The Analysis of the Effectiveness of Particular Strategies of the Obesity Campaign

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Currently in American society, globalization, modernization, and convenience have come to greatly influence the lives of individuals both positively and negatively. Although a significant portion of the population enjoys a seemingly enhanced quality of life due to these conveniences, it has also enabled negative externalities such as obesity to become increasingly prevalent. Since the mid-twentieth century, obesity rates have burgeoned at an alarming rate. This is problematic for society because obesity creates long-lasting, deleterious health effects. Currently, the lack of a food-culture in the United States has only cultivated the growth of obesity rates. With its colonial roots, the melting-pot mentality of the United States has encouraged assimilation and by extension, the gradual loss of individual cultural knowledge. In this way, no monolithic American food culture has been established leaving consumers to wonder what, when, where, how, and how much to eat. Where several societies rely on cultural heritage for these answers, the American consumer is provided an overwhelming plethora of governmental food pyramids, fad diets, and advertising schemes for guidance in making these decisions. At the heart of these government-issued food pyramids, dietary fads, and advertising schemes lies one paramount driving force: capitalism. As capitalism was an integral part in the conception of America, it is perpetually engrained in today's societal actions. American politics often correlate to the profit motive of business as instigated by the revolving door: a practice in which individuals hold interchangeable positions between governmental offices and significant

corporate positions. Therefore, governmental-food pyramids, fad diets, and advertising schemes are regularly profit driven while health is considered only as an afterthought. Various corporations, attempting to find a new source of profitability, tap into the 'health-food' market which targets affluent individuals who can afford healthy food—which inevitably costs more. Individuals of lower socio-economic status often cannot access or afford these healthier foods and become part of a food desert: an area in which healthy, affordable food is not accessible. This explains the trend of higher obesity rates in areas of lower socio-economic status—and of these individuals, children are frequently the most vulnerable. Although efforts to limit obesity are widespread throughout the demographic spectrum, because children are particularly vulnerable, it is evident the strongest effort to combat obesity centralizes on children. Because of the absorbent nature of the adolescent mind—children retain habitual actions through development—it is more applicable to instill these proper healthy habits in children. These habits, therefore, are less likely to be ephemeral—often the case in adults—and more likely to be sustained throughout the entire life of the child. The practices currently being implemented by those groups, programs, or policies fighting to quell obesity are worth examining in their whole because the success or failure of these efforts will and do directly affect the health and well-being of the general public. Given the effectiveness, or lack thereof, of this colossal campaign, alteration of specific strategies may imperative to the accomplishment of this common goal.

The task of overcoming obesity is monumental at best and requires much dedication and diligence. As a result, numerous strategies have been developed to lower obesity levels; however, the majority of these strategies fall into two categories based upon who is leading the effort: the government or public figures. Specifically, programs developed by the Center for Disease Control and Prevention (CDC) and legislature are the most commonly utilized tools by

the government to alter obesity in America. Public figures, on the other hand, include individual advocates as well as larger organizations that initiate independent campaigns to fight the disease. Although the government and public figures are at the forefront of the obesity campaign, there are several other strategies worth mentioning that function on a smaller scale and yet are integral to the overall effort to combat obesity. These strategies include community-based efforts and district-wide education. At a cursory glance, the CDC appears to be the most prominent proponent in the campaign against obesity.

As one of the most influential government agencies dedicated to the health of the American public, the Center for Disease Control and Prevention (CDC) is very much involved in the control and prevention of obesity. To combat obesity, the CDC is parent to many programs dedicated to the very cause. Each of the programs can be categorized into one of three heading programs. These programs include the Childhood Obesity Demonstration Project, Communities Putting Prevention to Work (CPPW), and Community Transformation Grants (CTG) (Bunnell et al.). Each of these programs is a particular strategy that the CDC, a governmental entity, is using in the hopes of decreasing obesity levels in America.

One of the programs used by CDC to lower obesity levels is the Childhood Obesity Demonstration Project. According to the informational page on the CDC's website, the Childhood Obesity Demonstration Project is currently ongoing—expected to conclude in September of 2015. Upon its conclusion it will be evaluated and if deemed a successful strategy, adapted to become even more effective. The Childhood Obesity Demonstration Project focuses on children who fall between the ages of two and twelve and who receive economical health insurance provided by the Children's Health Insurance Program. These children are from low-income households such that these individuals are less likely to have easy access to healthy food

and nutritional education. Some of the methods that will be implemented by this particular program will include alterations in preventative care as it would be administered during an appointment, as well as intervention at whichever place of learning corresponds with the children concerned. In doing so, preventative measures will be taken into account to decrease the likelihood of obesity in the future of children. This also includes any other facility designated with the responsibility to care for children, and even grocery stores (Center for Disease Control, "Childhood Obesity Demonstration Project"). These two strategies promote obesity prevention as opposed to treating obesity patients in hopes of bringing their weight to healthy levels. Because the Childhood Obesity Demonstration Project is ongoing and not yet evaluated, it is currently impossible to determine its effectiveness of a strategy.

Another particular strategy used to lower obesity rates implemented by the CDC is the Communities Putting Prevention to Work (CPPW) program. The CPPW program, much like the Childhood Obesity Demonstration Project is currently ongoing so evidence of its effectiveness is synthesized based how CPPW tactics are used. The CPPW program is fundamentally different than the other two obesity lowering programs headed by the CDC in that it does not solely focus on obesity. This particular program, rather, has two main goals: the first is to prevent the use of tobacco products and the lower the health risks associated with second hand smoke and the second is to prevent obesity as well as to lower the instances of obesity of all demographics. In the case of the CPPW program, the interventions in use by the CDC in relation to the fight against of obesity include making safe transportation within the community more of a possibility for pedestrians and cyclists, as well as those who utilize alternative modes of transportation. The tactic in this case is to create healthy and safe physical environments for the general population. Specifically, changes would include expanding access to public transportation, improving

sidewalks quality, and adding or enhancing night time lighting around public walkways (Center for Disease Control, "Communities Putting Prevention to Work"). Collectively, this creates a more easily accessible community that could encourage inhabitants to be more active, therefore improving their health. The general principle behind this is that small improvements in the quality of life of community members—such as improved walkways and transportation—makes a healthy lifestyle much easier. Operating under this same principle is the CDC program of community transformation grants.

Community Transformation Grants (CTGs) are quite possibly the most widely implemented strategy by the CDC and are thus the easiest to evaluate their effectiveness at lowering obesity rates. The CTG program is funded specifically by the Affordable care act and connects the CDC with forty communities, sixty-one state and local government agencies, territories, tribes, and not for profit organizations. In 20ll alone, Community Transformation grants were awarded in the amount of 103 million dollars. CTGs are awarded to a variety of different areas around the country in order to help lower obesity rates in each region. The CTG program was recently expanded in 2012 to include smaller neighborhoods, school districts, villages, towns, and cities in order to help achieve their goal of lowering the obesity rate in the United States. Overall, these programs will directly impact around 9.2 million people in America by providing sustainable strategies to improve upon a particular health goal (Center for Disease Control, "Community Transformation Grants (CTG)"). Although there are several Community Transformation Grants around the country, the one involving reducing sodium is exemplary and is indicative of how all the CTG's function to lower obesity. First, the Center for Disease Control and Prevention orchestrated a study on the effects of sodium on health thus making connections between sodium and obesity. Then individual communities used this new

information to write a grant proposal asking for CDC funds to put into effect a proposed plan that reduces sodium. Selected plans were approved and thus funded by the CDC which include the sodium reduction campaign of Shasta County.

To begin, a study was done by the CDC in 2007-2008. In this study, they determined sodium levels are a good indicator of the overall health of a particular food. For example, fast-food has the highest amount of sodium per Calorie, not to mention the highest caloric rates which even further compound the excess sodium levels. Also alarming is the fact that nearly 90% of Americans consume more than the recommended sodium levels indicating the majority of Americans eat an unhealthy diet. The last section of the report outlined the top sources of sodium. In their findings, the CDC listed the top ten foods for sodium content in order: breads/rolls, cold cuts/cured meats (ham, turkey, salami…), pizza, poultry, soups, sandwiches (including cheeseburgers), cheese, mixed pasta dishes, mixed meat dishes, and salty snacks (pretzels, chips) (FIGURE 1). The CDC also concluded that an overall one-fourth reduction

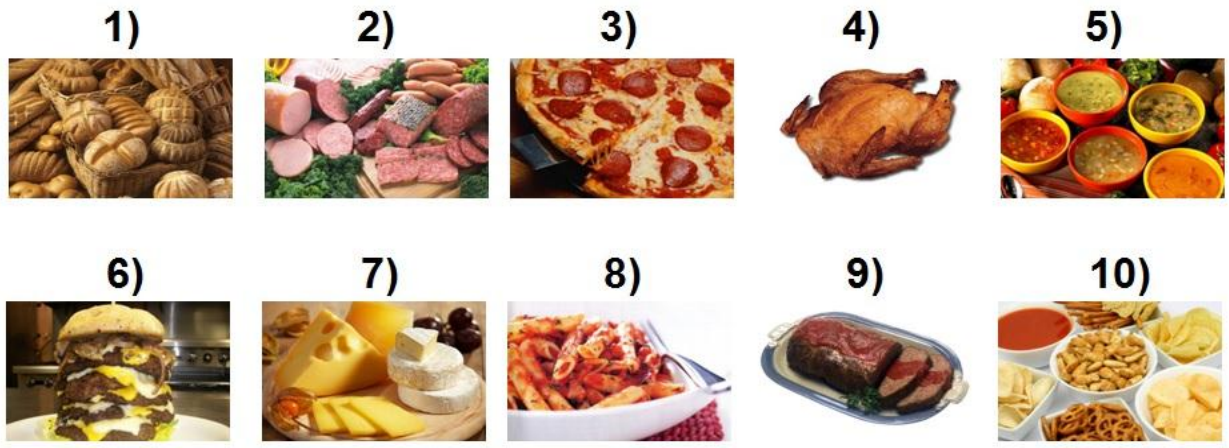


FIGURE1: Top 10 food and food groups based on sodium content. Comparing the variety of foods with high sodium content, it appears breads, cheese, and meat each contain significant sodium levels. This suggests that limiting calories ingested in each of these particular categories could decrease the likelihood of obesity of children and adults.

in the sodium content in these top ten sodium sources would prevent an estimated 28,000 deaths annually as well as save around $7 billion in health-care expenditures (Center for Disease Control, "Vital Signs: Food Categories Contributing the Most to Sodium Consumption - United States, 2007-2008"). Because of these astonishing findings on sodium, several different communities began to develop grant proposals to reduce sodium.

Although there are several different communities around the country who developed proposals to reduce sodium in their community, only a few were funded by the Center for Disease Control and Prevention. Out of these communities, Shasta County is a prime example of how the reducing sodium initiative is effective at lowering obesity. The CTG of Shasta Country had three primary tactics: work with school districts to develop and administer sodium reduction strategies for lunch menus as well as developing sodium standards in wellness policies of the schools, work with local governments to generate and administer sodium guidelines at governmental facilities that sell food, and lastly, work with independent restaurants to reduce sodium in menu items (Healthy Shasta, "Be Salt Savvy"). As for schools, the CTG was successful in reducing sodium in ninety-six schools by improving the lunch menus and establishing sodium-reduction as an essential amendment to the school's wellness policy. The CTG also covered governmental facilities where sodium guidelines were developed for libraries, post offices, courthouses, firehouses, polices stations, and municipal airports where food is sold. The most prominent way they were able to reduce sodium in local restaurants was the development of a toolkit administered to independent restaurants in the area. This toolkit, labeled 'Cut the Sodium but Keep the Flavor', incorporated statistical evidence from the CDC study and gave suggestions for the local restaurants. 'Cut the Sodium but Keep the Flavor' began by telling their audience that the salt shaker is not the blame of excess sodium ingestion.

FIGURE2: Comparison of sodium content different sources of green beans. Comparing the sources, it is evident that local and fresh green beans contain significantly less sodium than pre-packaged and canned green been which demonstrates how sodium content relies less on the salt shaker, and more on processing and packaging prior to reaching the plate

In fact, the majority of salt is added through processing and packaging previous to reaching the dinner table. Later, the booklet visually shows this difference of sodium content between fresh, packaged, and canned vegetables (FIGURE2). This demonstrates to the restaurant owner that choosing fresh and local ingredients would lead to the healthiest option possible by avoiding the added sodium of processing and packaging (Healthy Shasta, "Cut the Sodium but Keep the Flavor"). This demonstration can easily be seen as a way to develop a health-conscious community which is the overall goal of a Community Transformation Grant. Not only does this CTG reduce sodium in local restaurant menus, schools, and governmental facilities, it more importantly develops a community mentality focusing on fresh, local, and nutritious ingredients which ultimately leads to a sustainable, healthy community. The development of the community mentality has paid dividends in lower obesity levels. Obesity levels have steadily increased since the 1990's reaching 28.1% in 2009 (FindTheBest, Inc.). After this initiative was funded in

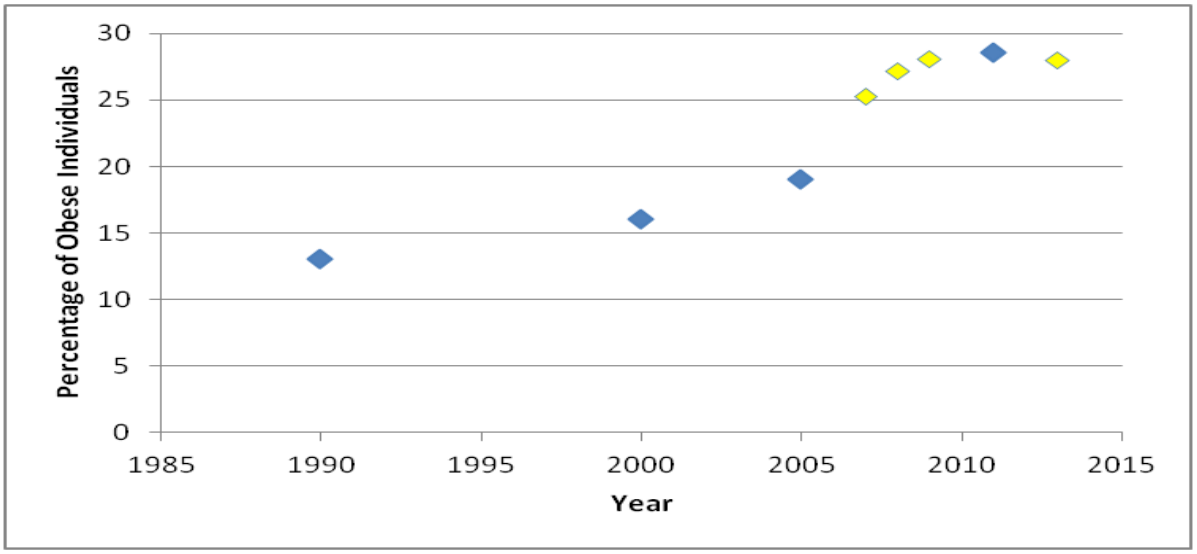


FIGURE3: Change in obesity levels in Shasta County since 1985. Since the implementation of the reducing sodium initiative in 2008, the obesity levels have actually declined by 0.1%

2008, the current obesity rate has declined to 28% in 2013 (County Health Rankings). A 0.1% decrease might not seem like much, but upon analyzing the trend of obesity levels since the 1990's, it is evident this is a significant feat (FIGURE3). It is evident that CTGs, such as reducing sodium in Shasta County, are effective strategies to reduce obesity levels.

Of all the governmental strategies implemented to tackle the rising problem of obesity in the United States, the CDC is definitely at the forefront with its ambitious and innovative programs. These three umbrella platforms port forth by the CDC—Childhood Obesity Demonstration Project, Communities Putting Prevention to Work (CPPW), and Community Transformation Grants (CTG)—are intricate and supplement one another. A prerogative such as the CDC's is a momentous one, and is to be applauded; however, much of its effectiveness is of course to be questioned, as it very well should be, because the evaluation process is currently ongoing. In this way, it is more appropriate to examine, where applicable, the exact nature of the essence of these interventions the CDC implements in the communities with which it has

tethered itself. Collectively, the essence of these programs focuses on education the youth, improving community quality of life, and developing a health-conscious community mentality. CTGs, however, have been evaluated and have been proven to be successful in lowering obesity as indicated by the reducing sodium initiative. Overall the Center for Disease Control and Prevention appears to utilize very effective strategies to combat obesity.

As the government has the most significant influence on the framework of the United States, there clearly should be other attempts to lower obesity levels by the government other than those put forth by the CDC. After all, the government should theoretically promote the wellbeing of its citizen. The government attempts to do this by developing legislation on local and federal levels to combat obesity. These laws force citizens to make changes regardless of individual desires; however, instead they put the desires of the community first and make certain concepts mandatory in order to lower obesity. With that being said, there is somewhat of an unspoken compromise between the government and its citizens to allocate individual freedoms yet also promote good health. Regulations such as banning toys from kids meals, a new bill to ban trans fats, and laws attempting to decrease sugary drink consumption of adolescents are prime examples of how governmental legislation attempts to lower obesity rates.

To begin, new legislation has been passed to ban kid's meal toys in specific areas of California. The concept behind this new legislation is that children are particularly susceptible to advertising. Cartoon characters seen on a daily basis are incorporated in advertising schemes, and then reappear when children visit a fast-food restaurant. Of course these children recognize their favorite cartoon characters and are autonomically drawn to these types of advertisements. Unfortunately, these advertisements commonly promote high-calorie, non-nutritious foods. As a result, these advertisements make it extremely challenging for parents to pull their kids away

from unhealthy eating habits and actually teach them healthy eating habits. For example, children often want fast-food because they can receive a toy of their favorite character with their meal. Because of the grand effect of using known characters to entice children's opinion on a product, some local governments have attempted to ban toys from kids-meals.

In 2010, a county in California became the first in the nation to ban toys from fast-food children's meals that were high in calories, salt, fat, and sugar. Overall, their goal was to make their community healthier by eliminating toys from fast food restaurants—which would theoretically decrease the consumption of unhealthy foods by children (Illinois General Assembly). Current research indicates that this transition seems to be having a positive effect on health. Originally, it was believed that fast-food restaurants that comply with the ban would generate healthier options as healthy options that meet governmental standards would be allowed to sell these toys. In reality, the biggest change regards the way the fast-food chains advertise their foods. This is exemplified by a study performed by the Stanford University's Prevention Research Center. This particular study was of eight restaurants all from the same fast-food chain: four of which were in regions of Santa Clara County (inside the jurisdiction of the newly imposed ban) while the other four were outside the ban's jurisdiction. In the four months after the ban took effect, researchers found that the restaurants that had complied with the ban showed a significant improvement in consumer choice of healthy food alternatives, while those that were not required to comply with the ban showed minimal changes. It is interesting to note that the amount of healthy options did not increase in either of the two groups. Before the ban, only four percent of the children's meals met the standards for health quality and that number did not change throughout the course of the experiment. Ultimately, the study found that although the restaurants did not actually increase the number of healthy options available, customers were

choosing the already available healthy options (Otten et al.). This was due to a marked improvement in their efforts to promote healthier options and provide more information on nutritional content regarding food. As this example illustrates, governmental regulation on a small scale can be an effective tool to combat obesity. Larger scale regulations might not have the same effect because different communities have different health goals and it is more pertinent to implement different regulations based upon current community dynamics. Where one community might benefit from the banning of toys from kids meals, another community may see no change. Although governmental regulation appears to be more successful on a local level, there are some cases where federal legislation may be effective.

One example of federal legislation mandated to help lower obesity is the new bill to ban trans fats. Trans fats are known to be a major cause of obesity in the United States as they are the most unhealthy form of fat—both unsaturated and saturated fats are healthier. Limiting society's consumption of trans fats would potentially lower obesity levels. The benefit of this approach, federal legislation to ban trans fats, is that there would be no burden placed on the consumer as every trans fat product would automatically become healthier. Any food that would otherwise contain trans fats would incorporate the healthier fats so the diet of the consumer is enhanced despite the choice in product. To begin, several laws limiting the use of trans fats have been in place for a few years. Specifically, an old law requires ever food facility to maintain the manufacturer's documentation for any food or food additive that has any fat, oil, or shortening for as long as it is stored, distributed, or served by the food facility or used in the preparation of food within the food facility. On July 1st, 2011, an additional law was passed that banned the use of oil, shortening, or margarine containing trans fat for use in spreads of frying, except for the deep frying of yeast dough or cake batter. In order to enforce this law, the Department of

Public Health was appointed to administer and enforce the act (Countrywide Services Agency). There are some areas that currently have banned trans fats completely. For example, New York City banned trans fats in 2006 and Philadelphia was soon to follow (Joseph). It seems as though there is only matter of time before the ban reaches the federal level. Interestingly there isn't any current evidence that federally mandated regulations are effective in lowering obesity levels. It appears that it is much less efficient to hold every community to the same standards where as local governmental regulations seem more effective. The only exception to this would be federal legislature to improve the health of food items without changing their marketability. An outright ban on trans fats would be an example of this and could potentially be effective because every food of that category in the market would be healthier. This wouldn't change what or how much consumers ate, but it would decrease the consumption of calories in general which would decrease the likelihood of obesity. Closely connected to the governmental regulation of trans fats is the regulation of sugary drink consumption.

Another particular strategy utilized by the government is to introduce legislation that reduces sugary drink consumption in schools. To begin, a wide variety of research has been put forth indicating increasing sugary drink consumption to be correlated to increasing obesity levels. Studies show that today's generation in America consumes three hundred more calories a day than they did a generation ago and that soda accounts for nearly half of those calories. Of course, an increase in calories means the body will convert excess sugars into fat for long-term storage which contributes to obesity. Today, nearly eleven percent of children's caloric intake is from sugary drinks. As a result, it is possible that nearly one-fifth of the total weight gain the average American has experienced in the previous thirty years could be attributed direct consumption of sugary drinks (William Mitchell College of Law). Also staggering is that in the

past 15 years or so the calories ingested from sugary drinks by children has increased from 130 to 209 calories a day and this incredible increase is a total of 60%. To compound the increase in calories consumed, the percentage of children consuming sugary drinks daily in the same time span also increased from 79% to 91% (Harvard School of Public Health). The combination of an increased majority of children consuming an increased amount of calories is a lethal. In fact, by just drinking one extra 20 oz soda a week—an extra 220-300 calories—could add an astounding 5 lbs. a year (Agricultural Research Service). Children who consume one sugary beverage a day can easily gain near 30 lbs. a year if they do not compensate for the added calories by performing extra physical activity. The current research on sugary drink consumption has connected the dots between their consumption and childhood obesity. Because of the plethora of information regarding the poor health quality of sugary drinks, it stands to reason the government would begin attempts to limit sugary drink consumption via legislation.

With the current information on the link between sugary drink consumption and childhood obesity, many local governments, which control school districts, are forcing bans on the selling of sugary drinks in schools. The extent of these bans is significantly less than one would expect and unfortunately, currently there isn't much evidence that this strategy is effective in lowering obesity levels. Interestingly, there is no national federal policy in regards to decreasing sugary drink consumption. Upon a deeper analysis, this makes perfect sense as the government has to balance the equilibrium between the freedom of choice exercised by consumers and the limiting of freedoms for the betterment of society—i.e. lowering obesity rates by limiting the consumption of sugary drinks. Should there be a national policy in the future, soda companies are already developing alternative strategies to continue having their products in the school market. These companies are now offering alternative beverages that non-critical,

health-conscious consumers will buy in the hopes of drinking a healthier alternative. Unfortunately, these alternative drinks are in reality just as unhealthy as their infamous counterparts. For example, one soda company, Coke, announced that they were no longer going to advertise carbonated drinks in elementary schools in 2003. Of course, parents did not appreciate the idea that their children would be introduced to soda at such a young age so Coke decided to back out of elementary schools—or so they thought. Instead of leaving the elementary school market completely, Coke developed Swerve: a carbonated beverage mostly composed of skim milk (7xPub). Schools purchased this 'fun' product to be a healthy, but different, source of milk. Unfortunately, this product still contained calories to an appreciable level to that of other coke products. Fortunately, Swerve was short lived as it was not particularly popular with the kids so it was quickly discontinued (Russell). It appears as if it is difficult to get sugary drinks out of the market and as such, it is complicated to evaluate governmental regulations that would do such. This being said, a study by Harvard shows that a few cent tax on sugary beverages could decrease sales by sixteen percent which would help to lower childhood obesity rates (Hellmich); however, a law raising taxes on soda will not pass easily. Future directions for governmental regulation of the selling of food products such as sugary drinks thus appears to quite doubtful, or complex and challenging at best.

It is evident that the government has a vested interest in lowering obesity levels in America; however, there are other entities that partake in this campaign. Public entities, which include celebrities and organizations, also participate in the fight against obesity. These individuals or groups use their notoriety to their advantage to gain support. Although these entities attempt to gain a nationwide following, their strategies are hybrid because they incorporate individual programs in specific communities on top of their national campaign.

There are several public entities that attempt to lower obesity; however, the "Let's Move!" campaign set forth by Michelle Obama—which includes adaptations such as the NFL Play60 and the NBA FIT—is exemplary of the strategies used by public entities.

First Lady Michelle Obama is a prolific advocate on reducing childhood obesity rates. In the past three decades, the childhood obesity rates have tripled so that a third of all children are obese. Because of these staggering childhood obesity rates, First Lady launched Let's Move! on February 9th, 2010. Let's Move! is a comprehensive initiative that focuses on limiting childhood obesity in hopes that the new generation will provide a healthier environment for the future. The First Lady's goal is to have childhood obesity rates down to five percent by 2030 (Let's Move, "Newsroom"). First Lady Michelle Obama involves herself as much as possible in each of her programs—from hosting recipe challenges to attending community basketball games. A specific example of a tactic that Michelle Obama uses is the visual representation of food groups called 'My Plate', which she uses educationally on both her website, and in programs. My Plate reminds children of a healthy diet by portioning the various foods on the plate. It also explains how variance and diversity of food options are important for a healthy meal. Overall, My Plate aims to educate children and parents on how to develop a healthy diet (Let's Move, "Eat Healthy"). Let's Move is also working with individual communities and schools encourage both children and adults to increase physical activity. One way Michelle Obama goes about encouraging physical activity is teaming up with the NFL and the NBA in their health programs.

In 2007, the National Football League (NFL) launched the Play 60 program. This program focuses on national youth health and fitness based on increasing the activity and overall wellness of young fans by encouraging them participate in 60 minutes of activity a day (Tan and Dalakas). After being an independent program for about three and a half years, on September

8th, 2010, Michelle Obama and Roger Goodell, the NFL Commissioner, announced they would join together to fight childhood obesity. This new and improved Play 60 campaign hosts community events such as flag football with children of the community and actual professional NFL players. The campaign also provides children chances to win meet and greets with their favorite football players or even super bowl tickets. The third section of their campaign is to educate children on the importance of good nutrition and being physically active. Overall, the NFL has already invested over $200 billion in this program and allows people to get involved in not only playing, but also coaching, volunteering, or teaching the children (Office of the First Lady). Let's Move is also involved with the National Basketball Association (NBA). Just like the NFL, on April 21, 2011, it was announced that the NBA/WNBA would partner with the Let's Move campaign to fight against childhood obesity. The tactics used by NBA FIT is essentially the same as the NFL. The extent of NBA/WNBA Fit is not as large as the NFL PLAY 60 but still incorporates 250,000 with over 350 programs that are offered year round. One difference in the NBA's campaign is that Michelle Obama uses her love for the game of basketball and is directly involved in NBA FIT programs (National Basketball Association). All together, the Lets Move! campaign and the associated PLAY60 and NBA FIT programs use both national and local tactics in order to lower obesity. In both cases, research has not been done to evaluate if it makes a difference in obesity levels of its participants. Instead, the analysis of its effectiveness relies on the examination of its principles. Based on what we have learned from other areas, we believe this program to be effective because it engages the community and raises the overall quality of life. Both of these factors appear to be extremely influential in the ability of the community to lower obesity levels.

Although governmental and public entities use a variety of national and local efforts to lower obesity, community-based efforts are also essential to the fight against obesity. Community-based efforts are those that primarily focus on each individual population, district, or neighborhood. These efforts are downsized and focus more on what each community's weaknesses are and try to find solutions to decrease obesity rates, mainly in children. In certain areas, obesity rates are more or less prevalent depending on location and access to healthy foods and nutrition education. Overall, the goal of community based efforts is to consider a particular health goal and develop particular programs and strategies that they can implement to achieve the health goal. This means Community based efforts are adapted to each particular community and have the potential to be extremely effective. In regards to each community, many communities choose to organize obesity campaigns both inside and outside legislation.

Community-based efforts that incorporate legislation are fundamentally different than other governmental legislation. These programs are more focused on specific communities as opposed to widespread changes. For example, although the Child Nutrition and WIC Reauthorization Act of 2004, encompasses every school district that participates in the National School Lunch Program, its effects are different for each community. This law mandates that parents, teachers, and administrators collaborate to develop a school specific wellness policy that addresses healthy lifestyles and encourages children to participate in daily physical activity. This act has some flexibility and allows every school district to tailor their wellness plan to the needs of their specific community. The schools that fall under this legislation participate in the National School Lunch Program. This program is designed to provide inexpensive—in some cases free—and nutritionally focused food for children on school days. Originally, the National School Lunch Program Act was signed by President Harry Truman in 1946 thus the program has

had a long history with years of development, assessing, testing, and continuous research. This rich history has allowed the program to supply children with the best nutrition quality of food, nutrition education, and accessible food transportation and expense (Brescoll, Kersh, and Brownell). Clearly there have been improvements—for example, a good portion of schools today participate in the National School Lunch Program—which verifies that this program is in fact expanding through schools across America. With that being said, The National School Lunch Program is not expanding quite as quickly as coordinators and administrators had hoped, but there is minimal improvement. This tactic seems to be working, slowly but surely, as the concepts of childhood obesity and increased obesity rates are being brought more and more into the spotlight across the world.

Not all community-based efforts involve legislation. For example, the Robert Wood Johnson Foundation of 2006 focuses on the health care issues that our country is currently facing such as obesity. The Robert Wood Johnson Foundation is the nation's largest charity that is dedicated exclusively to the population's health and health care. It works with a large variety of organizations and individuals to try to discover and identify solutions for these specific health crises. Overall, it functions by providing funds to communities in order to reach health goals. In online interview, Risa Lavizzo-Mourey, MD, president of the Robert Wood Johnson Foundation, stresses that the goal of her organization is to encourage wellness worldwide. Although she states that society as a whole needs to change the way we view wellness, she also suggests that it is a process that takes time and efforts from surrounding communities in order for it to begin having meaning to it. Her basic principle is to think local to act global and this is exactly what the foundation tries to accomplish. By funding community-based efforts, they hope to make a macroscopic improvement in individual's health across the entire country and even world-wide.

Unfortunately, she also reveals that based upon current data, the Robert Wood Johnson Foundation is facing old barriers with this new generation. One interesting specific tactic that this foundation utilizes to reach the younger generation is social networking. They acknowledge that social media greatly influences America's outlook on heath and has the potential to push its citizens for more power over their health as individuals and groups. Through the Robert Wood Johnson Foundation, dozens of organizations have made pledges to diminish the health inequalities in their cities. Mourey firmly believes that if this transition to healthier lifestyles is correctly executed, then the time will come when getting healthy and staying healthy will turn into a fundamental American value (Lavizzo-Mourey). This program was recently developed less than ten years ago and appears to be headed in the right direction. This tactic must be evaluated further in the upcoming years, but for now, it has high prospects based upon its strategy, funding community-based efforts.

The Robert Wood Johnson Foundation is not the only group that supports community-based efforts. Another example is, the Consortium to Lower Obesity in Chicago Children (CLOCC) which, again, aims to help reduce the increasing rates of obesity. This program brings together hundreds of academic, government, and organizations to approach childhood obesity. In addition, this program also provides technical assistance for communities by allocating seed money quarterly to help local organizations secure funds from outside funding entities. The CLOCC is fundamentally different than the Robert Wood Johnson Foundation because it has a higher emphasis on children in these communities. Currently, the CLOCC is committed to six areas of Chicago by providing beneficial implementation grants to the communities and school systems. Just liked the Community Transformation Grants by the CDC, the CLOCC has an emphasis on improving the overall quality of life in a community. Specifically the CLOCC tries

to limit urban sprawl which significantly limits the amount of area available to community members. To do this, the CLOCC plans the construction of parks, nature preserves, sports complexes, and museums in order to promote physical activity in the community. Of course these attractions are meaningless if they are inaccessible. In response, the CLOCC also provides better quality sidewalks and roads making these beneficial areas more readily available for communal use. To do this, one specific program head by the CLOCC, the Safe Routes to School (SR2S), promotes walking or riding a bike to school instead of driving. The SR2S program utilizes the improved sidewalks but also helps develop programs and projects related to bicycle/ pedestrian safety in hopes to increase the number of children who walk or ride their bikes to school. The little extra exercise of walking or biking to and school every day makes a huge difference in the course of a year (DeMattia and Lee Denney). This is a perfect example of the spiral effect on how small changes in improving the overall quality of a community can lead to healthier habits and decrease the likelihood of developing obesity.

Although the CLOCC is an important community based effort, it is however only limited to the Chicago community. Other programs use similar strategies to decrease obesity in their specific community. Although increasing spaces to engage in physical activity as done by the CLOCC, it is also essential that families have adequate opportunity to access healthy foods. This concept mainly focuses on grocery and convenience stores such that neighborhoods without healthy grocery stores have reduced access to healthy fruits and vegetables—fundamental bases for any healthful diet. For example, a recent study suggested that communities with access to supermarkets had lower prevalence of obesity while those with greater access to convenience stores had increased prevalence of obesity. Several higher authorities recognized this issue and Governor Ed Rendell of Pennsylvania launched a program to form public-private partnerships

that improve access to healthy foods within Pennsylvania. His program is ongoing and encourages supermarket development in low-income areas by awarding grants and loans exceeding $2 billion to those who are willing to invests in those areas in need (DeMattia and Lee Denney). Because of movements such as this, many communities are now trying to develop access to healthy grocery stores. There are also non-profit organizations like the Growing Power Incorporation (Milwaukie, WI), that develops community food systems throughout the nation. This incorporation supports people from diverse backgrounds and the environment in which they live by helping provide equal access to healthy, high quality, safe, and affordable food. Fortunately, there is currently an increase in the development of these community food systems that aim to contribute to this movement. There are also outreach programs that have helped 25+ urban gardens and are working with schools to bring kids back to the connection between land and food and recultiviated land (Dodson et al.). Community based efforts to increase access to healthy food, such as that being done in Pennsylvania as well as headed by the Growing Power Incorporation, clearly is a beneficial strategy to lower obesity rates.

The last major category of obesity campaign strategies is education. Education typically comes in two forms: nutritional/lifestyle education, and physical education. Specifically, one of the strategies that schools use to lower obesity levels is to incorporate specific programs in their curriculum that instruct young children the importance of nutrition and physical education as well as instill proper healthy habits. A perfect example of this is the development of workbooks such as ‘Just for Kids’. ‘Just for Kids’, which is designed for children ages six through twelve, was developed by Susan Johnson and Laurel Mellin in 2002. This workbook is conjoined with a five to ten week program based on class sessions either two or four days a week. Overall, the

program emphasizes the formation of effective habitual lifestyle changes that would prevent obesity in the future of these children.

The workbook, 'Just for Kids' educates young students in a variety of different ways. To begin, this workbook includes stories about cute, fluffy animals, Ralph Rabbit and Bonnie Bear, who through various encounters and adventures with their mentor, Leonard Lamb, learn various important aspects of health. Leonard Lamb stresses the idea that everyone needs to accept that individuals might be predisposed to different body styles due to their genetic history, but also everyone needs to become physically active and eat a healthy, not depriving diet. It is interesting to note that the workbook chooses to include the idea that a diet should not be depriving. This is important to the young audience who could tune out unwanted messages which could easily be the case if they were told to eat only the most healthful foods all the time. Instead, the message that Leonard Lamb gets across to Ralph Rabbit and Bonnie Bear, that healthful diets can and do occasionally incorporate 'unhealthy' food, is more easily accepted by the adolescent audience. Leonard Lamb also advises his adorable compadres to freely discuss their emotions, wants, and desires with others (Balboa Publishing Corporation). Through this, the workbook offers a wholistic approach to education so that the children develop an overall wellness on top of healthy habits. To track these wellness changes, 'Just for Kids' also includes a scorecard which outlines weekly goals assigning points to various different health aspects. Because of this, nutritional knowledge, physical activity, and habitual behavioral change can be recorded in forms, charts, and tables to track progress. As these goals incorporate knowledge and activity, the workbook stresses bringing what they do at school back home to maximize the effectiveness of its education both in and out of the classroom.

‘Just for Kids’ is also an extremely successful workbook due to its easy accessibility. The book is sold in bookstores and online, including famous sites such as Amazon, and for a relatively low price. School districts can place orders for the workbook and receive them for use the next semester. The affordability of the book also contributes to its success. For example, the workbook is sold for $12.00 a single book and can bought in bulk for $6.00 a book for orders of fifty books or more—which could be enough for an entire elementary school. Although this book is easily accessible, it is not necessarily a given that it will be used effectively. Fortunately, a teacher’s guide, which includes the curriculum, can also be purchased with the order of ‘Just for Kids’. Although it is important to have a teacher’s guide and curriculum, it is also important to know how to use the workbook properly. “Just for Kids’ developed a website for their book which includes extensions where teachers who purchased the book can access online training to more effectively deliver the workbooks materials to the children (Balboa Publishing Corporation). Overall, the affordability, easy distribution, and multitude of additional resources allow ‘Just for Kids’ to be optimally efficient in its educational endeavors.

Currently this workbook is being used throughout the United States and originally was used on a trial basis for an elementary school in San Francisco Unified School District. The outcomes in this trial run are well documented in a report done by Rodgers and her colleagues. Their goal was to assess the effectiveness of the workbook in order to determine its usefulness for wide distribution. The journal article Rodgers and her colleagues developed outlined a quasi-experiment, via pre-test/post-test, done on fourth graders who underwent the ‘Just for Kid’ program in the San Francisco Unified School District. In this article, Rodgers and her colleagues proved the effectiveness of the program by comparing scores of nutritional knowledge and physical activity. For example, students performed better on a multiple choice test concerning

nutritional information and health quality of food. That proves the program is effective in the classroom, but another section of the article outlines changes in physical activity and health values such as BMI, blood pressure, and body-fat percentage. According to the study, overall levels in both physical activity and health scores improved over the course of the 'Just for Kids' program indicating the students used educational information to implement better health habits at home (Rodgers et al.). After this successful trial run, the 'Just for Kids' workbook has now been incorporated into many elementary school curriculums around the country.

As the 'Just for Kids' workbook was first used in the San Francisco Unified School District, it is logical to analyze the changes in obesity levels in San Francisco County to assess the effectiveness of workbooks as a strategy. San Francisco for a while has been known as a fairly health-conscious community and its obesity levels have traditionally been lower than other counties. For example, the levels of obesity have increased slightly since the 1990s but have been around 17% for the past 10 years or so (FindTheBest, Inc.). In fact, in the last 3 years, there has been a slight 0.1% decrease in obesity (FIGURE4) (County Health Rankings). Part of

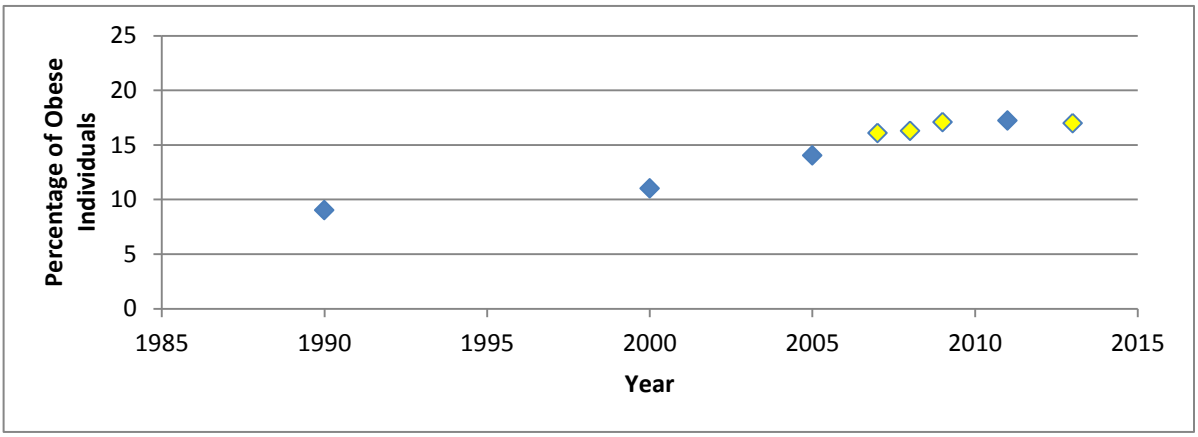


FIGURE4: Change in obesity levels in San Francisco County since 1985. Since the implementation the Just For Kids Obesity Prevention Workbook, the obesity levels have remained stagnant and have even slightly decreased by a total of 0.1% most recently

this decrease has been caused by the workbook being implemented in the community. The workbook might seem to be too small to make a significant difference in obesity; however the effect of the workbook has radiated from the classroom and out into the community. As a result of the workbook, parents, students, and teachers got involved to change the lunch menu at the local schools. They demanded changed because they believed the school lunch program should reflect what the students were learning in their workbook (Bedard). This exemplifies how small changes in education can radiate outward to make the community better. Just as in the example of the Community Transformation Grant to reduce sodium, developing a workbook to education youngsters on health and activity is an effective strategy because it makes individuals healthier while also establishing a community mentality that focuses on health and locality.

Another educational strategy to decrease childhood obesity is by changing physical education requirements. As of right now, not every state requires physical education. That means that not every child is getting the recommended amount of exercise. Illinois and Massachusetts are the only two states that currently require physical education every year K-12. Overall, the federal government has not been involved in physical education directly by administering nationwide regulations. In the absence of national regulations, local governments and school-districts are responsible for what physical education occurs at each school (Payne et al.). However, the federal government has set some recommendations for school-districts. For example, they recommend 150 minutes of PE per week for elementary school students and 225 minutes for high school students (Howze et al.). This would require students four to five session of physical education a week that lasts roughly thirty to forty five minutes each day. They also suggest allowing a little longer time period for the students to get ready before and after gym class to shower, change, etc. That way when the kids go back to class they are not all sweaty and

stinky from their PE class for the rest of the day and also get to spend more time actually doing the physical activity. One last recommendation the government has is to require physical education classes each semester for K-12 (Center for Disease Control, "Progress on Childhood Obesity"). As aforementioned, only Illinois and Massachusetts actually commit to this recommendation. In comparing the levels of childhood obesity, it is clear that states, such as Massachusetts and Illinois, who require more physical education have declining rates of obesity (Wood). It is apparent that there is much room to improve on physical education. Illinois and Massachusetts are success stories and many states could follow by taking the federal government's recommendations and putting them into action.

Upon analyzing all the different strategies used to combat obesity, it is apparent that community-based efforts either personally funded or through community transformation grants are the most effective efforts while governmental regulations—other than mandated physical education or obesity education—are not as effective. That isn't to say that all federal governmental legislatures are entirely ineffective. The ones that work best, however, incorporate the specific requests of each community. One exception to this idea would be governmental regulations that require alterations in the production of food without disrupting consumer habits. In this way, each food product within its own market would be held to higher health standards regardless of the particular company or producer. This leads to an overall healthier market for a particular product so consumers are healthier despite their choice. For example, the new bill to ban trans fats will not particularly change the fat content in food; however, the type of fat will be changed from trans fats—the most unhealthy fats—into healthier fats such as saturated or unsaturated fats. The way this will happen will not change consumer's opinions on products but will markedly lessen the health risks of any product that would otherwise be using trans fats.

Generally speaking, regulations such as this are not highly viewed upon because it restricts consumer choice which is a fundamental aspect of our country. Instead of federally mandated regulations, community and educationally based efforts have the prospects of being much more effective.

Community-based efforts are designed to generate small differences that eventually will proliferate into a country-wide movement to help lower obesity rates. These strategies are particularly effective because they are, in themselves, adapted specifically for each community in such a way that they are optimally beneficial based on the needs of each population in question. Community-based efforts appear to be the most influential tactics that are being executed in society today. These efforts are planned with a particular health goal in mind. Although these strategies aim to better one particular aspect of health, they promote the formation of a community mentality—think fresh, local, nutritious, diverse, and active—which not only betters the target aspect of health, but also radiates to improve other health areas. Overall, these changes cultivate a better quality of life for individuals in the community which makes it easier to make health-conscious decisions. Community changes do not happen overnight—as we have learned from many powerful, life changing historical events—but, these efforts are slowly making a difference and will in turn transfer from small-scale to large-scale efforts as more and more communities come together to tackle the issue of obesity.

One last way to improve upon the current obesity campaign is extremely specific. The last mentioned category, physical education, has a colossal correlation between its use and childhood obesity levels; therefore, there are specific steps that can be used to better physical education across the country. For one, all states should require some kind of physical education for grades K-12, and two teach these students from a young age the importance of exercise.

Both of these will allow the children to benefit in the long run as they get older because they develop lifestyle habits at such a young age. A second way to make physical education more beneficial is to lengthen the time of the physical education classes. Instead of having sort classes five days a week, lengthening the classes will allow more time to exercise, lift weights, or play games. Also, it could be wise to convert more exercises into games because if the kids are having fun, they won't even realize that they are working out. One last way to enhance physical education is to make the activity more vigorous and offer more choices. If activities are more difficult, it allows the children to burn excess calories in a lesser amount of time. In all, even if the child only gets exercise during gym class, it will benefit them more than if they do less in the class. In the long run, physical education can be linked to good lifestyle habits as adults which is precisely the aim of physical education. Taking these steps into account in each and every state, America could easily lower childhood obesity rates as well as overall obesity rates a few years into the future.

In conclusion, there are several current effective strategies that are being done to lower obesity in America. Community based strategies seem particularly effective and should be implemented more universally across the country. Governmental regulations can sometimes be beneficial, typically on a local scale. Some federal regulations, ones that would enhance health the health of particular food without changing consumer preferences, would also be beneficial as they make the consumer healthier regardless of choice in product. Educational strategies are effective but need to be implemented in each community in order for them to be as effective as possible. This is being supplemented by public entities, yet workbooks focusing on obesity must find their way into each and every elementary school across the nation. Lastly, the physical education programs of the United States are not up to par. Easy changes in these programs could

also significantly diminish the levels of childhood obesity. In America, without a stable food culture, we rely on alternative sources to become healthy individuals. Although we do not have a stable food culture, we can develop health-conscious communities that think local to act global, provide healthy alterative for food, and promote physical activity. The easiest way to do this is simply make the quality of life better for the denizen of the community. Of course, when the quality of life is better, it is much easier to make healthy choices. Therein lays the key to curing the obesity epidemic. If communities can come together and help eachother, a stable health culture that America can call their own will develop making obesity a thing of the past.

Other Important Aspects Related to Obesity

Foreign Countries: Scandinavia and Japan

The entirety of the research thus far has been focused on the battle the United States is fighting in terms of the rise of obesity. While the reasons for the rise of this problem are apparent, it is only fair to examine what is being done by those in areas where obesity is not so prevalent an issue as it is in America. Upon inquiry, it has been found that Japan and the Scandinavian region are among the longest living peoples and coincidently have the lowest obesity rates on the global stage (FIGURE 5). Both of these regions tend to have a lighter diet than those in America. For example, according to Livestrong.com, the Japanese diet typically consists of sea life, rice, vegetables, noodles, and soy. The Scandinavian diet is very similar.

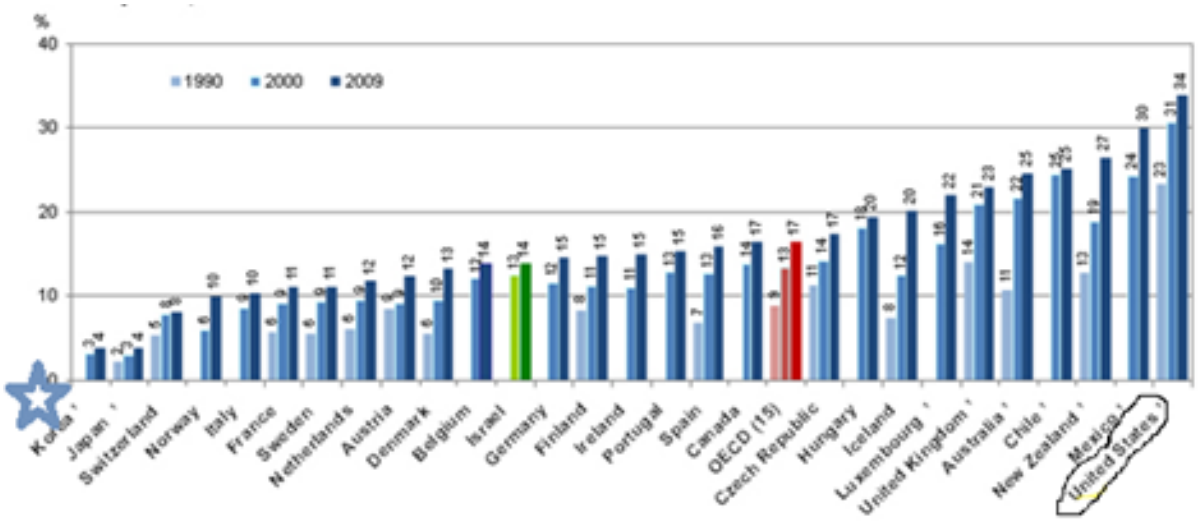


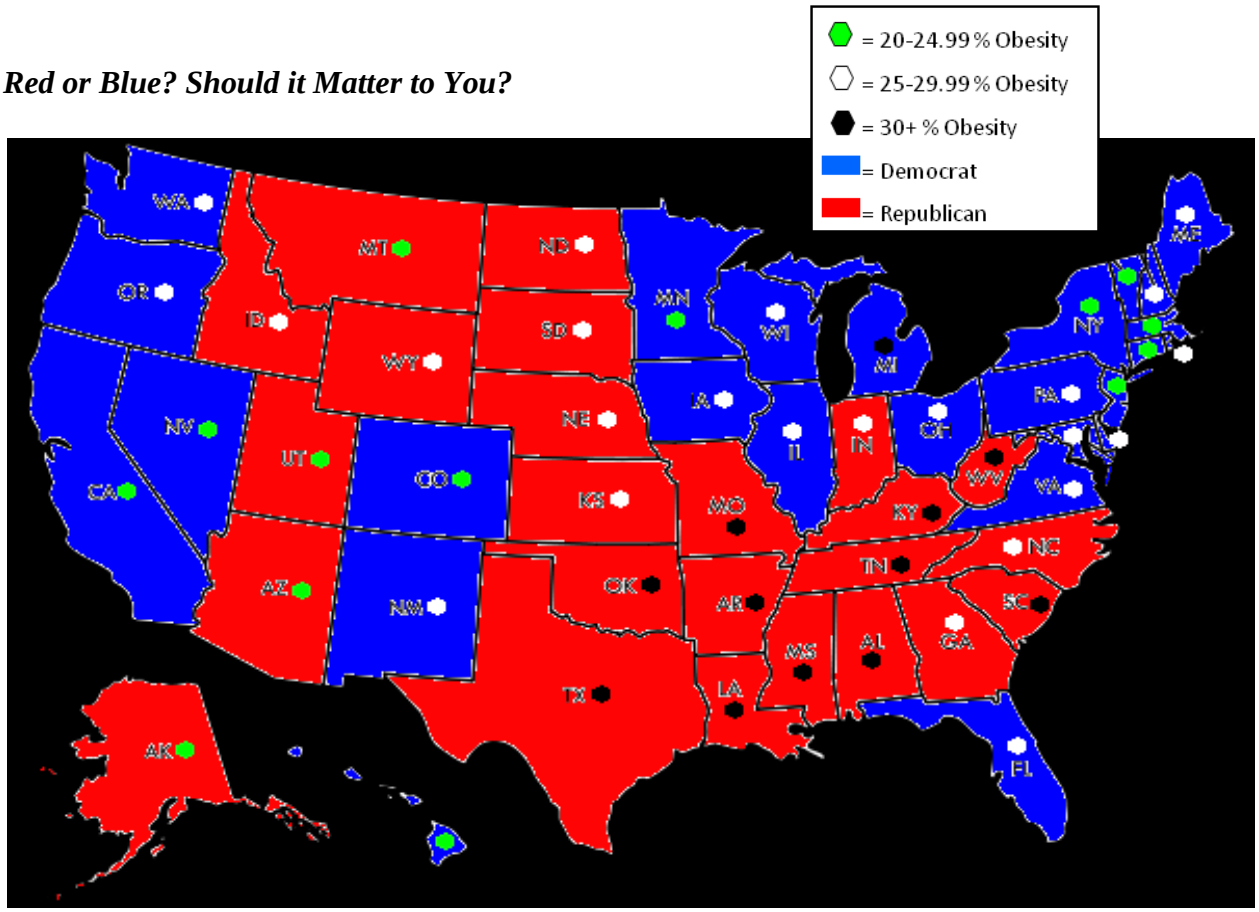
FIGURE 5. Obesity rates among the adult population in OECD countries, 1990, 2000 and 2009 (or nearest years). Upon analyzing the graph, it is apparent that the United States has significantly higher levels of obesity than other modernized countries. It is also important to see that Japan has extremely low levels of obesity, hence it analysis is important (OECD).

According to an article, the typical diet of the region contains rye bread, fish, vegetables, and like ham and chicken (Kovacs). The Japanese and the Scandinavian people also have a strong food culture that has been forming for centuries. The peoples of these regions view food in a different manner—there is both ritual and respect for the meal time. The following excerpt from *Nordic delights* exemplifies this idea:

> *"'There are many reasons why Scandinavians are not fat, and our diet is one of the main ones,' said Trina Hahnemann, 44, a Danish chef and author of The Scandinavian Cookbook, which depicts a lighter and modern version of traditional Nordic cuisine. 'Our food is simple and we tend to cook from scratch. There is not a big fast-food culture and no ready meals. We also tend to sit down with our families to eat our meals, an important point which shouldn't be underestimated. Good food culture is taught at home and there is no more important place than the dinner table,' she said"* (Backer).

This is testimony that speaks to a more wholesome view of food in the Scandinavian region. Japan is not much different . As well as the light diet of vegetables, rice, noodles, soy, and fish, the people of Japan eat with their eyes. The meals they consume are typically served in well decorated or crafted dishes that are also of varying sizes (Thomas). These smaller, beautiful dishes—besides helping people eat less in one setting—encourage the consumer to appreciate the food and savor the experience. This is indicative of a certain respect for the preparation, presentation, and the taste of the food. This in itself seems as if it would be a wholesome ritual at the dinner table—a far cry from the ever increasing fast paced food culture of America.

Red or Blue? Should it Matter to You?



The data displayed incorporates information from the following sources:

("2012 Presidential Election Electoral Vote Results")

(Center for Disease Control, "2010 CDC Obesity Data")

Data (which we have compiled in the image above) shows that there is a correlation between obesity levels and whatever dominate political views are found in each state. Republican states tend to have much higher obesity rates than that of blue states. A culmination of religiosity, social views, historical events, and even geography could explain this specific correlation, as all of these defining aspects of society are inexorably intertwined; however, this is a correlation, not causation. One further explanation we explored was the likelihood of using government money to develop community based efforts. Democratic states are more likely to

use governmental money to develop these kinds of projects. That being said, the most likely explanation is that the poorer states are more obese. As we indicated in our paper, the overall quality of life can aid or hurt the effort to decrease obesity levels. Overall, a lower quality of life makes it more difficult to make healthy decisions. As such, many poor states, which happen to be republican, are the same states that have the highest levels of obesity.

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