased

⁷⁰ Cawley, "The Economics Of Childhood Obesity."

⁷¹ Trasande et al., "Effects Of Childhood Obesity On Hospital Care And Costs, 1999–2005."

charges during hospital visits. Obesity may also result in inpatient care rather than outpatient postoperative management.⁷²

Let us return to the distinction between direct and indirect costs of obesity. Direct costs are defined as medical costs to treat obesity itself and obesity-related illnesses. Indirect costs are expenses that may not have been incurred had individuals not been obese. One commonly cited indirect cost is a reduction in productivity. This is partially due to absenteeism, meaning absence from work for health reasons.⁷³ Obese men take an average of 5.9 more sick days a year than their non-obese counterparts, while obese women take an average of 9.4 days more. Health economists at Duke University found obesity-related absenteeism costs employers as much as \$6.4 billion a year.⁷⁴ There is also evidence that “presenteeism” is an issue, meaning obese individuals are less productive at work than non-obese workers.⁷⁵ The significantly obese lose one month of productive work per year, resulting in a total annual cost of presenteeism due to obesity at approximately \$30 billion.⁷⁶

Obesity also affects transportation costs. Public transportation systems such as New Jersey Transit now manufacture train cars with larger seats to accommodate obese passengers.⁷⁷ Obese people not only impact the number of seats a train or airplane can hold, they also affect fuel costs. An economist for Qantas Airlines claimed that since 2000, the average weight of adult passengers on its planes has increased by more than 4 pounds. In order to fly their large aircrafts with this additional weight, an extra \$472 of fuel has to be burned on a flight from Sydney to

⁷² Ibid.

⁷³ Hammond and Levine, “The Economic Impact of Obesity in the United States.”

⁷⁴ Begley, “As America’s Waistline Expands, Costs Soar.”

⁷⁵ Hammond and Levine, “The Economic Impact of Obesity in the United States.”

⁷⁶ Begley, “As America’s Waistline Expands, Costs Soar.”

⁷⁷ Ibid.

London. If the airline flies that route in both directions three times a day, the annual costs for that route will require an additional \$1 million for fuel.⁷⁸ A 2006 study in the United States found that for every additional pound of passenger weight, the US consumes an additional 39 million gallons of fuel each year.⁷⁹ Insurance rates are also affected by obesity; employers pay higher life insurance rates for employees who are obese. Lastly, many studies have demonstrated that obesity is associated with lower household incomes. This may be due to discrimination or the inability to perform certain jobs.⁸⁰

Perhaps the most pressing financial repercussion of obesity is its burden on Medicaid and Medicare. One study found that approximately one-half of obesity-attributed medical expenditures in United States were financed through Medicare and Medicaid.⁸¹ Medicare pays for many of the consequences of obesity because some of the health effects of obesity become evident or worsen with age and the development of other illnesses once individuals become eligible for the program. Many scholars argue that obesity costs for Medicaid is reflective of the lack of healthy foods options or other health needs available to the poor.⁸² A study from the Center for Disease Control found that Medicare, Medicaid and private insurers increased spending due to obesity from 6.5 percent in 1998 to 9.1 percent in 2006. This figure includes prescription drug costs.⁸³ Per capita, medical spending for obese people was \$1,429 (42 percent) greater than spending for normal-weight people in 2006.⁸⁴ For Medicare, non-inpatient services and pharmaceuticals (as a result of the introduction of prescription drug coverage) were major

⁷⁸ "Weigh More, Pay More."

⁷⁹ Fung, "Obesity Makes Us Waste More Than a Billion Gallons of Gas Every Year."

⁸⁰ Withrow and Alter, "The Economic Burden of Obesity Worldwide."

⁸¹ Sebelius, *Preventive and Obesity-Related Services Available to Medicaid Enrollees*.

⁸² Freeman, *Fast Food*.

⁸³ "Fact Check."

⁸⁴ Finkelstein et al., "Annual Medical Spending Attributable To Obesity."

drivers of spending. The results suggest that spending within these categories for each obese beneficiary was more than \$600 per year higher than for a normal-weight beneficiary in 2006.⁸⁵ Medicaid funding can cover nutritional consultations, behavioral therapy programs, and procedures such as coverage of bariatric surgery, although coverage varies across the fifty states.⁸⁶ However, physicians and politicians recognize these programs insufficient. For example, Medicaid could cover innovative intervention programs, which are not consistently covered across states.⁸⁷ I predict that Medicaid will expand coverage of obesity treatment and prevention as the Obama administration begins its second term.

Conclusion

It has become evident that obesity is costly to the individual and the United States as a whole. Obesity inherently decreases one's quality of life, as well as lead to suffering from other illnesses. Obesity therefore increases morbidity, classifying it as a public health issue. Obesity places further burdens on society by increasing direct medical costs and indirect costs to compensate for the loss of productivity. In addition this issue burdens the public with increased Medicaid and Medicare costs, therefore everyone pays for the consequences of obesity. Obesity is not a choice for all people; obesity can be a consequence of fast food oppression. Therefore obesity is a public health problem that requires government intervention. Just as there are many factors responsible for the obesity epidemic, many key players will be responsible for reversing rising obesity rates. Individuals, the private sector, and the public sector all have obligations to

⁸⁵ Ibid.

⁸⁶ Lee et al., "Coverage of Obesity Treatment."

⁸⁷ Ibid.; Simpson, "Paying for Obesity: A Changing Landscape"; Fals, About Healthy 100 Kids.

combat obesity. In the next chapter, I will be focusing specifically on the public sector because I believe a significant government intervention is required for a substantial improvement to occur. Specifically, I will argue why it is morally permissible (in fact, required) to implement regulations in order to reduce obesity.

Chapter 2: An Argument For Food Regulation Due To A Lack Of Informed Consent

I have established in Chapter 1 that obesity is a public health issue that will best be solved through government intervention. In this chapter, I will argue why the government is morally required to regulate food. The United States currently regulates risky activities including other drugs, consuming alcohol, and driving a vehicle. These activities are regulated differently including age restrictions, license requirements, and labeling requirements. Although each activity carries unique risks, they are all permissible forms of soft paternalism because they only constrain the choices of the young and/or uninformed. The hope is that informed adult individuals are less likely to engage in potentially harmful acts because they understand the consequences of their actions. However, ignorance can undermine an adult's capacity to make a risky decision--if someone is uninformed, he or she cannot make a competent choice. If they ultimately choose to engage in risky behavior, adults are liable for their actions.

I am arguing that eating food can be a risky behavior; therefore people should be informed before they have the right to engage in such behavior.⁸⁸ Obesity has become such a widespread epidemic because many people do not understand that they engage in "risky eating" every day. By creating regulation measures to inform Americans of the risks of eating unhealthily, more people will be competent to avoid becoming obese or and improve their health. My argument will be as follows: first, I will demonstrate that the United States already regulates other risky behaviors to ensure informed consent. I will explain the current regulation policies

⁸⁸ In medical ethics, there is a concept of the "right not to know" if a person's genetics make them likely to develop diseases. People would rather live in blissful ignorance than fear that they will develop harmful diseases. I reject this argument because obesity is caused by both environmental and genetic factors. One can avoid becoming obese despite a genetic predisposition to the disease, therefore they ought to be informed on how to do so before it is too late.

such as those of tobacco and alcohol and why these policies are good. Next, I will demonstrate that obesity is morally equivalent to alcohol and tobacco misuse. Therefore, because it is morally permissible to regulate tobacco and alcohol, it is also appropriate to regulate food.

1. Current Risky Behavior Regulation Policies

In this section, I argue that the general public of the United States consents to the already enacted regulation policies of risky behaviors/substances. I will outline the regulation policies of alcohol, tobacco, marijuana, and driving. I will explain what the regulation policies are, as well as establish that they have been effective in improving health outcomes. Many people may shudder when they first hear the suggestion that food should be regulated. Food is a critical part of peoples' lives--it provides sustenance, is essential to cultural identity, and many people shape their daily schedule around meals. Many people fear that regulating food would compromise their lives dramatically. However, by evaluating regulation policies of other risky behaviors, we can begin to understand how food regulations could viably be implemented.

1.1 Why Regulating Tobacco is Good

First let's look at how smoking tobacco is regulated. The current regulation policy states that a person must be 18 years old to purchase and smoke tobacco.⁸⁹ This policy was enacted to prevent young people from bodily harm and to reduce the likelihood of developing an addiction.⁹⁰ Young people are considered to have limited autonomy because they are not

⁸⁹ Health, "Smoking and Tobacco Use; Fact Sheet; Youth and Tobacco Use."

⁹⁰ Smoking regulations passed legislation partially because they not only protect the health of the smoker, but they also protect the health of other by preventing second-hand smoke. However, in order to compare smoking and risky eating, we will focus on smoking regulations as they pertain to the smoker.

adequately educated and are their parents' responsibility. Therefore, people under the age of 18 are not competent to fully realize the risks of smoking and are prevented from harming themselves. To further educate people on the risks of smoking, cigarette manufacturers are required to print risk labels on their cartons with graphic images of a smoker's lungs. These labels serve as a frequent reminder that the smoker is engaging in a risky activity.⁹¹

While it is difficult to pinpoint the effectiveness of each regulation policy, the data indicates that the regulation of tobacco use improves health outcomes. According to the Center for Disease Control (CDC), 18.2% of adults smoked in 2011, which was a significant decrease from 42.4% in 1965. Consumption levels peaked in 1981 and have declined ever since.⁹² Smoking rates have decreased because many older people have quit smoking, and young people are less likely to pick up that habit.⁹³ However, public health officials worry because the rate of decrease in consumption has leveled off; in other words, public health officials are worried that their anti-smoking (and general tobacco use) campaigns and policies may need revision because the number of tobacco users is stagnant. Since the eighties, tobacco-related illnesses and deaths have decreased along with consumption rates.⁹⁴ Although this is a major victory for public health officials, tobacco-related illnesses remain the largest cause of preventable death. Overall, the data indicates that regulations have been effective in educating the public on the risks of smoking as well as decreasing overall smoking rates. New regulation and/or education strategies may need to be employed to continue the trend of decreasing tobacco use. Regardless of the

⁹¹ Kux, "Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco to Protect Children and Adolescents."

⁹² American Lung Association Research and Program Services Unit, *Trends in Tobacco Use*; "Decades-Long U.S. Decrease in Smoking Rates Levels Off."

⁹³ Saad, "US Smoking Rate Still Coming Down."

⁹⁴ Kux, "Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco to Protect Children and Adolescents."

future of tobacco regulation, it is clear that tobacco regulations have successfully prevented engaging in risky behavior without consent and health outcomes have improved.

1.2 Why Regulating Alcohol is Good

Alcohol consumption is regulated in a similar fashion. The U.S. law requires consumers to be at least 21 years old to purchase or drink alcohol.⁹⁵ This law was enacted to protect drinkers from harming their bodies as well as to reduce driving while intoxicated. Similar to tobacco regulations, alcohol bottles and advertisements must clearly print risk labels. Both tobacco and alcohol advertisements are banned in certain locations, such as near schools or in certain publications. The specific age at which consumers should be allowed to purchase alcohol is frequently debated, however, officials agree that alcohol regulation is necessary.⁹⁶

Overall, alcohol regulations have been largely successful. Per capita alcohol consumption in the United States has fallen by about 20% from 1979 to 2000.⁹⁷ In 2010, the rate of alcohol-impaired driving fatalities per 100,000 people was 3.3, signifying a 64% decrease since 1982, when this statistic began being tracked.⁹⁸ From 1991 to 2010, drunk driving fatalities for drivers under 21 years old decreased 57% and drunk driving fatalities overall decreased 35%. In addition, the rates of binge drinking among college students decreased 16% from 1991 to 2011, which was last recorded at 36%.⁹⁹ Even underage drinking across all age groups has decreased since 1991.¹⁰⁰ Despite the decline, there are concerns that the currently regulations are not

⁹⁵ "CDC - Fact Sheets-Minimum Legal Drinking Age - Alcohol."

⁹⁶ Wagenaar, "Alcohol Policies in the United States: Highlights from the 50 States."

⁹⁷ Kerr et al., "Age, Period and Cohort Influences on Beer, Wine and Spirits Consumption Trends in the US National Alcohol Surveys."

⁹⁸ "Drunk Driving Research."

⁹⁹ Ibid.

¹⁰⁰ "Underage Drinking."

effective enough and need improvement due to the high numbers of underage drinkers and binge drinkers in high school and college. Almost 10 million Americans ages 12 to 20 report that they have consumed alcohol in the past 30 days.¹⁰¹ According to the 2011 National Survey on Drug Use and Health, the rate of current alcohol consumption increases with increasing age according to from 2% at age 12 to 21% at age 16, and 55% at age 20.¹⁰²

Although regulations have not eliminated underage drinking or alcohol-related driving fatalities, the data indicates that having alcohol regulations in place has improved health outcomes due to reduced alcohol consumption and alcohol-related fatalities.¹⁰³ According to a report from the World Health Organization, “The harmful use of alcohol results in approximately 2.5 million deaths each year, with a net loss of life of 2.25 million, taking into account the estimated beneficial impact of low levels of alcohol use on some diseases in some population groups.” Decreasing alcohol use improves health outcomes across global populations because the harmful use of alcohol is a major contributing factor to death, disease and injury. Reducing the consumption of harmful amounts of alcohol will make drinkers less likely to become alcohol dependent, to develop liver cirrhosis, cancers and injuries. Lowering alcohol consumption in a population will also lessen the likelihood of intoxicated people harming others through drink driving, violent acts, or through the impact of drinking on fetus and child development.¹⁰⁴

1.3 Regulating Marijuana: A Case of Changing Perceptions

Marijuana regulation is an interesting case because regulation policies are not consistent across all fifty states. Selling marijuana is currently a federal crime, but some states regulate it

¹⁰¹ Ibid.

¹⁰² Ibid.

¹⁰³ *State of Drunk Driving Fatalities in America 2010*; “Drunk Driving Research.”

¹⁰⁴ WHO, *Global Status Report on Alcohol and Health*.

with more flexibility. In California, it is legal to purchase and use marijuana if a person has a medical license to do so. Marijuana growers are also required to obtain a license.¹⁰⁵ In 2012, Colorado legalized the possession of marijuana for all citizens who are at least 21 years old.¹⁰⁶ It is unclear how the conflicting state and federal regulations will be upheld in the courts. The evolution in marijuana regulation indicates that banning the use of risky substances may not be the best policy. It is too soon to tell whether or not legalizing marijuana use will lead to worse health outcomes. Clearly marijuana has been used in the United States despite the federal ban, so modifying regulation strategies may increase responsible use of this risky behavior.¹⁰⁷ I highlight the changing perceptions of marijuana use in the US because it indicates that citizens are likely to change their beliefs on the use of other risky substances as well. Perceptions of the use and regulation of alcohol has changed dramatically as well, ranging from prohibition in the 1920s to current proposals for the drinking age to be lowered to 18 on college campuses.¹⁰⁸ Since it is evident that Americans are using marijuana despite the federal ban, it may be beneficial for the government to revise its regulation policy. Just as banning marijuana has not been an effective policy, banning foods products may not be the best method of regulation policy to improve American eating habits. However, it is not reasonable to conclude that all regulation policies should be discounted simply because one method is ineffective.¹⁰⁹ Regulating risky substances is not all-or-nothing; policies can be crafted to influence behavior without banning substances outright. Just because a substance is regulated ineffectively does not mean it should not be

¹⁰⁵ "Guide to California's Marijuana Laws."

¹⁰⁶ "Overview of Amendment 64."

¹⁰⁷ "Drug Policy Reform."

¹⁰⁸ Thornton, *Alcohol Prohibition Was a Failure*; "College Presidents Urge Rethink On Drinking Age."

¹⁰⁹ Edelson, "Toward Rational Regulation of Marijuana in the United States: FDA's Role in Consumer Choice and Safety"; "Guide to California's Marijuana Laws"; "Overview of Amendment 64."

regulated at all. Just as there are more creative and effective ways to regulate marijuana, there are many alternatives to food regulation than outright bans. In Chapter 3, I will explore other policy options that are more viable.

1.4 Why Regulating Driving is Good

The last risky behavior I would like to discuss is driving regulations. Although driving does not entail the consumption of a potentially harmful substance, it is regulated to prevent drivers from harming themselves as others. The United States requires citizens to obtain a drivers license by taking a driver's education and safety course. There are also age restrictions to obtain a license that varies by state, but is generally 16 years old. Driving is regulated because studies show that drivers are safer once they have reached a certain level of brain development, which is believed to be around 16 years old, hence the age restriction. There is controversy over what that appropriate age to allowing driving is, but the bottom line that having an age restriction saves lives.¹¹⁰

Driving regulations have improved health outcomes in terms of reduced driving-related mortalities and injuries. According to the Census data, the fatality rate across the US in deaths per 100 million miles traveled dropped from 2.1 in 1990 to 1.1 in 2009.¹¹¹ This significant drop in accidents and fatalities can be partially attributed to driving safety regulations. Operating a vehicle requires understanding complicated equipment, a variety of exterior signals such as road signs, and the ability to navigate a distracting environment. Without regulations, drivers would put others at risk by operating high-speed equipment without developing the proper driving

¹¹⁰ "Young Driver Licensing Systems in the U.S."; "Teen Driving Age Should Be Raised, Says Auto Safety Group."

¹¹¹ Division, "The 2012 Statistical Abstract - U.S. Census Bureau: Transportation."

skills. Traditional pre-licensing driver education typically requires 30 hours of classroom instruction and 6-10 hours of in-vehicle guidance. Drivers' education has been proven to effectively teach the rules of driving. However, most people get into car accidents because they of inexperience and risk-taking. Creating age-restrictions and licensing requirements enables officials to establish standards of competence to minimize the number of drivers who are likely to drive in a risky manner. Creating drivers license requirements ensured that drivers knew the rules of the road before getting behind the wheel. This includes understanding speed limits, traffic signals, and defensive driving strategies. If all drivers are familiar with safe driving practices, accidents are less likely to occur. ^{112 113}

Graduated Driving Licensing (GDL) programs have also proven to be effective in improving driver safety by reducing the number of distractions and risks new drivers face during the initial learning period. GDL programs comprise of three stages (the learner's permit, provisional license, and full license) that slowly introduce novice drivers to high-risk driving situations such as nighttime driving, driving with passengers, and driving after consuming any amount of alcohol. Drivers are required to demonstrate their capabilities to drive during each stage of licensing before advancing to the next level. ¹¹⁴ All 50 states and the District of Columbia adopted GDL programs between 1996 and 2011, and NIH-supported research shows that such programs reduced the rate of fatal crashes among 16- 17-year-olds by 8 to 14 percent. ¹¹⁵ The report found that reductions in fatal crashes were greatest in states that had adopted graduated driver licensing laws in combination with mandatory seat belt laws or laws requiring a loss of the

¹¹² *Young Drivers: The Road to Safety.*

¹¹³ "Teen Driving."

¹¹⁴ Office of Behavioral Safety Research National Highway Traffic Safety Administration, *Teen Driver Crashes: A Report to Congress.*

¹¹⁵ Robert Bock, "Graduated Drivers Licensing Programs Reduce Fatal Teen Crashes."

driver's license as a penalty for possession or use of alcohol by youth aged 20 or younger. Even better outcomes were found when policies limiting night driving or driving with teenaged passengers were enacted in combination with graduated licensing laws. Researchers at the Pacific Institute for Research and Evaluation (PIRE) created a study using the Fatality Analysis Reporting System to measure the effectiveness of GDL programs by comparing the rate of fatal crashes among 16-17 year olds and 21-25 year olds across all 50 states using data from 1990 to 2007.¹¹⁶ The most effective legislation had at least five of seven key elements:

1. A minimum age of 16 for a learner's permit
2. A mandatory waiting period of at least six months before a driver with a learner's permit can apply for a provisional license
3. A requirement for 50 to 100 hours of supervised driving
4. A minimum age of 17 for a provisional license
5. Restrictions on driving at night
6. A limit on the number of teenage passengers allowed in the car
7. A minimum age of 18 for a full license¹¹⁷

I highlight this research to demonstrate the measuring the effectiveness of any given policy is challenging. We often see the best results when a multifaceted approach is used to tackle an

¹¹⁶ Fell et al., "An Evaluation of Graduated Driver Licensing Effects on Fatal Crash Involvements of Young Drivers in the United States."

¹¹⁷ Robert Bock, "Graduated Drivers Licensing Programs Reduce Fatal Teen Crashes"; Fell et al., "An Evaluation of Graduated Driver Licensing Effects on Fatal Crash Involvements of Young Drivers in the United States."

issue. Driving regulations provide a nice comparison of the comprehensive approach that will be required to reduce obesity.

With age restriction policies, it is highly controversial to determine the appropriate age cut-off. It is inevitable that younger drivers will have more accidents because they are less experienced, however, there is evidence age directly impacts drivers' abilities to drive safely. Young people have not finished cognitive development and there is significant evidence demonstrating their decreased risk-assessment abilities and shorter attention spans than older drivers.¹¹⁸ In order to determine whether or not driving age restrictions are effective (and at what age they should be implemented), researchers have at the rates of vehicle accidents across states with different age restrictions. New Jersey has the highest age requirement to obtain a driver's license at the age of 17. The youngest age requirement is 14, in South Dakota. An analysis conducted by researchers for the Insurance Institute for Highway Safety compared fatal crashes of teenage drivers in neighboring states New Jersey and Connecticut. Comparing 16-year-old drivers, in New Jersey 4.4 drivers per 100,000 population were in fatal crashes during the study years, compared with 20.7 per 100,000 in Connecticut. The researchers attributed this statistic to the fact that drivers must be 17 years old in order to get a license in New Jersey, and only 16 in Connecticut. Adrian Lund, president of the Insurance Institute for Highway Safety, said in response to the study, "The bottom line is that when we look at the research, raising the driving age saves lives."¹¹⁹ Enforcing age requirements for driving is not unique to the United States—many industrialized countries in Europe and elsewhere have a driving age of 17 or 18. There is debate today that the driving age should be raised to 18; data from New Jersey and countries

¹¹⁸ "Teen Driving"; "Teen Driving Age Should Be Raised, Says Auto Safety Group."

¹¹⁹ "Teen Driving Age Should Be Raised, Says Auto Safety Group."

where the driving age is 18 have lower rates of car accidents, which support this proposal.¹²⁰

Regardless of the appropriate age for regulation, it is clear that these policies are beneficial and have saved lives.

1.5 Other Examples of Informed Consent Regulations

We use age restriction and information requirement policies in other contexts that are not viewed as controversial. The United States has informed consent requirements in medicine to ensure patients understand and can evaluate the risks before undergoing a procedure or taking a medication. We also require consumers to sign contracts indicating their consent before renting a car or hotel room, or getting a loan. We have gone as far as requiring credit card contracts to be written in lay terms to ensure people can fully understand contracts before they sign them. The Credit Card Accountability Responsibility and Disclosure Act of 2009 was passed to combat the data indicating that 4 out of 5 Americans could not understand their credit card contracts. This resulted in credit card holders racking up fines and sometimes going into debt because they did not understand the policies that they consented to.¹²¹ When the bill passed, President Obama said, "With this new law, consumers will have the strong and reliable protections they deserve.

We will continue to press for reform that is built on transparency, accountability, and mutual responsibility – values fundamental to the new foundation we seek to build for our economy."¹²²

I believe this concept should be applied to food. People should understand the risks of eating unhealthy products before consumption. Although food-labeling requirements exist to help consumers make informed food choices, there risks involved with eating unhealthy products that

¹²⁰ "ROAD TRAFFIC ACCIDENTS DEATH RATE BY COUNTRY"; "Teen Driving Age Should Be Raised, Says Auto Safety Group."

¹²¹ Connie Prater, "U.S. Credit Card Agreements Unreadable to 4 Out of 5 Adults."

¹²² "Fact Sheet."

consumers may not be aware of.¹²³ For example, consumers may know that eating excess sugar is unhealthy, but they may not fully understand the risks of eating a high-sugar diet.

2. Regulation is Good on Moral Grounds

I have just established empirically that public health regulations are effective. Now I will demonstrate why regulation is good morally. Most Americans have an internalized approval of paternalistic public health regulations. Seat belt laws are the quintessential paternalist laws, and the general public complies and seems to support these laws. Whereas other driving regulations protect both the driver and others on the road, seat belt laws only protect the drivers themselves. Seat belt laws grant the government the authority to override the citizens' autonomy in order to protect their livelihood. The American people have accepted this policy. In 1977, a Gallup Poll found that 78% of Americans opposed seat belt laws, when the policies were just being drafted.¹²⁴ In 2011, 85% of Americans report wearing a seat belt every time they are in a vehicle.¹²⁵ Despite its gains in road safety outcomes, the US is not the leader in road safety—the countries with better outcomes treat traffic safety “as much more of a public health problem than does the United States.”¹²⁶ The lesson to be learned from seat belt regulation history is that public opinion on public health policies can change dramatically as health outcomes improve. Obesity regulation is one of many public health issues that can—and should—be addressed through regulation policies. While a government food intervention may not be popular now, I

¹²³ “The Ethics of Obesity Part II.”

¹²⁴ Holdorf, “The Fraud of Seat-Belt Laws Seat-Belt Laws Infringe a Person’s Constitutional Rights.”

¹²⁵ “Gazette Opinion.”

¹²⁶ Evans, “A New Traffic Safety Vision for the United States.”

believe the public will eventually support regulation if it leads to decreased obesity rates and improved quality of life for millions of Americans.

2.1 We Are Our Own Experts—Except When We Are Not Informed

John Stuart Mill argues that individuals are experts on their own needs, and his general harm principle states that the government can only exert control over its citizens to prevent people from harming others. However, Mill clarifies that people may not always be competent to make the best judgments. His example of the bridge can be applied to the obesity dilemma. Mill writes:

If either a public officer or any one else saw a person attempting to cross a bridge which had been ascertained to be unsafe, and there were no time to warn him of his danger, they might seize him and turn him back without any real infringement of his liberty; for liberty consists in doing what one desires, and he does not desire to fall into the river.

Nevertheless, when there is not a certainty, but only a danger of mischief, no one but the person himself can judge of the sufficiency of the motive which may prompt him to incur the risk: in this case, therefore, (unless he is a child, or delirious, or in some state of excitement or absorption incompatible with the full use of the reflecting faculty,) he ought, I conceive, to be only warned of the danger; not forcibly prevented from exposing himself to it. Similar considerations, applied to such a question as the sale of poisons, may enable us to decide which among the possible modes of regulation are or are not contrary to principle. Such a precaution, for example, as that of labeling the drug with some word expressive of its dangerous character, may be enforced without violation of

liberty: the buyer cannot wish not to know that the thing he possesses has poisonous qualities.¹²⁷

The regulation policies I have discussed so far are compatible with this ideology. Just as it is permissible to require that people know what they are buying or that they know they are approaching a dangerous bridge, it is permissible to enact regulations to ensure people are capable of making judgments about the risks of engaging in risky behavior. Ultimately, the US government allows 18 year olds to use tobacco and 21 year olds to drink alcohol if they choose. Along with the age restrictions, consumers are continually faced with warning labels to guarantee people the opportunity to assess the risks before engaging in activities that could lead to harm. Overall, the government has created policies to protect people from hurting themselves because they are incompetent to choose otherwise. This rationale should not be exclusive to alcohol and tobacco regulations.

2.2 Obesity Is Not Morally Different From Tobacco and Alcohol

Having now established that regulation of incompetent choices is not only permissible, but is also good, we can now turn our attention to food choices. Many people qualify as incompetent regarding dietary choices according to Mill's description above. If people do not truly understand the risks and consequences of drinking sodas and eating fast food every day, then they are not capable of making the best decisions for themselves. People may be incompetent to make smart food choices either due to poor judgment ability (which may come with age), or due to a lack of information. If measure of competence could be established (either an licensing requirement or an age restriction), then it would be reasonable to allow people to eat

¹²⁷ John Stuart Mill, *On Liberty*.

a poor diet. In fact, Mill would argue that individuals who are competent could not be prevented from eating their preferred diet. With tobacco, 18-year-olds are deemed competent enough to evaluate the costs and benefits of smoking. Smokers are reminded of risks of their behavior by seeing the graphic warning labels on cigarettes every time they have a pack in their hands. Ultimately, individuals are autonomous, and the government does not strive to reduce that autonomy. Instead, the government creates policies to educate individuals so that they are rightfully liable for their own behavior. The government has worked hard to publicize the health detriments of smoking, yet it ultimately must allow competent people to smoke. Likewise, the government has an obligation to ensure the masses are educated on the risks of eating a poor diet in order to make individuals liable for their obese condition.

I will now show that food choices qualify as incompetent in the same way that other self-harming choices are incompetent without regulations. I will demonstrate that people do not know how to eat well, they are eating whatever they want without considering the consequences, that their eating habits are negatively affected by advertising for unhealthy products, and that many food abusers qualify as addicts. The climate of unregulated food is very similar to the pre-tobacco regulation era. Just as smoking evolved from being perceived as an autonomous choice to a public health hazard, the American perception of obesity can progress with regulations.

2.3 Harm to Self: People Don't Know How to Eat Well

In Chapter 1, I established the severity of the obesity epidemic. Once again, about one-third of adults and almost 17% of children in the United States are obese. People do not become overweight or obese by choice; they feel powerless in their condition. Every person's story of how they became overweight is unique. Some people do not have access to healthy foods and are

victims of food deserts. Others grew up in a family where proper portion sizes were never taught and obesity was inevitable. Some people seek comfort in food after traumatic events. Many people simply have hectic lifestyles and rely on processed food because they don't know how to feed themselves and manage the rest of their lives in a better manner. Regardless of how one becomes overweight, it is clear that there is a need for resources to educate the public on proper nutrition and expand access to healthy foods.

How did America become full of people who feel powerless over their dietary choices? Obesity fundamentally stems from a net caloric increase due to either increased food or decreased physical activity. Although decreased levels of physical activity have been documented in many populations, I will focus on the food consumption aspect of obesity. (I will explain my preference for emphasizing food instead of physical activity later in the chapter). Overall, people are consuming foods that are widely accessible and heavily marketed without understanding the effects of those foods on their bodies. Many independent organizations including the USDA have studied American eating habits and food purchase trends extensively since the 1950s. This research has been used to identify many causes of weight gain. First we will look how the American diet has evolved, after which we will see the health effects of those foods.

2.4 We Are Eating “Whatever We Want”

According to the USDA, the average American daily caloric intake rose from 2,234 in 1970 to 2,757 in 2003--this signifies an increase of 523 calories per day.¹²⁸ These calories come from several sources. A Gallup poll found that 48% of Americans consume soda every day,

¹²⁸ “The Average American Daily Caloric Intake.”

which has been found to be one of the leading contributing foods to the obesity epidemic.¹²⁹ Other studies have found that 25% of Americans consume fast food every day, and 70% of American adults admit to eating “pretty much whatever they want”. This translates to an average of 52 teaspoons of added sugars per day. In addition to an increase in sugar consumption, meat and dairy (especially cheese) consumption have risen significantly. This means that fat consumption has increased, although the harmful effects of a high-fat diet were communicated effectively and leaner meats and low-fat dairy products have become more common. Not only are Americans eating too much sugar and fat, they are consuming less than the recommended amounts of fruits and vegetables. More specifically, less than a third of the population eats more than one fruit per day, and only about a quarter eats more than two vegetables per day. Clearly there is a gap between the USDA’s dietary guidelines and American eating habits.¹³⁰

It is not only established that Americans are not eating well, but there is data that explicitly shows the health effects of consuming specific foods. A 20-year study published in the *New England Journal of Medicine* found that during each four-year increment, poor food choices contributed to an average of 4 pounds gained. Potato chips were found to be the single largest contributing food to weight gain; “Each daily serving containing 1 ounce (about 15 chips and 160 calories) led to a 1.69-pound gain over four years. That’s compared to sweets and desserts, which added 0.41 pound.”¹³¹ Soda added a pound, and an alcoholic drink a day added 0.41-pound. Other lifestyle factors were measured such as watching an hour of TV a day, sleeping less than 6-8 hours, and cigarette smoking, but none of these factors had as strong an impact as diet.

¹²⁹ “American Soda Consumption.”

¹³⁰ *Profiling Food Consumption in America*; “11 Facts About American Eating Habits.”

¹³¹ “Potato Chips Piling on the Pounds, Study Finds.”

However, all of these factors contributed to weight gain, with the average person gaining 17 pounds during the 20-year period.¹³²

Not only are Americans not eating well, they are not very concerned about their eating habits. According to the 2002 survey “Trends—Consumer Attitudes and the Supermarket” conducted by the Food Marketing Institute, the highest reported nutrition concern was people’s fat consumption (49%). This was followed by concern about sugar (18%), salt (17%), and cholesterol (16%) consumption. It is surprising that calorie consumption consistently ranks toward the bottom of consumer nutrition concerns. The fact that Americans are consuming excess calories yet they do not recognize that it is the root of the obesity epidemic. There is an educational void that needs to be filled in order to improve health outcomes. ¹³³

Just as we do not expect Americans to independently obtain information to become a safe driver, we cannot assume people will become informed about and practice proper nutritional guidelines. In other domains, we mandate education or set age restrictions to ensure people are competent when choosing to engage in risky activities. In the current state of affairs, we treat food consumption differently than other risky behaviors. Every time a person opens a packet of cigarettes he or she sees a warning label about the risks of getting lung cancer. Yet there are no warning labels placed on potato chips. Perhaps even worse, some junk foods have “smart options” labels, highlighting low fat or reduced sugar. For example, although Lays baked chips are healthier than Lays traditional potato chips, they are by no means healthy. According to an article in the Los Angeles Times, “Critics say Smart Choices won't help end confusion because its nutrition standards are far too lenient. They see the program as an attempt by food companies

¹³² Mozaffarian et al., “Changes in Diet and Lifestyle and Long-Term Weight Gain in Women and Men.”

¹³³ *Profiling Food Consumption in America.*

to bill less-than-stellar processed foods as nutritious.”¹³⁴ This is not to say it is wrong for companies to highlight their healthier options; the point is that beyond nutrient food labels, there are no requirements for food companies to publicize the risks of eating their products. The unregulated food climate has left consumers uninformed and incompetent to choose their unhealthy condition.

2.5 Limited Information Plus Junk Food Marketing Equals a Negative Reinforcement Trap

Currently, too many people are obese because they are ill equipped to live better. Some people do not have a basic understanding of their nutritional needs, while others do not know how to eat healthily within their economic means. Regardless of the root of their condition, all people should have the opportunity to be healthy. Instead, many people are stuck in a state of ignorance and incompetence. These people helplessly eat their way towards obesity, and the government blames the individuals for their condition. It is unreasonable to expect a different outcome without providing people with realistic opportunities to become informed in order to make healthy food decisions. Food is morally equivalent to all risky substances; people should not be exposed to consume these substances without being informed on the possible consequences.

The question is: where do people learn about nutrition? Answers vary drastically because there is not a standard method for learning about nutrition in the United States. Children learn about nutrition and portion sizes from their parents through experience. Some parents are conscious about educating their children on the importance of a balanced diet, but the high overweight population indicates that we cannot expect parents to properly educate their children.

¹³⁴ MacVean, “‘Smart Choice’ Food Label.”

I have already established that many people are ill informed on proper nutrition; therefore an external intervention is required to educate the public. Other than learning from family and friends, people obtain nutrition information from television programs, the Internet, and advertisements.¹³⁵ The underlying problem is that consumers must be proactive to learn about proper nutrition.

To make matters worse, the most widespread source of information about food that is guaranteed to reach consumers is advertisements, especially for junk foods. The New York Times recently covered a story about a team of researchers that walked every street in 228 census tracts around Los Angeles and New Orleans and recorded every outdoor advertisement they saw. In addition, their team surveyed 2,881 residents of the same census tracts by telephone to collect data on their height, weight and other information. The study found that “For every 10 percent increase in food advertisements, the odds of being obese increased by 5 percent.”¹³⁶ There is not enough data to prove that the advertisements cause obesity; these variables could simple be correlated or the causation could even run the opposite direction than policy-makers suggest. However, there is significant evidence that junk food advertising does lead to increased caloric consumption. A study from the Rudd Center for Food Policy & Obesity at Yale University found that children exposed to advertisements for high-calorie and nutrient-poor foods consume more unhealthy foods, regardless of the specific product and brand being marketed.¹³⁷ There is a greater body of literature about the impact of junk food advertising on childhood obesity than for adults. It is not surprising because children are not considered competent to make other potentially risky decisions as I have discussed earlier in the chapter. There is some evidence to

¹³⁵ “Where Do YOU Get YOUR Nutrition Information?”.

¹³⁶ Chabris and Simons, “Does This Ad Make Me Fat?”.

¹³⁷ “The Truth About Advertising Junk Food to Children.”

suggest that junk food advertisements affect adults as well, although we are a long way from declaring a direct causation of obesity due to advertisements. In *Psychology Today*, a 2010 study demonstrated that junk food ads prime both children and adults to eat more calories. The team from Yale studied the effects of TV food commercials in two experiments—one focused on children and one on adults.¹³⁸ Both populations watching a TV show (children watched cartoons, adults watched a comedy show) and were manipulated by varying the content of ads shown in the commercials breaks. The children and adults either saw ads for junk food or ads that were not related to food. For the children, snack foods were available while they watched the cartoon. The adults tasted and rated various foods after watching the show in an apparently unrelated study. The adult study included an additional control condition in which some people saw nutritional food ads, which did not prime participants to eat more food. The studies found that junk food commercials caused children and adults to eat, and surprisingly people were not aware that the ads were causing them to eat.¹³⁹ The study demonstrated that the advertisements did not make people eat the particular products advertised; participants would simply eat whatever was available. The study suggests that one possible mechanism is that the ads triggered a craving for the pleasure associated with eating, therefore people wanted to eat regardless of the product being advertised.¹⁴⁰ I highlight these studies to demonstrate how powerful junk food advertising is. It is unreasonable to expect people to make smart food choices when they are bombarded with advertisements for junk foods and infrequently receive information about the risks of eating those foods.

¹³⁸ Harris, Bargh, and Brownell, “Priming Effects of Television Food Advertising on Eating Behavior”; “The Truth About Advertising Junk Food to Children.”

¹³⁹ Harris, Bargh, and Brownell, “Priming Effects of Television Food Advertising on Eating Behavior.”

¹⁴⁰ “Sneaky Commercials.”

The good news is that there is plenty of good information available to the public. The USDA has created a plethora of resources for various target audiences to learn about proper nutrition. The problem is that there are few effective efforts to disseminate that information. Health care professionals and educators are the primary users of many nutrition and health resources created by government-run organizations. There need to be more outlets with these resources so that people do not have to actively seek out information to avoid becoming obese—a proactive approach will improve health outcomes. I propose that nutrition education becomes a mandatory part of the US education system, which I will elaborate on in the third chapter.

2.6 Like Tobacco and Alcohol, Junk Food is Addictive

The instinctual argument is to leave food unregulated because food is required for life, whereas tobacco, alcohol, and drugs are not. However, not all foods are created equal. Although it is established that humans have carbohydrate, fat, and protein consumption requirements, there is no singular food that is essential to life (with the exception of water). Food manufacturers have long resisted regulations by arguing that all foods are fine in moderation—this statement is true. Likewise, it is reasonable to argue that tobacco, alcohol and drugs are also safe to use in moderation. Tobacco, alcohol and drugs are regulated to promote responsible use of these risky substances, which we have already established are effective. The problem is that people do not eat unhealthy foods in moderation yet there is no moral difference between junk foods and other risky substances. In fact, there is a growing body of research demonstrating that junk foods are addictive, which further reinforces the similarities between these risky substances.

According to an article in the New York Times there has been, “a conscious effort — taking place in labs and marketing meetings and grocery-store aisles — to get people hooked on foods that are convenient and inexpensive.”¹⁴¹ Beginning with a meeting in 1999 among the food manufacturing empires Kraft, Nabisco, General Mills, Procter & Gamble, Coca-Cola and Mars, the junk food industry has been aware of the risks of eating high quantities of sugar, salt and fat. Yet the drive for profits has long outweighed social responsibility, and fast food manufacturers have developed products with the goal of getting people to become regular consumers. In other words, companies may claim they have a right to sell unhealthy food because it is healthy in moderation, yet they aim to get consumers to become “heavy users.” One employee from Coca-Cola explained that the company aims to drive more ounces into more bodies more often. This mentality is not unique to Coca-Cola.¹⁴²

Let’s return to the New England Journal of Medicine study about the weight gain attributed to each junk food. It is now scientifically understood why potato chips are the largest weight-inducing food. “The coating of salt, the fat content that rewards the brain with instant feelings of pleasure, the sugar that exists not as an additive but in the starch of the potato itself — all of this combines to make it the perfect addictive food,” according to Eric Rimm, an associate professor of epidemiology and nutrition at the Harvard School of Public Health and one of the study’s authors. Lay’s motto, “Betcha can’t eat just one” isn’t just a dare—potato chips are engineered to prevent people from having the willpower to eat a limited quantity. The tactic behind these addictive foods is called vanishing caloric density—a notion that “If something melts down quickly, your brain thinks that there’s no calories in it . . . you can just keep eating it forever.” Therefore eating junk food is risky because it is addictive, which almost guarantees

¹⁴¹ Moss, “The Extraordinary Science of Addictive Junk Food.”

¹⁴² Ibid.

people will incur health problems due to long-term junk food use. People deserve to know the risks of eating junk food before they become addicted and cannot control their cravings for harmful foods.¹⁴³

3. How to Regulate Food—Not an All-or-Nothing Principle

It will be a fierce political battle to determine which foods will be regulated and which tactics will be most effective. Government officials may feel strongly that certain foods are riskier to consume than others, however, just because this debate is somewhat subjective does not mean regulation should not be considered. Just as tobacco, marijuana, and other drugs that can be consumed via smoking are regulated independently, food regulation can be regulated on an individualized basis. Regulation does not follow an all-or-nothing principle. Different foods may pose different dietary risks. For example, sugar's impact on the body is different from fat. Whereas explicitly regulating specific products would result in strong lobbying efforts from the targeted industries, creating regulation categories could be effective in reducing the subjectivity of which products are regulated. For example instead of explicitly regulating potato chips, regulating foods with a certain levels of fat would be a less biased way to moderate unhealthy food consumption. There could be exemptions within these categories, such as excluding nuts and other "healthy fats" from certain policies in order to comprehensively promote a healthy diet. This style of regulation is already happening in New York with sugary drink regulations (which are often cited as a "soda tax").

Food regulation is not morally different from other substance regulation because it can come in many forms. It may seem unrealistic to ban the production and sales of specific foods, just as some drugs are outright criminalized. Food regulations could come in the form of age

¹⁴³ Ibid.

restrictions, licensing requirements, warning labels, and advertising restrictions. I will explore policy options in the third chapter. The takeaway message is that just because one form of regulation may be inappropriate for food does not mean all forms of regulation are incongruous.

4. Objections to Food Regulation

There are countless objections to regulating food. Some people will disagree with my argument on the fundamental principle that autonomy trumps public health gains, regardless of the degree of progress achieved. I do not expect to win over these Kantians, although I will address them in the third chapter. I will now counter several other objections that are more practical in nature, rather than philosophical.

4.1 Why Focus on Nutrition Instead of Physical Activity

Although exercise and diet are critical factors for maintaining a healthy body weight, there is evidence that diet is a stronger determinant of health outcomes than physical activity. One study found that people who believe diet is more important than exercise have a lower body weight than vice versa. The study concluded that people who believe exercise is a stronger determinant than nutrition tend to consume more calories than those who emphasize the importance of eating properly.¹⁴⁴ Another study compared African American women in Chicago with women in rural Nigeria to determine why the Nigerian women weigh less on average. Although the researchers hypothesized that the Nigerian women would be more active, they were surprised to find that both populations had similar levels of physical activity, but their diets

¹⁴⁴ "U of M Study."

differed significantly.¹⁴⁵ Fitness is important for reducing mortality because it strengthens the vital organs, such as increasing cardiac output and lung capacity.¹⁴⁶ However, multiple studies have shown that many people who begin an exercise program lose little or no weight.¹⁴⁷ Although policy makers would like for Americans to be physically active and improve their overall fitness, it is essential to help Americans lose weight in order to improve health outcomes. Focusing policies on exercise will not lead to significant weight loss required to negate the effects of obesity. It is important for people to eat a balanced diet and exercise in order to live a healthy lifestyle, however, I believe it is more important and will be more effective to focus political efforts on the dietary aspect of obesity to reduce the epidemic's burden on society.

4.2 The Paternalist Objection

One objection to regulating food is that the government would be acting paternalistic. Scholar James Wilson from the Philosophy, Justice, and Health and Comprehensive Biomedical Research Center at the University College London explains why this argument is weak. Wilson defines paternalism by three features. "...First, it involves an interference with either the liberty or autonomy of the person subjected to the paternalism. Second, the interference is done without the consent of the person interfered with. Third, the interference is undertaken in order to benefit the person interfered with."¹⁴⁸ Anti-paternalists argue that sovereignty always takes precedence over preventing harm. However, this argument is not applicable in societies where we have consented to abide by organizations that set public policies. Feinberg, an anti-paternalist, supports this claim. He states:

¹⁴⁵ "Diet, Not Exercise, Plays Key Role in Weight Loss."

¹⁴⁶ Pearson, "Diet Vs. Exercise."

¹⁴⁷ "Diet, Not Exercise, Plays Key Role in Weight Loss."

¹⁴⁸ Wilson, "Why It's Time to Stop Worrying About Paternalism in Health Policy."

When most of the people subject to a coercive rule approve of the rule, and it is legislated (interpreted, applied by the courts, defended in argument, understood to function) *for their sakes*, and not for the purpose of imposing safety or prudence on the unwilling minority (‘against their will’), then the rationale of the rule is *not* paternalistic. In that case we can attribute to it as its ‘purpose’ the *enablement* of the majority to achieve a collective good, and not, except incidentally as an unintended byproduct, the enforcement of prudence on the minority.¹⁴⁹

On Feinberg’s account, public health policies are permissible because they are inherent in the government’s purpose to promote the collective good. Therefore if people are opposed to food regulations, they are in fact opposed to public policy and our government as a whole. Thus, this argument does not support the claim that food regulation *specifically* is paternalistic and morally wrong.

4.3 The Libertarian Objection

Libertarians may object to regulating food because they believe they have the right not to know about the risks of eating certain foods. For example, people may wish to have the right to remain ignorant to the amount of calories they consume when they are out for dinner and eating a celebratory steak. In medical ethics, the need for an established “right not to know” stemmed from the discovery that the increasing knowledge about genetic predispositions to diseases could be an extra burden.¹⁵⁰ However, the burden of knowledge about one’s genetics is not equivalent to knowledge about the risks of unhealthy eating behaviors. The difference is that people do not have control over their genetic makeup, whereas they can modify their eating habits to reduce the

¹⁴⁹ Ibid., 273–274.

¹⁵⁰ Andorno, “The Right Not to Know: An Autonomy Based Approach.”

risk of disease. Banning certain foods would directly would infringe on people's autonomy, which Libertarians value deeply. In order for people to exert their autonomy and make dietary choices, people cannot wish not to know the risks of eating certain foods. Returning to the quote I cited earlier by Mill, "the buyer cannot wish not to know that the thing he possesses has poisonous qualities."¹⁵¹ Therefore Libertarians may be justified in opposing food bans, however, their argument over the "right not to know" is flawed because they cannot wish to harm themselves out of ignorance.

Conclusion

Regulating food will not be easy, however, that does not mean it is not worthwhile. There is no reason food regulation should be off the table, given that other risky behaviors and substances are regulated. I have established that Americans have already consented to regulations to ensure informed consent when engaging in many risky behaviors, and that these policies have improved health outcomes. Food is not morally different from other risky substances. It is also now evident that junk foods have an addictive quality, which further supports this claim. Therefore, if we accept the regulation of other risky substances and behaviors, there is no reason why food should remain unregulated. I will outline my proposal for effective food regulation in the next chapter, now that we have established the legitimacy of such policies.

¹⁵¹ John Stuart Mill, *On Liberty*.

Chapter 3: Consumer Protection: A New Vision for Food Policy

In Chapter 2, I established the importance of ensuring that American consumers can competently make informed choices. Now I will look at obesity prevention via food regulation through a consumer protection framework. Many of the regulations of risky behaviors that I discussed in the last chapter serve the common good as well as consumers' rights. Organizations such as the Federal Trade Commission (FTC) serve to prevent fraud, deception, and unfair business practices in the marketplace.¹⁵² As a result, the US government enforces policies to ensure consumers are not harmed by their purchasing decisions. For example, the FTC may take advertising agents to court if they believe an ad has the potential to deceive consumers.¹⁵³ The FTC also enforces a wide variety of other consumer protection statutes relating to issues such as product warranties, product packaging and labeling, lending disclosures, "fair credit" billing and reporting procedures, telemarketing fraud prevention, children's online privacy protection, and identity theft prevention and detection.¹⁵⁴ In addition, the government has created several online resources such as *consumer.gov* to help Americans make smart decisions such as managing their money and avoiding identity theft.¹⁵⁵ In this chapter, I will review several of the risky behavior regulations from the previous chapter through the lens of consumer protection, as well as make several policy proposals for food regulation.

1. Age Restrictions

¹⁵² "Federal Trade Commission - About Us."

¹⁵³ "Ohio State Bar Association."

¹⁵⁴ Ibid.

¹⁵⁵ "Help for You."

One possibility is to view food choices as a matter of competence that comes with maturity. If this is true, policy makers could enact age restrictions on the purchase and/or consumption of unhealthy products. The US already enforces age restrictions on alcohol and tobacco use. Studies indicate that age restrictions on driving and purchasing alcohol lead to improved health gains.¹⁵⁶ Legal driving ages were set based on scientific research on cognitive development. Although there is still debate today on what the most appropriate age cutoff is for driving regulations, both many policy makers and researchers determined that people 16 years old are able handle the distractions of the road.¹⁵⁷ Some states (and other countries) enforce different age restrictions for driving, but there appears to be unanimity that this form of regulation is appropriate. Studies have found that there is a natural drivers' experience variable at play regardless of the driving age; drivers are less likely to get into fatal accidents as they gain driving experience.¹⁵⁸

The legal drinking ages and legal driving ages are intertwined. One of the reasons why raising the minimum legal drinking age (MLDA) from 18 to 21 led to a decrease in mortality is because raising the drinking age reduced teenage drunk driving rates.¹⁵⁹ Although it is still debated today, there are several studies (including an extremely thorough analysis in the July 2008 journal *Accident Analysis and Prevention*) that conclude raising the MLDA to 21 saves lives.¹⁶⁰ The US has a long history of experimenting to determine the appropriate drinking age,

¹⁵⁶ Wagenaar and Toomey, "Effects of Minimum Drinking Age Laws"; Jones, Pieper, and Roberston, "The Effect of Legal Drinking Age on Fatal Injuries of Adolescents and Young Adults"; Robert Bock, "Graduated Drivers Licensing Programs Reduce Fatal Teen Crashes"; "Teen Driving."

¹⁵⁷ "Teen Driving."

¹⁵⁸ Jones, Pieper, and Roberston, "The Effect of Legal Drinking Age on Fatal Injuries of Adolescents and Young Adults."

¹⁵⁹ Toomey, Nelson, and Lenk, "The Age-21 Minimum Legal Drinking Age."

¹⁶⁰ "Minimum Drinking Age Of 21 Saves Lives, Study Finds."

but policy makers determined that people are most competent and have a reduced mortality rate with an MLDA of 21.¹⁶¹ Interestingly, there is a lack of convincing data that tobacco age restrictions are effective in reducing smoking.¹⁶² New York City is about to introduce legislation to change the minimum age for purchasing tobacco from 18 to 21. New York policy makers are aiming to make it more difficult for teenagers to obtain tobacco, since they are less likely to spend time with 21 year olds, rather than 18 year olds.¹⁶³ It will be interesting to see how this legislation unfolds because it could set a precedent for more aggressive public health regulation despite a lack of scientific evidence of improved outcomes.

If there is a lesson to be learned from age restriction regulations, I believe it is that they will always be controversial and are not the most effective policy to deter risky behaviors. This is evident due to the prevalence of underage drinking and smoking in the US. While age regulations on food is a policy option, I believe this is not the most effective policy option because it will be met with heavy resistance and is not guaranteed to improve health outcomes. In addition, age restrictions would be difficult to enforce. It would be arbitrary to determine which foods should be regulated, and at what age people are competent to make food decisions. The factors than contribute to one's ability to make food choices are complex; they include biological factors, environmental factors, and social factors. Some more specific examples include socioeconomic status, education, family and friends, attitudes and beliefs about food, psychological factors, different metabolism rates and biological taste preferences.¹⁶⁴ I do not

¹⁶¹ Toomey, Nelson, and Lenk, "The Age-21 Minimum Legal Drinking Age"; Lai, "Old Enough to Vote, Old Enough to Smoke?"

¹⁶² "Debating Age Limits on Tobacco."

¹⁶³ "Brown"; "Smoking Age Could Rise to 21 Under New City Legislation - DNAinfo.com New York."

¹⁶⁴ Bellisle, *The Determinants of Food Choice*.

believe eating a poor diet is a result of age-related incompetence; therefore age restriction policies are not an effective method for reducing obesity.

Both age regulations and general food bans would also be challenging to implement because each food industry would argue that their food products should be exempt from regulation because they can be eaten in moderation as part of a balanced diet. To demonstrate my point, let's imagine soda is the first food item to be regulated by an age restriction. The soda and sweetened beverage industry would likely be the first proposed regulated food item because they do not have very much nutritional value and are linked to obesity.¹⁶⁵ If such a policy was enacted, the soda industry could argue that sweetened dairy products such as chocolate milk should be regulated. Although chocolate milk is more nutritious than soda, it does contain excess sugar. Taking this example further, if chocolate milk were regulated, the milk industry could argue that sweetened/flavored yogurts should also be regulated. Soon Greek yogurt, the beloved health product, would be vilified for its sugar content. If all flavored dairy products were regulated with age restrictions then flavored milk and yogurt products could not be sold directly to children, including school lunches. I suspect such a policy would lead to a calcium deficit and other unforeseen consequences. Although this example may seem extreme, the point is that there would have to be an arbitrary limit to which foods are regulated. Each food industry could present a viable argument as to why another food group should be regulated, until all food groups would be regulated. This is a slippery slope policy that is not morally sound. Realistically, food restriction policies are unlikely to be implemented due to the food industry's political connections to lobbyists and policy-makers.

¹⁶⁵ "Sugary Drinks and Obesity Fact Sheet."

2. Food Bans

Some public health paternalists support policy proposals to ban sodas and other junk foods in schools and other settings to make unhealthy food choices unavailable. For example in 2007, California passed legislation to ban sodas and certain junk foods (or “competitive foods”, as compete against the offerings of the national school lunch program) in vending machines in elementary and high schools.¹⁶⁶ The Center for Disease Control and Prevention conducted a study to measure the effectiveness of the policy, and the study concluded that of all the states considered, the students in California had the lowest average daily calorie count, as well as the lowest consumption of fat and added sugars.¹⁶⁷ The success of this policy had led policy makers to consider junk food bans in other settings. In April 2013, Rep. Alissa Keny-Guyer, D-Portland, sponsored HB 3403, which requires all food and drinks sold in public vending machines to meet health specifications. Specifically, snacks may not be more than 200 calories and may contain no more than 35 percent of their calories from fat or sugar.¹⁶⁸ I believe vending machine regulation is an effective way to motivate the food industry redesign healthier products for vending machines, as well as facilitate consumers’ efforts to make healthy food choices.

I think banning unhealthy foods from vending machines is an acceptable policy, but their effects will be limited. I believe it is possible and permissible for policy makers to expand where food bans are enacted, with the acknowledgement that junk foods will not be banned altogether. For example, junk food regulations could be extended to performance theaters, sporting venues, airports, and government buildings. This form of food regulation may be effective in improving

¹⁶⁶ “Bans on School Junk Food Pay Off in California.”

¹⁶⁷ “The Benefits of a Junk Food Ban”; “Bans on School Junk Food Pay Off in California”; Taber et al., “Weight Status Among Adolescents in States That Govern Competitive Food Nutrition Content.”

¹⁶⁸ “Bill Would Ban Pop and Junk Food in Public Vending Machines | The Lund Report.”

health outcomes by decreasing mindless eating. Many people eat unhealthy foods at these sorts of venues out of habit. People mentally associate certain foods with locations, such as popcorn and movie theaters.¹⁶⁹ Regulating the foods at locations with junk food associations will help consumers to build new, healthier relationships with food. In addition, many people may not be aware of how many calories they consume at these locations because they are distracted.¹⁷⁰ Especially at locations such as movie theaters and sporting venues, people often consume unhealthy food without paying attention to their bodies. Banning junk foods in locations where people are likely to make mindless food choices will facilitate healthy food choices.

One could argue that if it is permissible to ban unhealthy foods from certain venues, we ought to ban the foods altogether. Such a policy proposal would be met with fierce opposition from the food industries, and much of the general public would be outraged. Returning to John Stuart Mill's argument in the second chapter, I believe banning unhealthy foods altogether is morally impermissible because it infringes on their autonomy. If people are aware of the risks of eating certain foods and have access to healthier options, they should be permitted to consume junk food. What makes regulating junk foods at specific locations morally different from regulating foods altogether is that people's capacity to make informed or competent decisions may be compromised in those settings.

On the more practical side, banning foods altogether would not be feasible, and would lead to a large black market. There is already a micro black market forming in schools where the competitive food regulations have been enacted. For example, "following the passage of the Texas Public School Nutrition Policy, which banned candy, enterprising students at Austin High began selling bags full of candy at premium prices, with some reportedly making up to \$200 per

¹⁶⁹ "Why We Mindlessly Eat Junk Food — and How to Stop."

¹⁷⁰ "Distracted Eating May Add to Weight Gain."

week.”¹⁷¹ Criminalizing unhealthy foods may have negative effects, such as making junk food a symbol of juvenile rebellion. One extreme blog describes the future should such a ban be passed as the following:

It starts with criminalizing soda “possession,” followed by arrests of people caught with “intent to distribute” soda. From there, it escalates into two guys who talked about distributing soda and are now being charged with “conspiracy to distribute an illegal substance,” which is of course a felony. Can you imagine these people winding up in the joint, next to a violent rapist who asks, “What are you in for?” “Pepsi.”¹⁷²

Although this vision is severe, it highlights how food bans may cause a cultural shift in perceptions of junk food, but may not change eating behaviors or health outcomes.

In addition to objections due to the difficulty of implementing a ban, some people may oppose to food bans based on cultural values. The United States is generally known for its opposition to “big government” regulations. In a study of cultural values across different countries, the US scores high on individualism, meaning that our citizens value independence. Americans have a general expectation that people will take care of themselves and their families, therefore the government doesn’t need to act as a “nanny state”. The US also scores relatively high on uncertainty avoidance, meaning we are more accepting to risk-taking and value freedom of expression.¹⁷³ These underlying values make it clear that the public would not be in favor of the government controlling what foods a person can and cannot eat.

3. Labeling Requirements

¹⁷¹ Cardello, “Prohibition.”

¹⁷² “Instead of Banning Soda, Maybe It’s Time We Banned Stupid Government Bans.”

¹⁷³ Hofstede, *Cultures and Organizations*; “The United States.”

A more plausible solution would be to enact labeling requirements. Just as there are warnings on cigarette cartons that smoking causes cancer, there could be warnings on junk foods. For example, soda bottles could have a label reading “Regular consumption of sugar sweetened beverages causes weight gain, and could lead to obesity.” There have been other proposals to reform food labels in the US to facilitate consumers’ decision-making abilities. The Center for Science in the Public Interest made a comprehensive report and proposal for food labeling reform, which I support. The report cites Food and Drug Administration (FDA) Commissioner Dr. Margaret Hamburg, who said at the National Food Policy Conference in 2009:

[T]he public health importance of food labeling as an essential means for informing consumers about proper nutrition . . . has not been substantially addressed since the FDA implemented the Nutrition Labeling and Education Act, more than 16 years ago. . . . [W]e’ve seen the emergence of claims that may not provide the full picture of their products’ true nutritional value. It will be important to reestablish a science-based approach to protect the public.¹⁷⁴

Possible labeling reforms could include front-of-package labeling and improving the Nutrition Facts Panels (i.e. current labels). Nutrition label reform would mirror the credit card contract reform of 2009. CreditCards.com conducted a study that found four out of five Americans could not understand their credit card contracts. This meant that many credit card holders racked up fines because they did not comply with their contract—which they did unknowingly because they didn’t understand it.¹⁷⁵ Congress solved this problem by passing a bill in 2009 requiring credit card contracts to present information in a manner that all consumers can easily interpret

¹⁷⁴ Silverglade and Heller, *Food Labeling Chaos: The Case for Reform*, 9.

¹⁷⁵ Connie Prater, “U.S. Credit Card Agreements Unreadable to 4 Out of 5 Adults.”

them (specifically at a ninth-grade reading level).¹⁷⁶ Like credit card reform, food labels could be simplified so that more consumers understand the contents of their foods and how to make healthy food choices. Some suggestions in the Center for Science in the Public Interest's report include simplifying serving size requirements (such as reporting a ½ cup serving instead of in ounces) and updating the recommended serving amounts. Suggested serving sizes on the current food labels are determined from the Reference Amount Customarily Consumed (RACC) data collected in 1977-78 and 1987-88 Nationwide Food Consumption Surveys developed by the USDA, which are out-of-date. Portion sizes have grown in the last 20 years, which means people are not eating the recommended portions. Either portions size could be regulated to reflect the RACCs, or (more likely) labels could report nutrition facts based on current perceptions of a portion size. "For example, the RACC for ice cream is ½ cup. Many consumers eat considerably more than that amount and may not realize that they need to recalculate the calorie information based on the number of servings they actually consume."¹⁷⁷

I support one of the most controversial of the proposals for a bright label based on the colors of a traffic light. Traffic light labeling was initially proposed in Europe to address their rising obesity rates. This format of labeling is already in place voluntarily in some British supermarkets, which uses red, yellow and green circles to indicate how healthy products are in four categories: fat, saturated fat, sugar and salt.¹⁷⁸ The EU began its nutrition labeling reform in 2008, due to their rising obesity rates. EU lawmakers ultimately chose in June 2010 a different food label because food industry groups claimed the traffic light label "patronized consumers and that consumers who strictly adhered to the green lights would not be able to eat a healthy

¹⁷⁶ Ibid.

¹⁷⁷ Silverglade and Heller, *Food Labeling Chaos: The Case for Reform*, 6.

¹⁷⁸ Cendrowicz, "Will Europe Green-Light New Food Labels?"

diet.”¹⁷⁹ In addition, the Confederation of the Food and Drink Industries and its companies spent \$1.45 trillion lobbying to assure the traffic light label did not get passed.¹⁸⁰ While it is true that color-coding food choices simplifies the food decision-making process, I believe it would be a useful tool for many consumers to learn how to use food labels to make healthy food choices.

Traffic light inspired food labeling has been proven effective empirically. In 2012, Massachusetts General Hospital published a 9-month longitudinal study that assessed changes in purchases of healthy and unhealthy foods following several types of food interventions.¹⁸¹ The study’s first intervention was a traffic light-style color-coded labeling system in which green items represented healthy choices to be encouraged, yellow signified a warning that the product was high in sugar/fat/sodium etc., and red items signified unhealthy items to be avoided. The second intervention manipulated "choice architecture," meaning certain cafeteria items were rearranged physically to make green-labeled items more accessible and red-labeled items less accessible. Compared to white employees at baseline, Latino and black employees purchased more red items (18%, 28%, and 33%, respectively) and fewer green items (48%, 38%, and 33%).¹⁸² Labeling decreased all employees' red item purchases and increased green item purchases. More specifically, employees overall decreased red item purchases 11.2% during the labeling intervention and further decreased red purchases 4.1% during the choice architecture intervention. Interestingly, green purchases increased 6.6% during Phase 1, and then decreased 1.9% during Phase 2 relative to Phase 1; however it is important to notice both interventions led to healthier decision-making. The relative changes in purchases during Phase 1 and Phase 2 were

¹⁷⁹ “Food Labels.”

¹⁸⁰ *Ibid.*

¹⁸¹ Levy et al., “Food Choices of Minority and Low-income Employees.”

¹⁸² *Ibid.*

similar across all racial/ethnicity and job-type categories, suggesting that the intervention consistently and uniformly impacted all subpopulations.¹⁸³ This is one of several studies that have found traffic light labeling to be effective in guiding consumers to make health food choices, which has been met with support from much of the general public.¹⁸⁴ I am not suggesting that this format is the only viable labeling option, but it is clear a color-coded system is easy to understand. Food label reform is a necessary consumer protection regulation to ensure that Americans are not misled into making unhealthy food choices.¹⁸⁵

4. Junk Food Taxes

Another policy used to discourage use of risky substances is taxation, (e.g. tobacco and alcohol taxes). Junk foods could be taxed to incentivize healthy food choices and to fund obesity prevention programs. New York, Philadelphia, and California policy makers have discussed implementing junk food “sin” taxes, although none have been implemented to date. Other countries have implemented similar taxes, such as Denmark and Hungary. In 2011, Denmark introduced a 16 kroner (\$2.7) tax per kilogram of saturated fats in all food products.¹⁸⁶ The policy did not differentiate between highly processed foods and natural foods (such as butter or cheeses). The policy initially appeared to be a success, and many countries drafted policies based off of Denmark’s. However, in November 2012, the Danish government announced that they would be repealing the fat tax because it increased companies’ administrative costs and caused Danes to

¹⁸³ Ibid.

¹⁸⁴ Silverglade and Heller, *Food Labeling Chaos: The Case for Reform*; Ellison, Lusk, and Davis, “Looking at the Label and Beyond.”

¹⁸⁵ *Traffic Light Labelling--helping People Make Healthy Choices.*

¹⁸⁶ “What the World Can Learn from Denmark’s Failed Fat Tax.”

venture across the border to purchase their unhealthy snacks rather than change their diets.¹⁸⁷

Hungary's policy charges the equivalent of 50 U.S. cents on fatty foods plus higher tariffs on soda and alcohol to generate money for health care costs.¹⁸⁸ These countries are using taxes as a method to fund health care costs and influence their citizens' diets, even though their obesity rates are far below the US rates.¹⁸⁹

These policies are based on research that people's food choices are affected by prices. In a 2010 study from the University of North Carolina at Chapel Hill, participants consumed less of their calories from soda or pizza when there was a 10 percent increase in the price of either product.¹⁹⁰ In this study, a \$1.00 increase in soda prices was linked to a mean of 124 fewer total daily calories, which resulted in an average weight loss of 2.34 pounds. As for the pizza, a \$1.00 increase in the price of both soda and pizza at the same time was associated with even larger reductions in total energy intake, body weight, and insulin resistance.¹⁹¹ There are several other studies that suggest that taxing unhealthy foods would lead to decreased consumption and improved health outcomes.¹⁹² The food industry will surely meet tax proposals with fierce opposition, yet I believe this is a viable policy option and a great way to fund health promotion initiatives.

Objection: Reforms Disproportionately Affect the Poor

¹⁸⁷ Ibid.

¹⁸⁸ "Hungary Introduces 'Fat Tax' (Don't Laugh)."

¹⁸⁹ "How U.S. Obesity Compares With Other Countries."

¹⁹⁰ "Pizza Soda Tax May Make Americans Healthier."

¹⁹¹ Ibid.

¹⁹² Caraher and Cowburn, "Taxing Food"; Yaniv, Rosin, and Tobol, "Junk-food, Home Cooking, Physical Activity and Obesity."

The major objection to taxing junk foods is that it would disproportionately affect the poor, because often junk food is all that they can afford. One study found that "almost 15 percent of households in America say they don't have enough money to eat the way they want to eat," and that they are unable to afford the foods necessary to meet the federal nutrition guidelines.¹⁹³ While nutritionists can prove that a healthy diet can be inexpensive, some people may live in areas where they do not have access to inexpensive healthy foods or are not aware that they can afford to eat better. These people will perceive junk food taxes as punishment the diet they consume out of necessity. In order to compensate for the increased costs of junk foods, ideally these taxes should be enacted with food subsidy reforms so that healthy foods are *less expensive*. Combining these food policies would financially motivate everyone to eat more healthily. Taxing junk food alone may not decrease obesity rates in the US, but it may be a very effective measure to change eating habits. This highlights a greater systemic problem with the current food system—cash crop subsidies that incentivize poor diets.

The Farm Bill and Food System Corruption

The reason why highly processed foods are often the least expensive options is ultimately because of farm subsidies, which have existed since the first farm bill was introduced in Congress as the Agricultural Adjustment Act of 1933. It was a New Deal program designed to help farmers in the Depression era earn enough to keep their farms and to feed Americans struggling with hunger.¹⁹⁴ The bill has evolved to include fifteen titles that address issues such as commodities, conservation, research, nutrition, crop insurance, and food aid. Title I specifies the specific food commodities that are subsidized to encourage farmers to grow products that are

¹⁹³ "Study."

¹⁹⁴ *Farm Bill 101*.

staples in the American diet. Subsidized commodities include wheat, corn and other feed grains, cotton, rice, oilseeds, peanuts, sugar and dairy.¹⁹⁵ Unfortunately, the crops that are subsidized (often referred to as “cash crops”) are not in alignment with the USDA’s dietary recommendations.¹⁹⁶ Meat and dairy receive almost 75 percent of the subsidies (directly and indirectly through feed), followed by about 13% of the subsidies going towards grains.¹⁹⁷ Although meats and grains are key parts of the recommended diet, they are consumed in excess in the United States. In contrast, fruits and vegetables receive less than .5% of the subsidies, yet they are supposed to be the second largest component of the American diet (followed by grains).¹⁹⁸ Due to the farm bill, the United States uses 30% of the land base to plant corn. This policy enables farmers to be reimbursed such that the cost of production for corn is lower than other crops.

Because there are huge financial incentives for growing corn and other cash crops, the subsidized crops are overproduced. The excess of corn and soy in particular have led to entrepreneurship of new products, most notably high fructose corn syrup. Corn, soy, and grain fillers are used across the food industry to drive down the costs of production. In the docudrama “Food Inc.” Roush said, “I would venture to guess if you go and look on the supermarket shelf, I’ll bet you 90% of them would contain either a corn or soybean ingredient, and most of the time will contain both.”¹⁹⁹ Corn can be used to produce a massive range of products “from ethanol for the gas tank to dozens of edible, if not nutritious, products, like the thickener in a milkshake, the

¹⁹⁵ “Farm Bill 101: What You Need to Know About the Next Farm Bill.”

¹⁹⁶ “The 9 Foods the U.S. Government Is Paying You to Eat.”

¹⁹⁷ “Farm Bill 101: What You Need to Know About the Next Farm Bill”; “Farm Subsidies Not in Sync with Food Pyramid”; “Why That Salad Costs More Than a Big Mac.”

¹⁹⁸ “Why That Salad Costs More Than a Big Mac.”

¹⁹⁹ Kenner et al., *Food, Inc.*

hydrogenated oil in margarine, the modified cornstarch that binds the pulverized meat in a McNugget and, most disastrously, the ubiquitous sweetener known as high-fructose corn syrup (HFCS).”²⁰⁰ This is problematic because high-fructose corn syrup has been linked to obesity because it stimulates the brain differently than glucose (“regular sugar”), which causes overeating.²⁰¹ Therefore there are reverse incentives for farmers to overproduce certain crops, for the food industry to incorporate those crops into production, and for consumers to eat excessive amounts of these harmful products.

Changing Our Food Environment

In order to create a less toxic environment that enables consumers to easily make healthy food choices, the food system must be restructured to promote consumption of fresh, whole foods instead of highly processed junk foods. Changing the food environment in which we live will require many policy changes, as well as a cultural shift. The culture of what is best to eat is already changing in America, but it is a slow process to reform a cultural diet. The emerging American diet is a “local/global groove... combining immigrant knowledge and older, regional American traditions with the mashup tastes of the Internet-nurtured young.”²⁰² Part of the “immigrant knowledge” is embracing home cooked foods, fresh produce, and lean meats. More importantly, American food culture is moving (albeit slowly) away from processed, fast food on the go and towards valuing meals as social time. This is due to grassroots organizations such as the Slow Food movement, which strive to education Americans on the social, environmental, and

²⁰⁰ Abbot, “Beware of High Fructose Corn Syrup.”

²⁰¹ “How Corn Syrup Might Be Making Us Hungry—and Fat | Observations, Scientific American Blog Network.”

²⁰² Mowbray, “The Rise of the New Food Culture.”

economic impact of their food choices.²⁰³ We are returning to a culture where the quality of foods matter because we can no longer sacrifice quality for price—obesity rates have proven that this compromise is too costly. According to Whole Foods Market’s 2012 “Food Shopping Trend Tracker Survey,” 73% of Americans don’t want to compromise on the quality of the food they buy regardless of current food prices.²⁰⁴ 71% indicated a preference for natural and organic foods over conventional foods if the prices are comparable. The survey also found 27% of US shoppers spend more than a quarter of their grocery dollars to these types of products, which is up 35% from 2008.²⁰⁵ In addition to cultural change through campaign and social media efforts from private for-profit and non-profit organizations, the government has the opportunity to change the food climate in the US through its revision of the Farm Bill. The farm bills are approved for 5-year terms, with the most recent bill of 2008 expiring in 2013. The Senate and House are expected to begin work on new farm bills later this year after failing to get legislation passed last fall.²⁰⁶ I look forward to seeing the next generation farm bill, and sincerely hope it creates financial incentives to eat a healthier diet. Although agricultural reform is not on the forefront of the US political agenda, I do not believe obesity rates will drop dramatically until our food system is restructured.

Cap and Trade Proposal

Another way to view the US food system is to envision it as a polluted environment, much like the air is polluted with toxins. 1990 Clean Air Act amendments regulated acid-rain-

²⁰³ “What Is Slow Food?”.

²⁰⁴ “Americans Seek Value, Won’t Compromise on Quality.”

²⁰⁵ Ibid.

²⁰⁶ “New Estimates Question Savings from Farm Bills.”

causing pollutants like sulfur dioxide by capping the overall permissible amount of pollution. Once the overall amount of pollution was established, utilities were allowed to trade pollution credits on the open market. Some companies faced greater expenses to cut emissions than others, but they were able innovate to the best of their abilities, as well as trade allowances to stay within the permitted pollution allocations. As long as the overall cap was not exceeded, the government didn't intervene, letting the market work out the details. Since the cap and trade policy implementation, overall levels of sulfur dioxide emissions have been halved, and air and surface-water quality have improved substantially.²⁰⁷

In 2011, an article in the *New England Journal of Medicine* proposed the notion of cap and trade be applied to food. The U.S. food supply can also be viewed as a polluted environment. Because of the food industry's practices and consumers' preferences (whether they are conscious of them or not), pollutants such as excessive salt, sweeteners, and fat are taking a toll on public health. Setting a cap on the amount of harmful ingredients used in U.S. food production could significantly improve the American diet. The article suggests this approach could take many forms but would work best if applied to entities that supply food products directly to consumers, rather than to the producers of the raw ingredients.²⁰⁸ I like this proposal because it encourages food companies to innovate to make their products healthier. Many food companies have been making gradual modifications to their products to improve their nutrition profiles, but a cap and trade policy would put pressure on the industry to rapidly develop healthy products.

Choice Architecture

²⁰⁷ Kliff, "Cap and Trade as Food Policy."

²⁰⁸ Lewis and Rosenthal, "Individual Responsibility or a Policy Solution — Cap and Trade for the U.S. Diet?"; Kliff, "Cap and Trade as Food Policy."

Many possible policies fall under the concept of “choice architecture,” which was mentioned earlier in the chapter. Choice architecture was coined by Harvard Law School Professor Cass Sunstein and University of Chicago economist Richard Thaler in their book *Nudge: Improving Decisions About Health, Wealth, and Happiness*. Choice architecture can be defined as the careful design of the environments to help people make good choices. The idea is that people make better choices if they are given a clear and well-designed set of options that acknowledge and offset imperfect human nature.²⁰⁹ Consumers are bombarded with mixed messages when they are shopping for food, and they are easily influenced to make poor health decisions. Policy makers can shape the decision-making climate through policies such as taxes, advertising regulations, and product placement. Sunstein and Thaler write, “A nudge ... is any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives... To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level [in a school cafeteria line] counts as a nudge. Banning junk food does not.”²¹⁰ They call choice architecture libertarian paternalism because the public is still empowered to make choices. For example, Sunstein and Thaler highlight the example that many people never join their employer’s retirement savings plan, even when it is heavily subsidized. Many people do not opt into these plans because they are overwhelmed with information and are unable to rationally process these types of decisions, so they passively opt out.²¹¹ The Obama administration countered this human quirk by providing incentives for employers to automatically enroll employees in retirement savings plans, while giving them the option to opt

²⁰⁹ “Sunstein Shows How ‘choice Architecture’ Can Help People Make Better Decisions.”

²¹⁰ Ibid.

²¹¹ “Sunstein Shows How ‘choice Architecture’ Can Help People Make Better Decisions.”

out. Before the incentives were implemented, people were not likely to active opt *in* to the program; Obama's policy has the opposite effect, making people likely to remain passive and avoid opting *out* of the program.²¹²

Whether due to laziness, information overload, or other reasons, people do not always make rational decisions about food. Taxes, redesigning grocery store and cafeteria layouts, and advertising reforms are viable public policy nudges that could lead to healthier food decisions. I support policy makers' use of choice architecture because it protects consumers from being misled into making unhealthy decisions. Choice architecture to affect eating behavior has already been implemented in the private sector. Google Inc. has been praised for creating a healthy environment for its employees, especially in their meticulously designed cafeteria.²¹³ Google has implemented the traffic light labeling and decreased plate sizes to help employees make healthy choices and eat less food overall. The culinary team at Google also decreased the portion sizes of desserts, relocated the dessert section to the back of the cafeteria, and placed candy in opaque jars instead of transparent jars in order to make employees more conscious of their consumption of sugary foods.²¹⁴ The candy jar experiment alone caused employees to reduce consumption of candy by 9 percent, from 29 to 20 percent, and they decreased the proportion of total fat consumed from candy dropped 11 percent, from 26 percent to 15 percent.²¹⁵ Another example of a nudge that is effective is to provide healthier options in vending machines across various settings. HUMAN Healthy Vending is a vending machine company that was founded in 2008 aiming to have 10,000 machines across all 50 States by 2015, with the

²¹² Wallace-wells, "Cass Sunstein Wants to Nudge Us."

²¹³ "Google Revamped Eating Options to 'Nudge' Healthy Choices."

²¹⁴ "Behind the Scenes at Google's Cafeteria"; "Google Revamped Eating Options to 'Nudge' Healthy Choices."

²¹⁵ "Google Revamped Eating Options to 'Nudge' Healthy Choices."

mission of changing the eating habits of millions of Americans.²¹⁶ HUMAN Healthy Vending machines are locally franchised, and the company “advises the local operators on what products to stock, encouraging them to locally-source where possible. When choosing items, the H.U.M.A.N. looks to minimize artificial additives, focusing instead on fibre, protein, complex carbohydrates and vitamin count.”²¹⁷ While it is difficult to measure the direct impact of changing the foods in individual vending machines, I believe this is a great step towards improving people’s diets by increasing access to healthy foods. Cafeterias, vending machines, restaurants, and food carts are several venders that have the ability to nudge consumers to make healthier food choices. Over time, better decision making will lead to improved health outcomes.

Objection to Choice Architecture

One objection to the use of choice architecture is that policy makers compromise consumers’ autonomy. Mark D. White argues that choice architects are in effect making decisions for consumers. Choice architects are aware of how their nudges will impact consumers’ decisions; therefore consumers are not making a truly free choice.²¹⁸ I counter this claim by arguing that consumers’ are going to be influenced by their environment regardless of the presence of choice architects. The junk food industry spends millions of dollars on research in order to understand the most effective marketing strategies to influence consumer behavior so that they purchase these products. Junk food marketers *are* choice architects. Policy makers have an equal claim to influencing consumers as the food industry. In fact, one could argue that policy

²¹⁶ “Meet the HUMAN Healthy Vending Team – Pics and Videos Included.”

²¹⁷ “Healthy Vending Machines.”

²¹⁸ White, “Banning Super-Sized Sodas? A Libertarian Inquiry into Paternalism in Economic Choice.”

makers have a greater claim to influence consumers, because they are acting in the consumers' best interest (rather than the food industry's selfish interests).

Objection: Consequentialism vs. Kantianism

All public health policies, such as obesity-prevention measures will limit autonomy to a certain extent. For example, many people were opposed to the proposal in New York to prohibit the sale of sugar-sweetened beverages in containers larger than 16 ounces because people should have the right to purchase *any* sized container. This highlights the fundamental dilemma: is it permissible to limit autonomy if it leads to major consequentialist gains? In the case of obesity specifically, is it acceptable to implement policies that restrict Americans' rights if it leads to decreased obesity rates and improved health outcomes? I believe it is permissible. Kantians may never agree with me regardless of the outcomes of such policies. Yet the government will always infringe on the citizens' autonomy, so Kantians instead should consider which policies are more or less permissible.

One Kantian philosopher who provides insight on this dilemma is David Velleman. Velleman's article "A Right to Self Termination?" is about the right to smoke and to commit suicide, but can be applied of the right to eat a poor diet. Velleman explains that the fundamental Kantian believe is that people are inherently of value due to their rational nature. Morality requires us to respect the "dignity" (or value) of people. He then shares a story of an encounter with a smoker who argues that he has the right to smoke because he would rather die younger and experience the benefits of smoking than to live longer without smoking. Velleman explains that he disagrees with the smoker's logic because the value in a person is different from the value

in a person's interests. A person cannot claim that out of respect of his autonomy, others should defer to his judgment to smoke because the smoker is, in effect, claiming that his life is not of enough value to protect. However, Kantians value other people not because the individuals value themselves, but rather because people are inherently valuable. Velleman writes:

My host's remarks implied that an early death, of the sort he was risking and I was hoping to forestall, would be a loss to him that could be offset. My host was implicitly denying the existence of such a value. For he claimed that death was worth worrying about only in respects for which he could be compensated by the pleasures of smoking. He was thus implicitly denying the interest-independent value of a person, without which it couldn't really matter whether I lived or died. I think Kant was right to say that trading one's person in exchange for benefits, or relief from harms, denigrates the value of personhood, respect for which is a criterion of morality (Kant would say, the criterion). That's why I think that smoking is a vice—at least, when practiced for the reasons offered by my host. It's also why I think that suicide is immoral when committed on the grounds that life isn't worth living.²¹⁹

This same argument can be applied to allowing people to eat their way to obesity. Obese people are in effect choosing to shorten their lives and place medical burdens on their families and the medical system as a whole in exchange for the benefits of eating junk food. By allowing people to eat their way into such a state, we are rejecting the inherent value of these people. Although the obese person may not value himself, this person is of value to other people—not only in the Kantian sense. Obese individuals have families and friends who suffer from dealing with the

²¹⁹ Velleman, "A Right of Self-Termination?," 613–614.

burden of their obese loved one; their suffering would worsen should these people die due to their obese condition. By permitting people to eat in a manner that leads to obesity, we are permitting obese people to harm their communities and society as a whole. Therefore just as Velleman finds people do not have the right to self-termination, people do not have the right to harm themselves via obesity.

Objection: Arbitrary Laws

In order to combat obesity, determining which foods should be regulated will be arbitrary. If the government tries to reduce American sugar consumption, the sugar industry can argue that it is wrong to target sugar instead of promoting an overall balanced diet. It is likely that sugar or fat consumption will be targeting first because they are easy to measure. In fact, New York City was already working to create policies to curb sugar intake. Mayor Bloomberg from New York tried to pass what has become known as the “Big Gulp Ban,” however in March 2013 the bill was stuck down. The New York Times wrote, “Justice Milton A. Tingling of State Supreme Court in Manhattan called the limits ‘arbitrary and capricious,’ echoing the complaints of city business owners and consumers who had deemed the rules unworkable and unenforceable, with confusing loopholes and voluminous exemptions.”²²⁰ The ban was arbitrary in nature because it would have limited the size of sugar-sweetened beverages in some locations rather than altogether. In addition, it was somewhat arbitrary which drinks would be exempt from the ban; milks and diet sodas would not be restricted. Diet soda exemption is especially controversial because studies are beginning to show that artificial sweeteners are harmful and may contribute to obesity.²²¹ While I understand the frustrations businesses and consumers may

²²⁰ Grynbaum, “Judge Invalidates Bloomberg’s Ban on Sugary Drinks.”

²²¹ “Artificial Sweeteners Tied to Obesity, Type 2 Diabetes - Health - CBC News.”

face due to such a policy, I do not believe the arbitrary nature of Bloomberg's proposal is a valid objection because we permit other arbitrary laws to persist.

One arbitrary law that is infrequently discussed is speed limit regulations. Speed limits can vary across states, are enforced to various degrees, and the frequency in signs to inform drivers of the limits does not appear consistent. According to the Chicago Tribune, "Experts establish limits on some streets and highways based on their special knowledge of safety, but new studies by Federal Highway Administration traffic research engineers suggest that the limits on many other thoroughfares are set arbitrarily."²²² Another arbitrary law is gun regulations. In response to several shootings in the United States in 2012-2013, most notably the shooting at an elementary school in Newtown, Connecticut, President Obama has committed to limit access to guns and certain types of ammunition. One of the proposals is to cap ammunition magazines to a 10-round limit, which is an arbitrary number.²²³ Yet many people support policies such as the two listed here, even though they are arbitrary.

I am not claiming that Bloomberg's soda regulations would have cured the obesity epidemic. However, I believe it was a great step towards a movement of regulation to change the choice architecture on which Americans base their food decisions. It is inevitable that the policies chosen to fight obesity may be arbitrary. It is the nature of the US government to make incremental steps towards its public policy goals. Tackling obesity requires a comprehensive approach that may appear to be a patchwork of arbitrary laws. There may be better policy proposals that could be implemented to incentivize purchasing smaller portions of food items. It is very likely that future food regulation proposals will also be somewhat arbitrary, but that is not

²²² "Some Speed Limits Found Too Arbitrary."

²²³ "Obama Calls for Sweeping New Gun Laws."

enough of a basis to discard policies. If the current ruling on Bloomberg's proposal is upheld, the precedent will be set that food regulations that are arbitrary may prevent policy makers from improving the toxic food environment for a very long time. I hope that another food regulation policy is enacted in the US to establish the viability of such regulations to reduce obesity. Perhaps the problems with Bloomberg's policy extend beyond arbitrariness, and policy makers will continue to pursue the use of food regulations.

Conclusion: An Ideal Vision

I am not claiming to be a policy expert who knows how to cure the obesity epidemic. The goal of my thesis was to demonstrate that we are morally obligated to regulate food if we find public health paternalism permissible. I will conclude this chapter with my vision for the best approach to combating the obesity epidemic. Some of these proposals may not seem viable, but perhaps there will be a tipping point at which the American people will support significantly increased government intervention. Below is my ideal vision for food reform.

First, I believe nutrition education should be incorporated into standardized testing for children. This would hold teachers accountable for ensuring children know the basics about a healthy diet. If children are educated on how to eat a balanced, they will be able to influence their families' eating habits and ultimately become more informed parents themselves. The USDA has already created many educational resources on nutrition; therefore teachers would simply need a brief training on how to use the materials. Many schools in the US already incorporate nutrition education into their curriculum, and I believe there are a variety of effective ways this information could be learned. Ideally the curriculum would teach children about macronutrients, the origins of food, and how to create balanced meals. This would make children

appreciate fresh foods, understand the importance of eating a healthy diet, and be equipped to make healthy food choices.

The next policy I endorse is warning labels and general food label reform. I believe the traffic light style labeling is an effective method to guide consumers towards healthy products by highlighting positive choices. Warning labels would have the opposite effect to deter people from making poor health choices. I believe it is reasonable to put an obesity warning label on sodas because they do not contribute any nutritional value to one's diet and are empirically linked to rising obesity rates. I would support warning labels on other products such as fried foods (perhaps with beyond a certain limit of saturated fat), however I will not make explicit proposals for which foods should be labeled.

I also think there should be increased food advertising restrictions. The volume of junk food advertisements should be limited, especially during programs targeting at children. In addition to restricting advertisements for unhealthy foods, the government should create (or subsidize) advertisements for fruits and vegetables. The current food culture in America promotes junk foods and does not draw attention to healthy, whole foods. The government should decrease consumers' exposure to junk food advertising because the advertisements may be misleading or create junk food cravings.²²⁴ Increasing media attention and promotion of fruits and vegetables may influence consumers to develop healthier preferences. By changing the foods we see in advertisements, our perceptions of a normal diet may improve.

I support "sin taxes" especially on soda because it seems to be a great way to collect funding for health promotion and obesity intervention initiatives. I am not going to discuss the

²²⁴ "Kids Develop Junk Food Cravings from TV Ads | Ad Madness."

economic effects of implementing a junk food sin tax, but I believe that raising the prices of junk food will lead to a reduction in consumption. Just as taxing cigarettes leads to smoking rates, food taxes would create financial incentive to eat healthier products.²²⁵ The United States can learn from other countries' food tax strategies to determine the most effective policy.

Finally, I do not believe obesity rates will decrease significantly until the US food system is reformed. This means that the farm bill must be reformed such that fruits and vegetables are subsidized instead of cash crops. Creating incentives for farmers to grow fruits and vegetables will influence both manufacturers and consumers to eat better. Food industry manufacturers would be motivated economically to design products that incorporate the subsidized fruits and vegetables (excluding corn and soy). Consumers would also be affected by the reduced prices of subsidized foods and would opt for healthier options because they would be more affordable.

Overall, people should not feel that it is a burden to eat healthily. Food should be a source of pleasure and well being. By informing consumers on healthy choices, warning them about potentially hazardous food choices, and making a healthy diet affordable and accessible, the government can make Americans feel empowered to make eat well. Everyone deserves the right to be healthy. The government's obligation to protect Americans' right to life, liberty, and the pursuit of happiness includes making sure citizens have the ability to be healthy by eating a nutritious diet. No one should be too poor or too ignorant to eat well and maintain a healthy weight. Most people do not willingly choose to be obese—it is the result of poor lifestyle behaviors established without guidance on how to live otherwise. The government has the potential to redefine American culture to incorporate a healthy diet and an active lifestyle.

²²⁵ Kux, "Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco to Protect Children and Adolescents."

Regulating food is one of many strategies the government could use to improve health outcomes in the US. Once the American diet is improved, the government could focus on physical exercise promotion and other factors that contribute to the obesity epidemic. I do not expect food regulation to fully solve the obesity crisis, but I believe it the single most effective strategy to improve American obesity rates.

Works Cited

- “11 Facts About American Eating Habits.” *Do Something*. Accessed March 22, 2013. <http://www.dosomething.org/tipsandtools/11-facts-about-american-eating-habits>.
- Abbot, Henry. “Beware of High Fructose Corn Syrup.” *Disease Proof: Eat Smart Live Happy*, n.d. <http://www.diseaseproof.com/archives/obesity-beware-the-high-fructose-corn-syrup.html>.
- “American Council On Exercise.” *ACE Fit | Fitness Information*. Accessed April 19, 2013. http://www.acefitness.org/acefit/overlays/EmailCapture_250x200.aspx.
- American Lung Association Research and Program Services Unit. *Trends in Tobacco Use*. American Lung Association, July 2011. <http://www.lung.org/finding-cures/our-research/trend-reports/Tobacco-Trend-Report.pdf>.
- “American Soda Consumption: Half Of Us Drink It Everyday, Study Says.” *Huffington Post*, July 25, 2012. http://www.huffingtonpost.com/2012/07/25/half-of-americans-drink-soda-everyday-consumption_n_1699540.html.
- “Americans Seek Value, Won’t Compromise on Quality.” *Progressive Grocer*, October 4, 2012. <http://www.progressivegrocer.com/top-stories/headlines/consumer-insights/id36391/americans-seek-value-wont-compromise-on-quality/>.
- Andorno, R. “The Right Not to Know: An Autonomy Based Approach.” *J Med Ethics* 30 (2004): 435–439. doi:10.1136/jme.2002.001578.
- “Artificial Sweeteners Tied to Obesity, Type 2 Diabetes - Health - CBC News.” Accessed April 13, 2013. <http://www.cbc.ca/news/health/story/2013/02/15/artificial-sweeteners-diet-nutrition.html>.
- “Bans on School Junk Food Pay Off in California.” *Well*. Accessed May 1, 2013. <http://well.blogs.nytimes.com/2012/05/08/bans-on-school-junk-food-pay-off-in-california/>.
- Begley, Sharon. “As America’s Waistline Expands, Costs Soar.” *Reuters*. April 30, 2012. <http://www.reuters.com/article/2012/04/30/us-obesity-idUSBRE83T0C820120430>.
- Behan, Donald F., and Samuel H. Cox. *Obesity and Its Relation to Mortality and Morbidity Costs*. Committee on Life Insurance Research, Society of Actuaries, December 2010. <http://www.soa.org/research/research-projects/life-insurance/research-obesity-relation-mortality.aspx>.
- “Behind the Scenes at Google’s Cafeteria: BA Daily.” *Bon Appétit*. Accessed May 1, 2013. <http://www.bonappetit.com/blogsandforums/blogs/badaily/2013/02/google-employee-cafeteria-food.html>.
- Bellisle, France. *The Determinants of Food Choice*. European Food Information Council, April 2005. <http://www.eufic.org/article/en/expid/review-food-choice/>.
- Bernard, Michelle. “Obesity Problem Is About Personal Responsibility and Access.” *Huffington Post*, August 3, 2011. http://www.huffingtonpost.com/michelle-bernard/post_2273_b_917283.html.
- “Biingo.” Accessed May 2, 2013. <http://www.nbc.com/the-biggest-loser/contestants/biingo/>.
- “Bill Would Ban Pop and Junk Food in Public Vending Machines | The Lund Report,” April 9, 2013. http://www.thelundreport.org/resource/bill_would_ban_pop_and_junk_food_in_public_vending_machines.

- “Brown: No Fire for Raising Smoking Age - Chicago Sun-Times.” Accessed April 30, 2013. <http://www.suntimes.com/news/brown/19657276-452/brown-no-fire-for-raising-smoking-age.html>.
- Brownell, Kelly D., Rogan Kersh, David S. Ludwig, Robert C. Post, Rebecca M. Puhl, Marlene B. Schwartz, and Walter C. Willett. “Personal Responsibility And Obesity: A Constructive Approach To A Controversial Issue.” *Health Affairs* 29, no. 3 (March 1, 2010): 379–387. doi:10.1377/hlthaff.2009.0739.
- Caraher, Martin, and Gill Cowburn. “Taxing Food: Implications for Public Health Nutrition.” *Public Health Nutrition* 8, no. 08 (2005): 1242–1249. doi:10.1079/PHN2005755.
- Cardello, Hank. “Prohibition: The Wrong Way to Improve Child Nutrition.” *The Atlantic*, January 11, 2011. <http://www.theatlantic.com/health/archive/2011/01/prohibition-the-wrong-way-to-improve-child-nutrition/69265/>.
- Carey, Stephanie. “Montgomery Township Health Department: Increasing Success Rates in Community Obesity Prevention Programs.” *NJ Collaborative For Excellence in Public Health*, 2010. http://www.njceph.org/Learning_Sessions_files/Montgomery%20Obesity%20Storyboard-Final.doc.pdf.
- Cawley, John. “The Economics Of Childhood Obesity.” *Health Affairs* 29, no. 3 (March 1, 2010): 364–371. doi:10.1377/hlthaff.2009.0721.
- “CDC - Fact Sheets-Minimum Legal Drinking Age - Alcohol.” Accessed May 2, 2013. <http://www.cdc.gov/alcohol/fact-sheets/mlda.htm>.
- Cendrowicz, Leo. “Will Europe Green-Light New Food Labels?” *Time*. Accessed April 11, 2013. <http://www.time.com/time/world/article/0,8599,1972548,00.html>.
- Chabris, Christopher, and Daniel Simons. “Does This Ad Make Me Fat?” *The New York Times*, March 8, 2013, sec. Opinion / Sunday Review. <http://www.nytimes.com/2013/03/10/opinion/sunday/does-this-ad-make-me-fat.html>.
- Chan, Ruth S.M, and Jean Woo. “Prevention of Overweight and Obesity: How Effective Is the Current Public Health Approach.” *International Journal of Environmental Research and Public Health* 7, no. 3 (March 2010): 765–783. doi:10.3390/ijerph7030765.
- “College Presidents Urge Rethink On Drinking Age: NPR.” *NPR.org*. Accessed May 2, 2013. <http://www.npr.org/templates/story/story.php?storyId=93749553>.
- Connie Prater. “U.S. Credit Card Agreements Unreadable to 4 Out of 5 Adults.” *CreditCards.com*, July 22, 2010. <http://www.creditcards.com/credit-card-news/credit-card-agreement-readability-1282.php>.
- Contento, Isobel R. “Nutrition Education: Linking Research, Theory, and Practice.” *Asian Pacific Journal of Clinical Nutrition* 17, no. 1 (2008): 176–179.
- “Debating Age Limits on Tobacco.” *Well*. Accessed April 30, 2013. <http://well.blogs.nytimes.com/2013/04/29/debating-age-limits-on-tobacco/>.
- “Decades-Long U.S. Decrease in Smoking Rates Levels Off.” *The Washington Post*, November 9, 2007, sec. Nation. http://www.washingtonpost.com/wp-dyn/content/article/2007/11/08/AR2007110801094_2.html.
- “Depression (major Depression).” *Mayo Clinic*, October 1, 2011. <http://www.mayoclinic.com/health/depression-and-exercise/MH00043>.
- “Depression, Major.” *MDGuidelines*, n.d. <http://www.mdguidelines.com/depression-major>.

- “Diet, Not Exercise, Plays Key Role in Weight Loss.” *Msnbc.com*. Accessed March 22, 2013. http://www.nbcnews.com/id/28524942/ns/health-diet_and_nutrition/t/diet-not-exercise-plays-key-role-weight-loss/.
- “Distracted Eating May Add to Weight Gain.” *Harvard Health Blog*. Accessed May 1, 2013. <http://www.health.harvard.edu/blog/distracted-eating-may-add-to-weight-gain-201303296037>.
- Division, Systems Support. “The 2012 Statistical Abstract - U.S. Census Bureau: Transportation.” *United States Census Bureau*, 2011. <http://www.census.gov/compendia/statab/2012/tables/12s1103.pdf>.
- “Drug Policy Reform.” *Gary Johnson 2012*. Accessed May 2, 2013. <https://www.garyjohnson2012.com/issues/drug-policy-reform>.
- “Drunk Driving Research.” *Century Council*. Accessed March 20, 2013. <http://www.centurycouncil.org/drunk-driving/drunk-driving-research>.
- Edelson, Christopher P. “Toward Rational Regulation of Marijuana in the United States: FDA’s Role in Consumer Choice and Safety.” Harvard Law School, 1995. <http://leda.law.harvard.edu/leda/data/86/cedelson.html>.
- Ellison, Brenna, Jayson L Lusk, and David Davis. “Looking at the Label and Beyond: The Effects of Calorie Labels, Health Consciousness, and Demographics on Caloric Intake in Restaurants.” *International Journal of Behavioral Nutrition and Physical Activity* 10, no. 1 (2013): 21. doi:10.1186/1479-5868-10-21.
- Engstrom, David. “Obesity and Depression.” *Obesity Action Coalition*, n.d. <http://www.obesityaction.org/educational-resources/resource-articles-2/obesity-related-diseases/obesity-and-depression>.
- Evans, Leonard. “A New Traffic Safety Vision for the United States.” *American Journal of Public Health* 93, no. 9 (September 2003): 1384–1386.
- Everett, M. “Let an Overweight Person Call on Your Best Customers? Fat Chance.” *Sales Market Manage.* 142 (1990): 66–70.
- “Exclusive: Michelle Obama: ‘Let’s Move’ on Childhood Obesity.” *ABC News*, February 9, 2010. <http://abcnews.go.com/GMA/Health/michelle-obama-childhood-obesity-initiative/story?id=9781473>.
- “Fact Check: The Cost of Obesity - CNN.com.” Accessed March 30, 2013. <http://www.cnn.com/2010/HEALTH/02/09/fact.check.obesity/index.html>.
- “Fact Sheet: Reforms to Protect American Credit Card Holders | The White House.” Accessed March 22, 2013. http://www.whitehouse.gov/the_press_office/Fact-Sheet-Reforms-to-Protect-American-Credit-Card-Holders.
- Fals, Angela. About Healthy 100 Kids. Phone, April 8, 2013.
- Farm Bill 101*. American Jewish World Service, n.d. http://ajws.org/reversehunger/docs/ajws_farm_bill_101.pdf.
- “Farm Bill 101: What You Need to Know About the Next Farm Bill.” *American Farmland: The Magazine of American Farmland Trust*, Summer/Fall 2011. http://www.farmbillfacts.org/wp-content/uploads/2012/02/AFTFarmBill_reprint_lowres_Fall11.pdf.
- “Farm Subsidies Not in Sync with Food Pyramid.” *Msnbc.com*. Accessed May 2, 2013. <http://www.nbcnews.com/id/8904252/ns/health-fitness/t/farm-subsidies-not-sync-food-pyramid/>.

- “Fast Food Restaurants Not Fighting Child Obesity.” *CBS News*. Accessed May 2, 2013.
http://www.cbsnews.com/8301-18563_162-7035550.html.
- “Federal Trade Commission - About Us.” Accessed April 29, 2013.
<http://www.ftc.gov/ftc/about.shtm>.
- Fell, James C, Kristina Jones, Eduardo Romano, and Robert Voas. “An Evaluation of Graduated Driver Licensing Effects on Fatal Crash Involvements of Young Drivers in the United States.” *Traffic Injury Prevention* 12, no. 5 (October 2011): 423–431.
 doi:10.1080/15389588.2011.588296.
- Finkelstein, Eric A., Justin G. Trogon, Joel W. Cohen, and William Dietz. “Annual Medical Spending Attributable To Obesity: Payer-And Service-Specific Estimates.” *Health Affairs* 28, no. 5 (September 1, 2009): w822–w831. doi:10.1377/hlthaff.28.5.w822.
- “Food Labels: EU Sets New Mark, Help Rethink Ours.” *Civil Eats*. Accessed April 12, 2013.
<http://civileats.com/2011/06/16/eus-new-food-label-a-chance-to-help-rethink-the-us-food-label/>.
- Fox, Steven. “Intense Obesity Interventions Don’t Increase Attrition.” *Medscape*, October 20, 2011. <http://www.medscape.com/viewarticle/751851>.
- Freeman, Andrea. *Fast Food: Oppression Through Poor Nutrition*. SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, July 14, 2010.
<http://papers.ssrn.com/abstract=1639302>.
- Fung, Brian. “Obesity Makes Us Waste More Than a Billion Gallons of Gas Every Year.” *The Atlantic*, April 30, 2012. <http://www.theatlantic.com/health/archive/2012/04/obesity-makes-us-waste-more-than-a-billion-gallons-of-gas-every-year/256521/>.
- Gatineau, Mary, and Monica Dent. *Obesity and Mental Health*. Public Health England, March 2011. http://www.noo.org.uk/NOO_pub/briefing_papers.
- “Gazette Opinion: Facts, Public Opinion Support Changing State Seat Belt Law.” *The Billings Gazette*. Accessed May 2, 2013.
http://billingsgazette.com/news/opinion/editorial/gazette-opinion/gazette-opinion-facts-public-opinion-support-changing-state-seat-belt/article_31280379-c63b-5fec-9815-60d47bb3d3a6.html.
- “Google Revamped Eating Options to ‘Nudge’ Healthy Choices.” *ABC News*, January 26, 2013.
<http://abcnews.go.com/Health/google-diet-search-giant-overhauled-eating-options-nudge/story?id=18241908>.
- Grynbaum, Michael M. “Judge Invalidates Bloomberg’s Ban on Sugary Drinks.” *The New York Times*, March 11, 2013, sec. N.Y. / Region.
<http://www.nytimes.com/2013/03/12/nyregion/judge-invalidates-bloombergs-soda-ban.html>.
- “Guide to California’s Marijuana Laws.” Accessed March 20, 2013.
<http://www.canorml.org/camjlaws.html>.
- Guthrie, Joanne F., Brenda M. Derby, and Alan S. Levy. *America’s Eating Habits: Changes and Consequences. Chapter 13: What People Know and Do Not Know About Nutrition*. USDA Economic Research Service, 1999. <http://www.ers.usda.gov/publications/aib-agricultural-information-bulletin/aib750.aspx#.UVcoPavwKb8>.
- Guyatt, GH, C Naylor, E Juniper, DK Hayland, R Jaeschke, and DJ Cook. “Guides to the Medical Literature: Xii. How to Use Articles About Health-related Quality of Life” 277, no. 15 (April 16, 1997). doi:10.1001/jama.1997.03540390062037.

- Hammond, Ross A., and Ruth Levine. "The Economic Impact of Obesity in the United States." *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy* (August 17, 2010): 285–295. doi:<http://dx.doi.org/10.2147/DMSO.S7384>.
- Harris, Jennifer L., John A. Bargh, and Kelly D. Brownell. "Priming Effects of Television Food Advertising on Eating Behavior." *Health Psychology* 28, no. 4 (2009): 404–413. doi:10.1037/a0014399.
- Health, CDC's Office on Smoking and. "Smoking and Tobacco Use; Fact Sheet; Tobacco-Related Mortality." *Smoking and Tobacco Use*. Accessed March 26, 2013. http://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/tobacco_related_mortality/.
- . "Smoking and Tobacco Use; Fact Sheet; Youth and Tobacco Use." *Smoking and Tobacco Use*. Accessed May 2, 2013. http://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/.
- "Health Effects of Morbid Obesity," n.d. <http://www.gastricbypass.com/HEMO.htm>.
- "Healthy Vending Machines: The Future Of Snack Food." *Forbes*. Accessed May 1, 2013. <http://www.forbes.com/sites/natalierobehmed/2012/07/27/healthy-vending-machines-the-future-of-snack-food/>.
- "Help for You." Accessed April 29, 2013. <http://www.consumer.gov/content/help-you>.
- Hoffman, John, Dan Chaykin, and Sarah Teale. *The Weight of the Nation*. New York: HBO Home Box Office, 2012.
- Hofstede, Geert H. *Cultures and Organizations: Software of the Mind*. McGraw-Hill Ryerson, Limited, 2005.
- Holdorf, William J. "The Fraud of Seat-Belt Laws Infringe a Person's Constitutional Rights." *Foundation for Economic Education*, September 1, 2002. http://www.fee.org/the_freeman/detail/the-fraud-of-seat-belt-laws#ixzz2S9jHlgPr.
- "How Corn Syrup Might Be Making Us Hungry—and Fat | Observations, Scientific American Blog Network." Accessed May 1, 2013. <http://blogs.scientificamerican.com/observations/2013/01/01/how-corn-syrup-might-be-making-us-hungry-and-fat/>.
- "How The Food Industry Is Enabling The United States' Obesity Epidemic." Accessed April 16, 2013. <http://thinkprogress.org/health/2013/01/11/1436441/food-industry-obesity-epidemic/?mobile=nc>.
- "How U.S. Obesity Compares With Other Countries." Accessed May 1, 2013. <http://www.pbs.org/newshour/rundown/2013/04/how-us-obesity-compares-with-other-countries.html>.
- "Hungary Introduces 'Fat Tax' (Don't Laugh)." *The Atlantic*, September 1, 2011. <http://www.theatlantic.com/business/archive/2011/09/hungary-introduces-fat-tax-dont-laugh/244440/>.
- "Instead of Banning Soda, Maybe It's Time We Banned Stupid Government Bans." *Infowars*. Accessed April 10, 2013. <http://www.infowars.com/instead-of-banning-soda-maybe-its-time-we-banned-stupid-government-bans/>.
- John Stuart Mill. *On Liberty*. Vol. 25. Harvard Classics, 1860. <http://www.constitution.org/jsm/liberty.htm>.
- Jones, Nancy E., Carl F. Pieper, and Leon S. Roberston. "The Effect of Legal Drinking Ago on Fatal Injuries of Adolescents and Young Adults." *American Journal of Public Health* 82 (1992): 112–115.

- Kenner, Robert, Richard Pearce, Eric Schlosser, Melissa Robledo, William Pohlada, Jeff Skoll, Robin Schorr, et al. *Food, Inc.* [Los Angeles, CA]: Magnolia Home Entertainment, 2009. http://www.script-o-rama.com/movie_scripts/f/food-inc-script-transcript.html.
- Kerr, William C., Thomas K. Greenfield, Jason Bond, Yu Ye, and Jürgen Rehm. “Age, Period and Cohort Influences on Beer, Wine and Spirits Consumption Trends in the US National Alcohol Surveys.” *Addiction* 99, no. 9 (2004): 1111–1120. doi:10.1111/j.1360-0443.2004.00820.x.
- “Kids Develop Junk Food Cravings from TV Ads | Ad Madness.” Accessed May 1, 2013. <http://www.admadness.co/2011/07/kids-develop-food-cravings-from-ads/>.
- Kinsley, Michael. “A Lawsuit to Choke On.” *Time*. Accessed April 16, 2013. <http://www.time.com/time/nation/article/0,8599,332981,00.html>.
- Kliff, Sarah. “Cap and Trade as Food Policy.” *The Washington Post - Blogs*, October 31, 2011. http://www.washingtonpost.com/blogs/wonkblog/post/cap-and-trade-as-food-policy/2011/10/31/gIQAj226YM_blog.html.
- Kushner, Robert F, and Gary D Foster. “Obesity and Quality of Life” 16, no. 10 (October 2010): 947–952. doi:[http://dx.doi.org/10.1016/S0899-9007\(00\)00404-4](http://dx.doi.org/10.1016/S0899-9007(00)00404-4).
- Kux, Leslie. “Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco to Protect Children and Adolescents.” Food and Drug Administration, HHS., 10 2011. <http://www.fda.gov/downloads/TobaccoProducts/GuidanceComplianceRegulatoryInformation/UCM280094.pdf>.
- Lai, Jennifer. “Old Enough to Vote, Old Enough to Smoke?” *Slate*, April 23, 2013. http://www.slate.com/articles/news_and_politics/explainer/2013/04/new_york_minimum_smoking_age_why_are_young_people_considered_adults_at_18.html.
- Lee, Jennifer S., Jennifer L.O. Sheer, Nancy Lopez, and Sara Rosenbaum. “Coverage of Obesity Treatment: A State-by-State Analysis of Medicaid and State Insurance Laws.” *Public Health Reports* 125, no. 4 (2010): 596–604.
- Levy, Douglas E, Jason Riis, Lillian M Sonnenberg, Susan J Barraclough, and Anne N Thorndike. “Food Choices of Minority and Low-income Employees: a Cafeteria Intervention.” *American Journal of Preventive Medicine* 43, no. 3 (September 2012): 240–248. doi:10.1016/j.amepre.2012.05.004.
- Lewis, Kristina H., and Meredith B. Rosenthal. “Individual Responsibility or a Policy Solution — Cap and Trade for the U.S. Diet?” *New England Journal of Medicine* 365, no. 17 (2011): 1561–1563. doi:10.1056/NEJMp1105128.
- Living Well with Chronic Illness: A Call for Public Health Action*. Washington, DC: Institute of Medicine, January 2012. http://iom.edu/~media/Files/Report%20Files/2012/Living-Well-with-Chronic-Illness/livingwell_chronicillness_reportbrief.pdf.
- Macqueen, C. E., A. E. Brynes, and G. S. Frost. “Treating Obesity: Can the Stages of Change Model Help Predict Outcome Measures?” *Journal of Human Nutrition and Dietetics* 12, no. 3 (1999): 229–236. doi:10.1046/j.1365-277x.1999.00162.x.
- MacVean, Mary. “‘Smart Choice’ Food Label: a Sign of Nutrition or Marketing?” *Los Angeles Times*, September 29, 2009. <http://articles.latimes.com/2009/sep/29/science/sci-smart29>.
- “McDonald’s CEO Defends Spokesclown, ‘Right To Choose’ Fast Food.” *Huffington Post*, May 19, 2011. http://www.huffingtonpost.com/2011/05/19/mcdonalds-ceo-right-to-choose_n_864369.html.

- “Meet the HUMAN Healthy Vending Team – Pics and Videos Included.” *H.U.M.A.N. Healthy Vending*. Accessed May 1, 2013. <http://www.healthyvending.com/aboutus/>.
- Mello, Michelle M., Eric B. Rimm, and David M. Studdert. “The McLawsuit: The Fast-Food Industry And Legal Accountability For Obesity.” *Health Affairs* 22, no. 6 (November 1, 2003): 207–216. doi:10.1377/hlthaff.22.6.207.
- Mill, John Stuart. *On Liberty*. Boston: Ricknor and Fields, 1863.
http://teachers.sduhsd.k12.ca.us/tpsocsciences/world_history/nationalism/mill.htm.
- “Minimum Drinking Age Of 21 Saves Lives, Study Finds.” *ScienceDaily*. Accessed May 1, 2013. <http://www.sciencedaily.com/releases/2008/07/080701083542.htm>.
- Moss, Michael. “The Extraordinary Science of Addictive Junk Food.” *The New York Times*, February 20, 2013, sec. Magazine. <http://www.nytimes.com/2013/02/24/magazine/the-extraordinary-science-of-junk-food.html>.
- Mowbray, Scott. “The Rise of the New Food Culture.” *Huffington Post*, December 10, 2012. http://www.huffingtonpost.com/scott-mowbray/rise-new-food-culture_b_2270530.html.
- Mozaffarian, Dariush, Tao Hao, Eric B. Rimm, Walter C. Willett, and Frank B. Hu. “Changes in Diet and Lifestyle and Long-Term Weight Gain in Women and Men.” *New England Journal of Medicine* 364, no. 25 (2011): 2392–2404. doi:10.1056/NEJMoa1014296.
- “MyPlate 5 Food Groups Nutritional Graphic - Replaces the Pyramid.” *HealthyEating.org*. Accessed April 19, 2013. <http://www.healthyeating.org/Health-Wellness-Providers/Nutrition-Information/MyPlate.aspx?Referer=dairycouncilofca>.
- Nantel, Julie, Marie-Eve Mathieu, and François Prince. “Physical Activity and Obesity: Biomechanical and Physiological Key Concepts.” *Journal of Obesity* 2011 (2011): 1–10. doi:10.1155/2011/650230.
- “New Estimates Question Savings from Farm Bills.” *The Caucus*. Accessed April 12, 2013. <http://thecaucus.blogs.nytimes.com/2013/03/04/new-estimates-question-savings-from-farm-bills/>.
- “Obama Calls for Sweeping New Gun Laws.” *CBS News*. Accessed April 13, 2013. http://www.cbsnews.com/8301-250_162-57564298/obama-calls-for-sweeping-new-gun-laws/.
- “Obesity-Related Diseases.” *ObesityinAmerica.org*, 2013. <http://obesityinamerica.org/understanding-obesity/obesity-related-diseases/>.
- “Obesity: Complications.” *Mayo Clinic*, August 2012. <http://www.mayoclinic.com/health/obesity/DS00314/DSECTION=complications>.
- Office of Behavioral Safety Research National Highway Traffic Safety Administration. *Teen Driver Crashes: A Report to Congress*. National Highway Traffic Safety Administration, July 2008. <http://www.nhtsa.gov/testing/young>.
- “Ohio State Bar Association.” *OhioBar.org*. Accessed April 29, 2013. <https://www.ohio-bar.org/ForPublic/Resources/LawYouCanUse/Pages/LawYouCanUse-128.aspx>.
- “Overview of Amendment 64.” *Yes on 64: The Colorado Campaign to Regulate Marijuana Like Alcohol*. Accessed March 20, 2013. <http://www.regulatemarijuana.org/about>.
- “Overweight and Obesity.” *Centers for Disease Control and Prevention*, n.d. <http://www.cdc.gov/obesity/data/facts.html>.
- Pearson, Catherine. “Diet Vs. Exercise: Which Lowers Death Risk More?” *Huffington Post*, December 5, 2011. http://www.huffingtonpost.com/2011/12/05/diet-exercises-risk-of-death_n_1129959.html.

- Pingitore, R, B L Dugoni, R S Tindale, and B Spring. "Bias Against Overweight Job Applicants in a Simulated Employment Interview." *The Journal of Applied Psychology* 79, no. 6 (December 1994): 909–917.
- "Pizza Soda Tax May Make Americans Healthier." *ABC News*, March 10, 2010. http://abcnews.go.com/Health/w_DietAndFitness/junk-food-tax-improve-health/story?id=10056236.
- "Potato Chips Piling on the Pounds, Study Finds." *CBS News*. Accessed March 22, 2013. http://www.cbsnews.com/8301-204_162-20073582/potato-chips-piling-on-the-pounds-study-finds/.
- Profiling Food Consumption in America*. United States Department of Agriculture, 2002. <http://www.usda.gov/factbook/chapter2.htm>.
- "Psychological Side Effects of Morbid Obesity and Other Obesity Statistics." *CIO Foundation*, n.d. <http://www.ciofoundation.org/obesity-statistics.html>.
- Puhl, Rebecca, and Kelly D. Brownell. "Bias, Discrimination, and Obesity." *Obesity Research* 9, no. 12 (2001): 788–805. doi:10.1038/oby.2001.108.
- "ROAD TRAFFIC ACCIDENTS DEATH RATE BY COUNTRY." *World Life Expectancy*. Accessed March 21, 2013. <http://www.worldlifeexpectancy.com/cause-of-death/road-traffic-accidents/by-country>.
- Robert Bock. "Graduated Drivers Licensing Programs Reduce Fatal Teen Crashes." *NIH News*, November 4, 2011. <http://www.nih.gov/news/health/nov2011/nichd-04.htm>.
- Saad, Lydia. "US Smoking Rate Still Coming Down." *Gallup*, July 24, 2008. <http://www.gallup.com/poll/109048/us-smoking-rate-still-coming-down.aspx>.
- Sebelius, Kathleen. *Preventive and Obesity-Related Services Available to Medicaid Enrollees*. Report to Congress. Department of Health and Human Services USA, 2010. http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Quality-of-Care/Downloads/RTC_PreventiveandObesityRelatedServices.pdf.
- Sharma, Manoj. "Dietary Education in School-Based Childhood Obesity Prevention Programs." *Advances in Nutrition: An International Review Journal* 2, no. 2 (March 1, 2011): 207S–216S. doi:10.3945/an.111.000315.
- "Should the Government Help You Lose Weight?" *Marketplace.org*. Accessed March 30, 2013. <http://www.marketplace.org/topics/life/commentary/should-government-help-you-lose-weight>.
- Silverglade, Bruce, and Ilene Heller. *Food Labeling Chaos: The Case for Reform*. Washington, DC: Center for Science in the Public Interest, March 2010. http://www.cspinet.org/new/pdf/food_labeling_chaos_report.pdf.
- Simpson, Lisa A. "Paying for Obesity: A Changing Landscape." *Pediatrics* 123, no. 5 (June 1, 2009): S301–S307. doi:10.1542/peds.2008-2780I.
- "Smoking Age Could Rise to 21 Under New City Legislation - DNAinfo.com New York." *DNAinfo*. Accessed May 1, 2013. <http://www.dnainfo.com/new-york/20130422/new-york-city/smoking-age-could-rise-21-under-new-city-legislation>.
- "Sneaky Commercials: The Unconscious Way TV Makes You Eat." Accessed March 22, 2013. <http://www.psychologytoday.com/blog/mental-mishaps/201008/sneaky-commercials-the-unconscious-way-tv-makes-you-eat>.
- "Some Speed Limits Found Too Arbitrary." *Chicago Tribune*. Accessed April 13, 2013. http://articles.chicagotribune.com/1991-09-09/news/9103080106_1_speed-limits-speed-zones-traffic.

- “Stages of Change Model.” *AddictionInfo*, n.d.
<http://www.addictioninfo.org/articles/11/1/Stages-of-Change-Model/Page1.html>.
- Starfield, B. “Basic Concepts in Population Health and Health Care.” *Journal of Epidemiology & Community Health* 55, no. 7 (July 1, 2001): 452–454. doi:10.1136/jech.55.7.452.
- State of Drunk Driving Fatalities in America 2010*. The Century Council, 2010.
http://www.centurycouncil.org/sites/default/files/materials/SODDFIA_0.pdf.
- “State School Healthy Policy Database: Nutrition Education.” *National Association of State Boards of Education*, January 2, 2006.
http://www.nasbe.org/healthy_schools/hs/bytopics.php?topicid=1150&catExpand=acdnbtm_catA.
- Steinbrook, Robert. “Imposing Personal Responsibility for Health.” *New England Journal of Medicine* 355, no. 8 (2006): 753–756. doi:10.1056/NEJMp068141.
- “Study: Healthy Eating a Privilege of the Rich.” *CBS News*. Accessed May 1, 2013.
http://www.cbsnews.com/8301-204_162-20087921.html.
- “Sugary Drinks and Obesity Fact Sheet.” *The Nutrition Source*. Accessed May 1, 2013.
<http://www.hsph.harvard.edu/nutritionsource/sugary-drinks-fact-sheet/>.
- Sunstein, Cass R. “It’s For Your Own Good!” *The New York Review of Books*, March 7, 2013.
<http://www.nybooks.com/articles/archives/2013/mar/07/its-your-own-good/>.
- “Sunstein Shows How ‘choice Architecture’ Can Help People Make Better Decisions.” Accessed April 12, 2013. <http://www.law.harvard.edu/news/spotlight/public-service/related/cass-sunstein-nudge.html>.
- “Sunstein Shows How ‘choice Architecture’ Can Help People Make Better Decisions.” Accessed May 1, 2013. <http://www.law.harvard.edu/news/spotlight/public-service/related/cass-sunstein-nudge.html>.
- Taber, Daniel R., Jamie F. Chriqui, Frank M. Perna, Lisa M. Powell, and Frank J. Chaloupka. “Weight Status Among Adolescents in States That Govern Competitive Food Nutrition Content.” *Pediatrics* (August 13, 2012). doi:10.1542/peds.2011-3353.
- “Teen Driving.” *CQ Researcher by CQ Press*. Accessed March 21, 2013.
<http://library.cqpress.com/cqresearcher/cqresrre2005010700>.
- “Teen Driving Age Should Be Raised, Says Auto Safety Group.” *The Huffington Post*. Accessed March 20, 2013. http://www.huffingtonpost.com/2008/09/09/teen-driving-age-should-b_n_125010.html.
- “Text of H.R. 554 (109th): Personal Responsibility in Food Consumption Act of 2005 (Placed on Calendar in the Senate Version) - GovTrack.us.” *GovTrack.us*. Accessed April 16, 2013.
<http://www.govtrack.us/congress/bills/109/hr554/text>.
- “The 9 Foods the U.S. Government Is Paying You to Eat.” *Mercola.com*. Accessed May 2, 2013.
<http://articles.mercola.com/sites/articles/archive/2011/08/03/the-9-foods-the-us-government-is-paying-you-to-eat.aspx>.
- “The Average American Daily Caloric Intake.” *LIVESTRONG.COM*. Accessed March 22, 2013.
<http://www.livestrong.com/article/347737-the-average-american-daily-caloric-intake/>.
- “The Benefits of a Junk Food Ban.” Accessed May 1, 2013.
<http://www.jonbarron.org/article/benefits-junk-food-ban>.
- “The Ethics of Obesity Part II: Dying for Fast Food?” *Gael O’Brien The Week in Ethics: Columns on Ethics, Leadership and Life*. Accessed May 2, 2013.
<http://theweekinethics.wordpress.com/2009/12/15/the-ethics-of-obesity-part-ii-dying-for-fast-food/>.

- “The Truth About Advertising Junk Food to Children: It Works.” *Yale News*. Accessed March 22, 2013. <http://news.yale.edu/2011/05/09/truth-about-advertising-junk-food-children-it-works>.
- “The United States.” *The Hofstede Centre*, n.d. <http://geert-hofstede.com/united-states.html>.
- Thoenen, Eugenia. *Obesity: Facts, Figures, Guidelines*. West Virginia Health Statistic Center, December 2002. <http://www.wvdhhr.org/bph/oehp/obesity/mortality.htm>.
- Thornton, Mark. *Alcohol Prohibition Was a Failure*. CATO Institute, 1991. <http://www.cato.org/sites/cato.org/files/pubs/pdf/pa157.pdf>.
- Toomey, Traci L., Toben F. Nelson, and Kathleen M. Lenk. “The Age-21 Minimum Legal Drinking Age: a Case Study Linking Past and Current Debates.” *Addiction* 104, no. 12 (2009): 1958–1965. doi:10.1111/j.1360-0443.2009.02742.x.
- Traffic Light Labelling--helping People Make Healthy Choices*. World Cancer Research Fund UK position statement. London, England: World Cancer Research Fund, 2010. http://www.wcrf.org/PDFs/Food-Labelling-Position_WCRF.pdf.
- Trasande, Leonardo, Yinghua Liu, George Fryer, and Michael Weitzman. “Effects Of Childhood Obesity On Hospital Care And Costs, 1999–2005.” *Health Affairs* 28, no. 4 (July 1, 2009): w751–w760. doi:10.1377/hlthaff.28.4.w751.
- Truswell, A Stewart. “Family Physicians and Patients: Is Effective Nutrition Interaction Possible?” *American Journal of Clinical Nutrition* 71 (2000): 6–12.
- “U of M Study: Concentrating on Diet More Effective Than Exercise for Weight Loss.” *Examiner.com*. Accessed March 22, 2013. <http://www.examiner.com/article/u-of-m-study-concentrating-on-diet-more-effective-than-exercise-for-weight-loss>.
- “Underage Drinking: Statistics.” *Century Council*. Accessed March 20, 2013. <http://www.centurycouncil.org/underage-drinking/underage-drinking-statistics>.
- “USDA Economic Research Service - AIB750.” Accessed March 30, 2013. <http://www.ers.usda.gov/publications/aib-agricultural-information-bulletin/aib750.aspx#.UVcoPavwKb8>.
- Velleman, J. David. “A Right of Self-Termination?” *Ethics* 109, no. 3 (April 1999): 606–628. doi:10.1086/233924.
- Veugelers, Paul J., and Angela L. Fitzgerald. “Effectiveness of School Programs in Preventing Childhood Obesity: A Multilevel Comparison.” *American Journal of Public Health* 95, no. 3 (March 2005): 432–435. doi:10.2105/AJPH.2004.045898.
- Wadden, Thomas A., and Suzanne Phelan. “Assessment of Quality of Life in Obese Individuals.” *Obesity Research* 10, no. Suppl 1 (November 2002): 50–57.
- Wagenaar, Alexander C. “Alcohol Policies in the United States: Highlights from the 50 States.” University of Minnesota, Alcohol Epidemiological Program, School of Public Health, November 2000. http://www.impactteen.org/generalarea_PDFs/Alcohol%20Policies%20in%20the%20United%20States.PDF.
- Wagenaar, Alexander C., and Traci L. Toomey. “Effects of Minimum Drinking Age Laws: Review and Analyses of the Literature from 1960 to 2000.” *Journal of Studies on Alcohol and Drugs Sup*, no. 14 (March 1, 2002): 206.
- Wald, Jonathan. “McDonald’s Obesity Suit Tossed.” *CNN Money*, February 17, 2003. <http://money.cnn.com/2003/01/22/news/companies/mcdonalds/>.
- Wallace-wells, Benjamin. “Cass Sunstein Wants to Nudge Us.” *The New York Times*, May 13, 2010, sec. Magazine. <http://www.nytimes.com/2010/05/16/magazine/16Sunstein-t.html>.

- “Wealthy Closing Obesity Gap.” *CBS News*. Accessed March 30, 2013. http://www.cbsnews.com/8301-500166_162-692614.html.
- “Weigh More, Pay More: Obesity Imposes Costs on Everyone.” *Pittsburgh Post-Gazette*. Accessed March 30, 2013. <http://www.post-gazette.com/stories/opinion/perspectives/weigh-more-pay-more-obesity-imposes-costs-on-everyone-517230/>.
- “What Doctors Don’t Know About Nutrition.” *Well*. Accessed May 2, 2013. <http://well.blogs.nytimes.com/2010/09/16/what-doctors-dont-know-about-nutrition/>.
- “What Is Slow Food?” Accessed May 1, 2013. <http://www.slowfoodusa.org>.
- “What the World Can Learn from Denmark’s Failed Fat Tax.” Accessed May 1, 2013. <http://www.washingtonpost.com/blogs/worldviews/wp/2012/11/11/what-the-world-can-learn-from-denmarks-failed-fat-tax/>.
- “What’s Wrong with Paternalism and The.” Accessed April 16, 2013. <http://www.psychologytoday.com/blog/maybe-its-just-me/201303/whats-wrong-paternalism-and-the-nanny-state>.
- “Where Do YOU Get YOUR Nutrition Information?” *RobinsBite*. Accessed March 22, 2013. <http://robinsbite.com/?p=44>.
- White, Mark D. “Banning Super-Sized Sodas? A Libertarian Inquiry into Paternalism in Economic Choice.” presented at the PPEL Speaker Series Lecture, University of Richmond. Accessed March 28, 2013. <http://ppel.richmond.edu/resources/11-12-speakers-series.html>.
- WHO. *Global Status Report on Alcohol and Health*. Epidemiology. Geneva, Switzerland: World Health Organization, 2011. http://www.who.int/substance_abuse/publications/global_alcohol_report/msbgsruprofiles.pdf.
- “Why That Salad Costs More Than a Big Mac.” *Reader’s Digest*. Accessed May 2, 2013. <http://www.rd.com/health/healthy-eating/why-that-salad-costs-more-than-a-big-mac/>.
- “Why We Mindlessly Eat Junk Food — and How to Stop.” *LiveScience.com*. Accessed May 1, 2013. <http://www.livescience.com/15925-eating-junk-food-tastes-bad.html>.
- Wilson, James. “Why It’s Time to Stop Worrying About Paternalism in Health Policy.” *Public Health Ethics* 4, no. 3 (November 1, 2011): 269–279. doi:10.1093/phe/phr028.
- Withrow, D., and D. A. Alter. “The Economic Burden of Obesity Worldwide: a Systematic Review of the Direct Costs of Obesity.” *Obesity Reviews* 12, no. 2 (February 2011): 131–141. doi:10.1111/j.1467-789X.2009.00712.x.
- Yaniv, Gideon, Odelia Rosin, and Yossef Tobol. “Junk-food, Home Cooking, Physical Activity and Obesity: The Effect of the Fat Tax and the Thin Subsidy.” *Journal of Public Economics* 93, no. 5–6 (June 2009): 823–830. doi:10.1016/j.jpubeco.2009.02.004.
- “Young Driver Licensing Systems in the U.S.” Insurance Institute For Highway Safety. Accessed March 5, 2013. <http://www.iihs.org/laws/graduatedlicenseintro.aspx>.
- Young Drivers: The Road to Safety*. Organization for Economic Co-Operation and Development, October 2006. <http://www.internationaltransportforum.org/jtrc/safety/YDpolicyBrief.pdf>.
- Zeller, Meg H, Jennifer Reiter-Purtill, and Christina Ramey. “Negative Peer Perceptions of Obese Children in the Classroom Environment.” *Obesity (Silver Spring, Md.)* 16, no. 4 (April 2008): 755–762. doi:10.1038/oby.2008.4.