

Combating Childhood Obesity in California

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Research Proposal

For my senior project, I will be looking into the rise of childhood obesity in California. Obesity can be defined as when someone is so overweight that it effects their health and wellbeing which can lead to reduced life expectancy as well as increased health problems including a greater risk of Type II Diabetes. The United States has realized this has become a major concern and much attention has been paid on ways to confront this issue. Organizations, such as Let's Move and Fit For Learning, as well as laws and regulations have recently been implemented over the past couple years to increase awareness of childhood obesity.

In order to combat childhood obesity, a few things need to be implemented. Education of proper eating and exercise should be made part of regular curriculum in elementary schools. Hands-on learning is a great way to teach children where their food comes from which can be done by growing a garden on campus. By educating the students at a young age, they will have the knowledge to make wise choices on meals and physical fitness for their future. Physical fitness also needs to be integrated into children's lives so they can live healthy and long lives. In order to combat childhood obesity, both parents and teachers need to put time into the issue.

The sources I will use are recent articles in newspapers and journals, as well as looking at TV shows, commercials, and books related to childhood obesity in California. The First Lady, Michelle Obama, has her own organization called "Let's Move". This focuses on getting children to become more active, empower parents and teachers to be more involved in the child's well being, and teach children to become healthful eaters. Santa Clara County has their own organization to create ways for children to be

active called, *Fit For Learning*. The website contains tips and tricks for both parents as well as teachers. They also hold events in the community to create awareness of the recent increase of childhood obesity. I will look specifically at the recent laws and regulations that have been put in place to benefit the well being of children.

I am doing a pilot project to introduce young children to gardening with a hands on approach. The name of my project is KinderGrow. I will be working directly with Ms. Casellini, a kindergarten teacher to thirty students, at Laurelwood Elementary School located in Santa Clara, California. About half of her students come from low-income families. My attempt is to introduce the importance of healthy eating and nutrition habits to the students at a young age so they will have the power to make wise choices in the future. I have fundraised enough money, through donations, \$40.00, to start a small garden of a three large pots to sit outside of Ms. Casellini's classroom. The students will be introduced to various herbs, spices, fruits, and vegetables, while also learning the importance of tending to a plant and how much responsibility goes with growing the food we consume. The teacher will be able to use the garden in lesson plans such as science, math, and physical activity exercises. By working directly with the garden, the children will learn the importance of a healthy lifestyle.

Overall, I think this project is going to be very eye opening as well as educational. Organizations and laws passed are necessary to improve the health of the new generation. Prevention and knowledge of childhood obesity is needed to combat childhood obesity.

Annotated Bibliography

1. **Barnes, Melody. "Solving the Problem of Childhood Obesity Within a Generation," *White House Task Force*. May 2010. Report to President.**

The White House Task Force on Childhood Obesity, Report to the President, is a very useful document. It has recent statistics on children who are overweight and those who are not. The four main topics talked about in this article are empowering parents and caregivers, providing healthy school lunches, improving access to healthy and affordable food, and increasing physical activity. Also, there are given recommendations on how to prevent obesity as well as how to raise an active, healthy child. Many bar graphs and charts are included in this report.

2. **California Department of Public Health. "A Vision for Tomorrow, Strategic Actions for Today" *California Obesity Prevention Program*. <http://www.cdph.ca.gov/programs/COPP/Documents/COPP-ObesityPreventionPlan-2010.pdf>. 2010. Web.**

The California Obesity Prevention Program discusses the childhood obesity epidemic specifically regarding California. The article states the current state of California's weight gain. This website is helpful because it has recent statistics as well as information on laws and regulations passed recently in California.

3. **Casellini, Katy. Kindergarten Teacher at Laurelwood Elementary School. January 18, 2011. *Personal Interview*.**

I will be teaming up with Katy Casellini on setting up a garden in her kindergarten classroom. I have already raised \$40.00 to fund the garden and all of the accessories needed to grow a garden. I will work on a lesson plan involving the garden with her as well as conducting a personal interview with her on her experience and opinion on some of the questions I have for her about fighting obesity in the classroom.

4. **Community Alliance of Family Farmers. "Farm to School Program" www.cafarmtoschool.org 2011. Web.**

Farm to School is a grassroots initiative placing schools with local farms. Students are able to take field trips to the farms as well as having a farmer come into their classroom and teach them about gardening. Also, farms are able to provide produce to schools during lunchtime. This website provided information for my project when looking into what school systems are doing to enhance their cafeteria options.

5. **Department of Health and Human Services. "School Health Policies and Programs Study" *Centers for Disease Control and Prevention 2006***

The School Health Policies and Programs Study is a national survey periodically conducted to measure the health and fitness of students of the United States. The fact sheet provides information on what percentage of schools have fresh fruit and vegetables available to the students of public schools. This source will be used when discussing the school systems roll in the rise of obesity.

6. Fit For Learning. “Enabling Teachers to Integrate Nutrition Education and Physical Activity into their Classroom” www.fitforlearning.org 2011. Web.

Fit For Learning is a program devised by Santa Clara County Diocese. Teachers and parents can go to this website to get ideas to get their classroom and children active and health eaters. Each month is a different theme. For example, the month on gardening is helpful for my pilot project because it discusses ways to incorporate the garden into classroom learning.

7. Kaiser, Family Foundation. “The Role of Media in Obesity” <http://www.kff.org/entmedia/entmedia022404nr.cfm>. February 2004. Web.

The Kaiser Family article explains the dangers of children being seen as consumers to advertisers. By corporate businesses targeting children with processed foods, they are more intrigued to want their parents to buy those foods. Statistics are given on how many advertisements children typically see which will be good information for my research paper.

8. Koplan, Jeffrey et al. “Preventing Childhood Obesity. Health in the Balance” Committee on Prevention of Obesity in Children and Youth. *Institute of Medicine*. 2005.

This scholarly journal article gives examples on how to prevent obesity in every aspect of life. By targeting children at a young age means instilling lifelong healthy habits which is very important. The scholarly

9. Laurelwood Elementary School Official Website. *Cafeteria Information* <<http://le-scusd-ca.schoolloop.com/cafeteria>> November 7, 2010. Web.

Ms. Casellini teaches kindergarten at Laurelwood Elementary in the Santa Clara County School District. This website will be helpful with finding information about the school. The cafeteria menu is available to view on the site. All menu items are posted with the nutritional facts each time the menu changes. There is a link for parents to either pay there children’s lunch bill or apply for free or discounted lunches for their child.

10. Let’s Move. Salad Bars to Schools. www.saladbars2schools.org January 20, 2011. Web.

The movement, *Let’s Move*, has another initiative called *Salad Bars to Schools*. In my research paper, I discuss initiatives that have been brought to our country to prevent childhood obesity. This initiative is raising money and awareness for schools to have salad bars present. This is a great example of a grassroots initiative just like my pilot project, Kindergrow. I am able to compare my initiative to this one in my final paper.

11. McLean, Hilary. Schools Chief Jack O'Connell Releases Data on School Lunch Nutrition: Calls for Healthy Options for Students. California Department of Education 2004.

The California Department of Education released a study on California public school lunch nutrition. The article states the importance of a school lunch since sometimes it is the only healthy, well-balanced meal a child has. The superintendent enlisted a task force to examine school lunches more closely to reverse the childhood obesity epidemic. The findings of the cafeteria report will be used in my final paper.

12. National Cancer Institute. "Pie Chart on Sources of Added Sugars in the Diets of the U.S. Population Ages 2 Years and Older" <http://riskfactor.cancer.gov/diet/foodsources/added_sugars/table5a.html> February 10, 2011. Web.

The National Cancer Institute provided graphs and statistics that broke down what calories come from where in children. The graph that breaks down excess sugar content in children's diets will be used in my final paper.

13. Obama, Michelle. *Let's Move*. The White House. <<http://www.letsmove.gov/>> October 17, 2010. Web.

Let's Move, launched last February, is the organization started by the First Lady. There are tips for parents, elementary schools, and children on how to live a healthy and energetic lifestyle. She also discusses the obesity epidemic which our country's recent generation has seen.

This site will be very helpful with tips for children to live a more active lifestyle as well as adopt healthy eating habits to last with them throughout their lives. The website is always being updated with current and accurate information about the current state of the organization and the progress it has made. Also, on the website there is a section on school cafeterias. There is helpful questions I should ask when touring an elementary school's cafeteria.

14. Public Health Advocacy. "Sugar-Sweetened Beverages. Extra Sugar, Extra Calories, Extra Weight" November 2009.

The Public Health Advocacy has done much research on childhood obesity. The excess weight gain has been researched to what is the culprit of it. They found that extra sugar is the case, especially the intake of sugary beverages such as juice from concentrate and sodas. This is information that parents, caregivers, and teachers should be aware of so their child does not become a victim of childhood obesity.

15. Santa Clara Unified School District. *Student and Parent Information Handbook*. 2009-2010

This handbook states the regulations put in place by the Diocese of Santa Clara. There are two pages of nutrition rules and regulations for teachers and parents. Ms. Casellini discussed these rules in our interview so I thought it was necessary to obtain the source to look over it myself.

- 16. Santa Clara Unified School District. "School Nutrition and Fitness" <<http://www.schoolnutritionandfitness.com/index.php?sid=0905082102142048>> Web. October 20, 2010.**

This website was made by the city of Santa Clara, Nutrition Services. Their slogan is, "Support Learning by Promoting Healthy Habits for Lifelong Nutrition and Fitness." There are tips for parents, teachers, and students. Resources for the classroom and in the home environment are present. The Santa Clara's school wellness policy is located on this page. Parents are able to pay for their children's lunches in this site.

- 17. Smolak, Linda et al. "Body Image, Eating Disorders, and Obesity in Youth, Assesment, Prevention and Treatment" *American Psychological Association* 2009**

This book discusses the physical and mental health problems that are associated with being overweight or obese at a young age. The health consequences are very important to point out in my paper because of how life threatening and costly they can be. Dietary factors of increased weight gain are pointed out as well as cultural variations.

- 18. Turner, Sadao. "Jamie Oliver Aiming to Change how LA Eats, Opening Community Kitchen" *Ryan Seacrest Productions*. January 12, 2011.**

Jamie Oliver is a celebrity chef with his own television show where he goes into children's schools and changed the menu to add more healthy options. Jamie Oliver plays a big role in launching the media efforts to combat childhood obesity. By watching his initiative on televsion, it inspires people to want to make a difference at their own school and at home.

- 19. Wang, May et al. "Exposure to a Comprehensive School Intervention Increases Vegetable Consumption" *Journal of Adolescent Health* 74-82 2010.**

This peer-reviewed article examines a group of public school children in the US and how being introduced to cooking and gardening classes affects their vegetable consumption. The results will be good information for my own pilot project, Kindergrow.

- 20. Weintraub, Daniel. "Taking Away Toys to Help Fight Obesity" *The New York Times*. May 15, 2010**

The New York Times had an article on how California was the first state to ban toys being served to children at fast food restaurants. The article states what counties have passed this law as well as what other counties are trying to pass this law. This will be used in the media, advertising portion of my paper since children are targeted by advertising companies.

- 21. Wolch, Jennifer, et al. "Childhood Obesity and Proximity to Urban Parks and Recreational Resources: A Longitudinal Cohort Study" *Health and Place*. October 15, 2001. 207-214.**

The scholarly study investigates the correlation between proximity to parks to children's homes. The findings will be used in my paper. Depending on the economic status of the neighborhood played a role in the availability of open space for children to play or partake in structured recreational activities like ballet or softball.

Outline

I. Introduction

A. Study is focused on the status of childhood obesity in California. Prevention is the best way to solve this epidemic.

B. Looking at what movements are occurring currently in California and nationwide by the government and organizations. The youth of this country will one day lead the nation

1. The California Department of Public Health states one in every nine children are obese or overweight and that this epidemic is seen across all nationalities, sexes, and income According to the *Center of Disease Control*, obesity is when a child consumes more calories than he or she uses.

2. The Center for Disease Control defines overweight and obese, "Overweight is typically defined as between the 85th to 95th body mass index, BMI, percentile using the Center for Disease Control, CDC, growth charts. Obesity is defined as BMI at the 95th or higher" (CDC, 2010). Being an obese child can hinder learning and increase the risk of chronic diseases.

II. Rise of Childhood Obesity

A. Factors causing the rise of obesity

1. Sedentary lifestyle

a. Lack of exercise, snacking in front of the TV

b. Non-academic computer use

2. Corporate America

- a. Fast food consumption and advertisers targeting children with unhealthy food. Children seen as consumers
- b. Lack of fresh fruit and vegetables available in low-income neighborhoods. Fast food is more accessible than grocery stores in low-income areas

3. Excess calorie consumption

- a. Rise of soda, energy drink, and sugary juice consumption. This leads to excess weight
- b. Soda free summer campaign- in CA getting children to drink more milk and water rather than sugary drinks

III. Statistics on Childhood Obesity

1. US

- a. Compare and contrast both childhood obesity gender graphs from Center of Disease Control
- b. Female rates compared to male rates at different years
- c. Approximately two thirds of adults are obese or overweight in the United States. Recent statistics from 2009 state that 33% of US adults are overweight with a BMI of 25-29% and 34% of adults are obese with a BMI of 30% of greater (Khan et al., 2009).

2. California

- a. counties and their rates of childhood obesity
- b. ethnicities with highest rate of obesity

- c. Higher rates in low income areas. African American and Hispanic rates are high
- d. Overweight county disparities are seen in California. For example, in Imperial County, 73% of adults are overweight, whereas only 43% of San Francisco County adults are (CDPH, 2010). San Francisco has an impressive public transit system, which makes it easier for residents to get exercise by walking to and from BART or the bus stops. Within counties, residents of low-income neighborhoods have higher obesity rates (CDPH, 2010).

XI. Laws and Regulations in CA

- 1. CA lawmakers were the first to ban toys being given away at fast food restaurants as well as restaurants having to post the calorie amount on chain restaurant menus
- 2. Soda vending machines being banned in public schools
 - a. Healthy Beverages in Childcare Act
- 3. Implementing parks and walkways in towns

XII. Education System

- 1. Healthy cafeteria options
 - a. Schools should provide healthy options when children eat at school.
 - b. Cafeterias should not carry fried or processed foods. A salad bar is a great way for students to get their vegetables
 - c. 100% fruit juice, milk and water offered instead of sugary fruit beverages.

2. Grassroots initiatives

- a. Farm to School- Connects local farms to schools so children can learn about the growing process, vegetables, meet the farmers

3. Healthy living made part of curriculum

- a. integrating agriculture into the classroom
- b. learning about the food pyramid, unhealthy, and healthy food
- c. Making sure children get the recommended exercise throughout the day

XIII. Pilot Project

1. Kindergrow

- a. I have raised \$40.00, through family donations to start my pilot project called kindergrow.
- b. Herbs and vegetables will be grown in pots outside of the kindergarten classroom at Laurelwood Elementary
- c. The idea of this project is to introduce the kindergarteners at a young age to fresh herbs and vegetables. The students will learn by doing. Watering the plants daily teaches the students responsibility. The students will study science by watching the plants grow and regenerate. Students will be able to enjoy their hard work and labor when the garden produces food.

2. Location and Information on School

- a. Laurelwood Elementary School, Santa Clara County, CA
- b. She has 30 students and about half of them come from low-income households.

b. Ms. Casellini is the Kindergarten teacher who I have been working closely with on project planning along with lesson plans to incorporate the garden in science and healthy eating learning.

XIV. Conclusion

1. Prevention is the best way to solve the problem of childhood obesity
2. An active lifestyle should be the norm along with healthy eating habits
3. Healthy living should be made part of regular curriculum in schools

I. Abstract

Childhood obesity has become a major problem in America. Our youth's health is at risk, the statistics are alarming, and childhood obesity is largely preventable. In order to solve the childhood obesity epidemic, government action, both state and federal, needs to be taken by passing nutrition standard laws. Also, the built environment should support an active lifestyle rather than one based on fast food and lack of exercise. Families should adopt a healthy lifestyle including having adequate fruits and vegetables at home along with exercising daily.

II. Objective

This study is focused on the status of childhood obesity in California and why there has been an increase in obesity rates. Over the past twenty years prevention has been shown to be the best way to solve this epidemic. Here I provide an overview on the current movements in California as well as nationwide by the government and organizations. Also, I will discuss the launch of my grassroots organization, Kindergrow. The goal of Kindergrow is to bring the gardening process into the classroom so children will be able to see where herbs and vegetables come from. By students helping with the garden, they will learn math, science, and healthy eating habits.

III. Introduction

The youth of this country will one day lead the nation. But, as of right now, the *California Department of Public Health* states one in every nine children are obese or overweight and that childhood obesity is seen across all nationalities, sexes, and

income levels (CDPH, 2010). The cause of obesity is a mix of different variables rather than one single factor. Fast food consumption, portion size, decrease of physical activity, and lack of proper nutrition, are just a few reasons why obesity rates have risen in the United States. “Changes in children’s food environments over the past few decades have increased the availability, appeal, affordability and consumption of foods and beverages that are low in nutrients, but high in fat, sugar and calories” (Healthy Eating Research, 3). There are side effects associated with obesity including both short and long-term health problems and severe psychosocial consequences because the children are often stigmatized as a result of their weight (Smolak, Thompson, 2001). Many children's health are at risk and the current generation may even be on track to have a shorter lifespan than their parents (Barnes, 3). Parents play a very important role in the health of their child. They buy the groceries, cook the food, and decide when to eat.

According to the *Center of Disease Control*, obesity results when a child consumes more calories than he or she expends (CDC (1), 2010). The imbalance between calories consumed and expended can result from the influences and interactions of a number of factors, including genetic, behavioral, and environmental factors. It is the interactions among these factors, rather than a single factor, that causes obesity. When distinguishing between overweight and obese, one can look at Body Mass Index (BMI), which is a body fat measurement based on the weight and height of an individual (CDC (1), 2010). A healthy BMI is between 18.5 to 24.9 for an adult. *The Center for Disease Control* defines BMI percents for healthy, overweight and obese for children, “A healthy weight can be defined as 5th percentile to less than the

85th percentile. Overweight is typically defined as between the 85th to 95th BMI percentile using the Center for Disease Control, CDC, growth charts. Obesity is defined as BMI at the 95th percentile or higher” (CDC (1), 2010). The White House Task Force states,

“Determining what is a healthy weight for children is challenging, even with precise measures. BMI is often used as a screening tool, since a BMI in the overweight or obese range often, but not always, indicates that a child is at increased risk for health problems. A clinical assessment and other indicators must also be considered when evaluating a child’s overall health and development” (Barnes, 3).

IV. Health Risks

Major health risks are associated with having excess weight on a body. “Poor diet, inactivity, and obesity contribute to the risk of heart disease, Type II Diabetes, high blood pressure, stroke, arthritis-related disabilities, depression, sleep disorders, and some cancers” (CDPH, 2010). When a child is overweight, they are twice as likely to have Type II Diabetes, compared to a child who is not overweight (CDPH, 2010). Obesity is a life threatening disease that is estimated to cause 112,00 deaths per year in the United States. Overweight children are also targets of social discrimination and bullying amongst their peers (CDC (1), 2010). The youth should want to live a healthy and happy life so they can become strong adults and not increase their risks of health problems later in life.

V. Statistics on Obesity

A. The United States

The statistics on obesity in the United States are alarming. Approximately two thirds of adults are obese or overweight in the United States. Recent statistics from 2009 state that 33% of US adults are overweight with a BMI of 25-29% and 34% of adults are obese with a BMI of 30% of greater (Khan et al., 2009). From 1980 to 2008, the childhood obesity rate has tripled (Barnes, 2010). According to the Center of Disease Control, one in seven low-income preschoolers are obese in the United States.

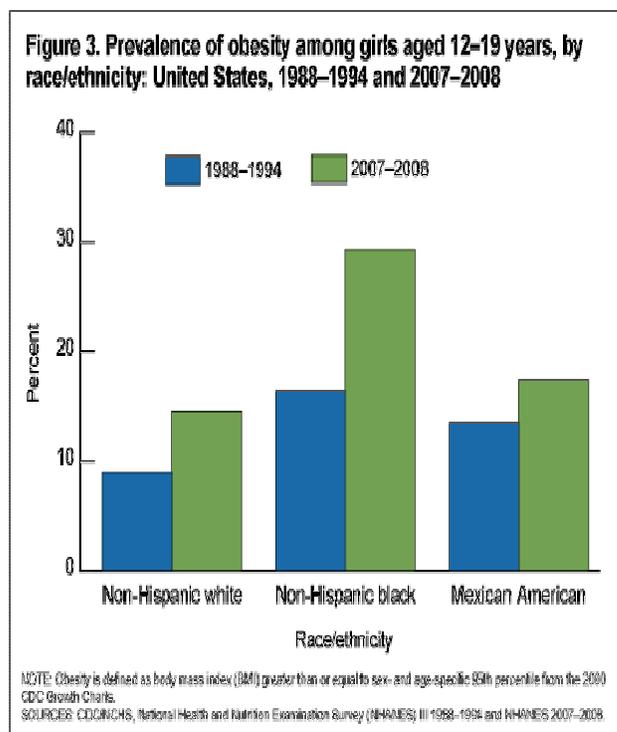
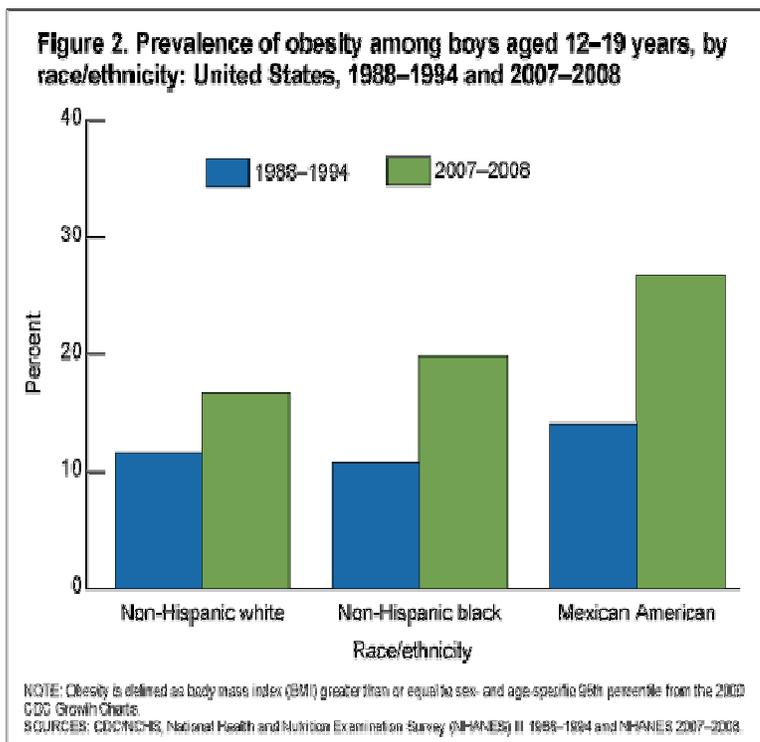


Figure 2 and 3: Graphs provided by The National Center for Health Statistics

Figure 2 and Figure 3, from the National Center for Health Statistics, show the rates of obesity from 1988-1994 compared to 2007-2008 in boys and girls in the United States ages 12 to 19 years old. The two graphs represent three ethnicities; Non Hispanic White, Non Hispanic Black, and Mexican American. The blue bars on both

figures represents years 1988-1994, while the green graph represents years 2007-2008. For boys, (Figure 2), the rates were about even in 1988-1994. But a change is seen when looking at the recent dates. In 2007-2008, Mexican American boys rate of obesity shot up to 30% in 2007-2008 from about 12% in 1988-1994, being the most obese ethnicity. For Figure 3, shows that non-Hispanic black girls had the highest rate of obesity in 1988-1994, as well as 2007-2008 (Ogden, Carroll, 2010). The 20th century saw a rise of inactivity and a high diet of processed food leading to poor health and weight gain. Childhood obesity involves both short and long term effects to ones health. For children born in the United States in 2000, the lifetime risk of being diagnosed with diabetes at some point in their lives is estimated at 30% for boys, and 40% for girls if obesity rates level off (Koplan et al., 2005). Lower income areas have problems with obesity due to the lack of healthy options available in their neighborhood, both parents in the workforce, and the high cost of healthy, fresh food such as whole grains, and vegetables (Sallis, Glanz, 2009).

B. California

Compared to the United States, California has fewer obese people. As of 2009, California had a total of 24.8% of obese adults (CDC (2), 2010). The rate will likely rise since children who are overweight will most likely become an obese adult (CDC (2), 2010). A study of California public school children published by *Health & Place* in 2009 found that poverty was significantly associated with children being overweight for California Assembly districts (Drewnowski, 2009). In California, Pacific Islanders have the highest rate of childhood obesity with 35.9% (Ogden, Carroll, 2010). By 2005, obesity among children in California has risen by 6.2% in three years (Vesely, 2005).

“The high cost of living is a likely factor statewide in the increase, as parents work harder and longer hours. People have less money to put into food so that means less quality food is being purchased and consumed by the family members” (Ballinger, 2005).

Overweight county disparities are seen in California. For example, in Imperial County, 73% of adults are overweight, whereas only 43% of San Francisco County adults are (CDPH, 2010). San Francisco has an impressive public transit system, which makes it easier for residents to get exercise by walking to and from BART or the bus stops. Within counties, residents of low-income neighborhoods have higher obesity rates (CDPH, 2010).

VI. Rise of Childhood Obesity

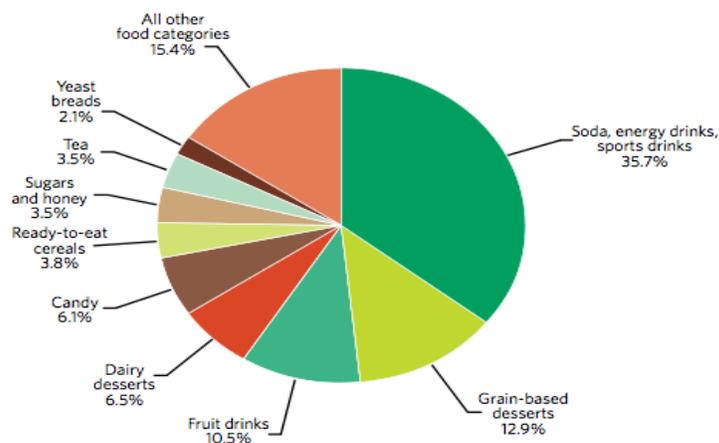
Over the past twenty years, children in the United States have lived a more sedentary lifestyle. With busy schedules, Americans now consume more fast-food and sugary beverages, eat outside the home more frequently, and spend less time enjoying family, home cooked meals (Barnes, 7). Children are spending more hours in front of the television rather than being active outside and are using the computer for nonacademic use. When children are watching TV, they are not being active and become influenced by unhealthy food product commercials while snacking excessively (Kaiser, 2). Also, many neighborhoods do not support walking or biking making it dangerous for children to walk or ride their bikes to school. As a result of increased sedentary activities and unhealthy eating habits, childhood obesity has risen.

Corporate America has added to the rise of obesity rates by advertising fast food restaurants and unhealthy, processed foods on children's television networks. This problem is especially seen in low-income areas where healthy food options are not accessible to poor families. "Today, many Californians live in neighborhoods with an abundance of cheap, low nutrient, high calorie food, but with limited access to affordable fresh fruit and vegetables. Fast food is high in sodium and saturated fat. Black neighborhoods may have 50% less access to chain grocery stores than white neighborhoods" (CDPH, 3). According to the California Department of Public Health (CDPH), lower calorie dense meals, which usually contain fruit or vegetables, cost 41% more than the high-energy dense meals which usually lacks nutritional value (CDPH, 3). Fast food is convenient and tempting for busy parents who do not have time to cook or are on a budget.

Fast food restaurants target children by playing commercials of their food on kid friendly television channels such as *Nickelodeon* and *Disney*. Children are seen as consumers to advertisers, which means fast food restaurants try to lure children in by offering them toys with their unhealthy children's meals such as french fries, soda, and a cheeseburger. For example, "McDonald's and Disney have an exclusive agreement under which Happy Meals include toys from top Disney Movies. In the past, happy meals have reportedly also included toys based on the Teletubbies TV Series, which is aimed at pre-verbal babies" (Kaiser, 6). Some researchers believe that TV ads may also contribute to children's misconceptions about the relative health benefits of certain foods. A review of literature found, "70% of six to eight year olds believed that fast foods were more nutritious than home cooked meals" (Kaiser, 5). The Public Health

Advocacy of California states, California, in 2005, had four times as many fast food restaurants and convenience stores as supermarkets and produce vendors (PHA (2), 2009). How close a family lives to a supermarket is associated with eating more fruits and vegetables and that how close a family lives to fast food restaurants is associated with consuming more higher-energy foods and a lower-quality diet (Sallis, 2006). Low-income and racial/ethnic minority communities usually have less access to supermarkets and a greater concentration of fast-food restaurants, and the quality of foods offered tends to be worse in these neighborhoods (Sallis, Glanz, 2009). Fast food is cheap, affordable and fast which makes it a staple for low-income areas and families. But childhood obesity isn't seen in just low socioeconomic statuses. Children are obese across all income levels, although a bit higher percentage is seen in low-income families (Ballinger, 2005). The government should not let companies advertise highly processed foods to children.

FIGURE 3-6. Sources of Added Sugars in the Diets of the U.S. Population Ages 2 Years and Older, NHANES 2005–2006^a



a. Data are drawn from analyses of usual dietary intake conducted by the National Cancer Institute. Foods and beverages consumed were divided into 97 categories and ranked according to added sugars contribution to the diet. "All other food categories" represents food categories that each contributes less than 2% of the total added sugar intake.

Source: National Cancer Institute. Sources of added sugars in the diets of the U.S. population ages 2 years and older, NHANES 2005–2006. Risk Factor Monitoring and Methods. Cancer Control and Population Sciences. http://riskfactor.cancer.gov/diet/foodsources/added_sugars/table5a.html. Accessed August 11, 2010.

Figure 1: Chart Reproduced from National Cancer Institute

Along with poor eating habits due to fast food consumption, poor drinking habits have also increased. In the above pie chart from the National Cancer Institute, sources of added sugars in US diets ages 2 and older are broken down. This study was done from 2005 to 2006 and 3,553 children ages 2 to 18 were studied. Soda, energy, and sports drinks had the highest percentage of added sugars at 35.7% (National Cancer Institute, 2010). "Scientific evidence consistently supports the conclusion that drinking soda and other sugar-sweetened beverages increases a person's risk of being overweight or obese. As a result, reducing the amount of sugar-sweetened beverages people drink is an important strategy to reverse the obesity epidemic in California and across the country" (PHA (1), 2009). According to the Public Health Advocacy, soda is the number one source of added sugar in the American diet. The average soda size has doubled in size from 6.5 ounces to 16.2 ounces (PHA (1), 2009). Milk costs about

two to three times as much as a sugar-sweetened beverage, at about 75 to 95 cents per quart, whereas a supermarket soda is often only 28 cents per quart (CDPH, 3). The Soda Free Summer Campaign of California challenges children to replace sugary sodas with water, nonfat or 1% milk, and a half-cup of 100% fruit juice. Forty-one percent of children, ages two to eleven years old, and 62% of adolescents, ages 12–17 years, in California drink at least one soda or other sugar-sweetened beverage every day (PHA (1), 2009). By simply removing soda from a child’s diet can lead to less empty calories contributing to excess weight gain.

VII. Strategies for Change

Physical activity is an essential component of a healthy lifestyle. In combination with healthy eating, it can help prevent a range of chronic diseases, including heart disease, cancer, and stroke, the three leading causes of death (CDC (1), 2010). Physical activity, such as riding a bike, walking, running, and dancing, helps control weight, builds lean muscle, reduces fat, promotes strong bone, muscle and joint development, and decreases the risk of obesity. Children need sixty minutes of active and vigorous play every day to grow up to a healthy weight (Kaiser, 2010). To increase physical activity, children need safe routes to walk and ride to school, parks, playgrounds and community centers where they can play after school and be active in sports, dance or fitness programs that are exciting and challenging to keep them engaged. Researchers have found a link between a child environment and rates of physical activity. Environments promote childhood obesity when they lack sidewalks,

have long distances to school, and unsafe crosswalks and busy intersections are present (Sallis, 2006).

Education of healthy eating and exercise habits should be made part of regular curriculum in elementary schools. Cooking classes should be integrated into lesson plans so students can learn lifelong tips to eat healthy. “Good nutrition plays an essential role in overall health. Healthy eating habits in childhood and adolescence are important for positive growth and development and can help children achieve and maintain a healthy weight” (Barnes, 23). Children who consume fruits and vegetables regularly are most likely to continue doing so in adulthood (Xie et al., 31). Regulations banning unhealthy food need to be in place in school cafeterias to make sure schools are offering healthy choices to students. Four public elementary schools in California were studied to see if integrating healthy activities such as gardening, cooking, and learning about nutrition would increase the amount of vegetables the students ate. The study found that the consumption of vegetables did increase, especially for leafy vegetables indicating that having a garden, cooking and healthy eating has a positive correlation with getting children to consume more vegetables (Wang et al., 2010). Teachers and staff need to be healthy eaters and active people to be role models to the students. A simple way for faculty to get exercise in the school environment is to walk during lunch breaks or hold a walking meeting with coworkers. There isn't an easy solution to this problem. Many items need to be adjusted and changed in order for children to live a healthier lifestyle.

VIII. Parent Solutions

Parents can play a vital role with promoting children to be active by planning play dates with friends, going on family walks or bike rides, or playing a sport with them outside. Children should enjoy being active and not spend as much time as they do being sedentary. Parents should help their family develop healthy eating habits by making sure healthy staples are always available to the family. Fruit, vegetables, whole grains, lean meat, poultry, and beans are great items to always have in the refrigerator. For guidance, parents can familiarize themselves with *myPyramid* made by the United States Department of Agriculture, (USDA). *MyPyramid* is a guideline for healthy eating that describes how much a person needs of a specific category like whole grains or fruit (USDA, 2011). *MyPyramid* is divided into sections, which are whole grains, vegetables, fruits, dairy and protein foods. The daily amount of each section for children ages six to eleven in the pyramid is 6 ounces of grains, 2 ½ cups vegetables, 1 ½ cups fruit, 3 cups dairy, 5 ounces of lean protein and beans, and 60 minutes of moderate to vigorous exercise (USDA, 2011). Food items not listed should be limited or avoided. Parents should also be conscious of serving sizes when dishing plates. Measuring cups are a great way to stick with the daily-recommended amount. Consumption of soda and sweets should be limited. Drinking water should always be available. Although it is hard with busy schedules, dinner should be eaten sitting down at the dinner table with the family. Encouraging families to eat at home more often while positively changing the home food environment appears to be one way to increase healthy food consumption (Fulkerson et al. 2010). A study examining the relationship between family dinners eaten at home showed that it can effect a child's weight(Fulkerson et al. 2010).

Outside of the kitchen, parents can limit time in front of the television and computer and encourage their children to become active.

IX. The Media

The media has played a significant role in creating awareness for combating childhood obesity. Jamie Oliver's *Food Revolution* has had people buzzing on this topic. Jamie Oliver is a celebrity chef from England whose goal is to help families eat healthy, unprocessed foods, both at school and at home. He hopes to save America's health by changing diets. Jamie recently opened up one of his learning kitchens in Westwood, California, which will be his home base for his *Food Revolution* in Los Angeles. "Jamie's kitchen will provide a place for the community to come and learn to cook fresh food quickly and inexpensively (Turner, 2011). By bringing families back into the kitchen to cook dinner together as a team, healthier eating habits will be established.

Michael Pollan is also an important media-figure on the issue of obesity and what we are currently consuming as Americans. Pollan is a well-known author of four *New York Times* bestsellers. When Pollan is not writing, he can be seen on college campuses spreading his healthy eating tips, on Oprah's talkshow, as well as other news channels. He states, "Because most of what we're consuming today is not food, and how we're consuming it — in the car, in front of the TV, and increasingly alone — is not really eating. Instead of food, we're consuming edible foodlike substances, no longer the products of nature but of food science" (Pollan, 2010). One of his books, *The Omnivore's Dilemma: Young Readers Edition*, is a young readers edition to the secrets behind what you eat. He discusses the different processing methods food goes through

before it is on your plate. It is an eye-opening book that can bring knowledge to young adults as to how unhealthy processed, junk food is for your body. He encourages families to stay out of supermarkets and grocery shop at a local farmers market. At a farmers market, everything is fresh and grown locally.

X. Government Action

The United States Government has played a role in combating childhood obesity as well. First Lady, Michelle Obama, has created an organization called *Let's Move!* This program focuses on urging children to become more active, empower parents, and teachers to be more involved in the child's well being, and teach children to become healthy eaters. "Mrs. Obama began a national conversation about the health of America's children when she broke ground on the *White House Kitchen Garden* with students from a local elementary school in Washington, DC. Through the garden, she began a discussion with kids about nutrition and the role food plays in living a healthy life" (Obama, 2010). The First Lady encourages parents to live a healthy lifestyle so the children can look up to them and learn from them. Her five steps to success: parents need to be on the right track to eat well and stay fit, schools need to add healthy living to the lesson plan, community leaders need to empower families and communities to make healthy decisions, elected officials need to take action in cities in towns, and most importantly, kids should have fun being active and eating healthy (Obama, 2010). The First Lady is making sure her voice is heard on this issue nationwide to prevent childhood obesity for future children.

Michelle Obama's initiative, *Let's Move!* has partnered with the campaign, *Salad Bars to Schools*, a grassroots public health



initiative. The Salad Bar press release states, "With the goal to provide at least 6,000 salad bars to schools in the next three years, a new public-private partnership has launched *Let's Move Salad Bars to Schools* (Obama, 2010). By introducing salad bars into cafeterias, children will be able to have access to fresh fruit and vegetables. William Dietz, director of the Division of Nutrition, Physical Activity and Obesity at the Centers for Disease Control and Prevention states that a diet high in fruits and vegetables helps maintain a healthy weight and reduces the risk of many serious chronic diseases (Obama, 2010). Targeting children at a young age will instill lifelong eating and healthy eating habits.

XI. Community Organizations

In California, school districts as well as counties have introduced specific programs to help rid our state of the childhood obesity epidemic. Since the 1990's, numerous obesity prevention organizations have been implemented to help children and adolescents achieve a healthy weight (Smolak, Thompson, 2001). *Fit for Learning* and Bay Area Nutrition and Physical Activity Collaborative are two examples of initiatives currently taking place in Santa Clara County, California.

Fit for Learning, launched in 2005 in result of the increase of childhood obesity, is a program made by Santa Clara County whose goal is to make all students smarter about health, so they are fit for learning. *Fit for Learning* offers a curriculum for teachers and parents to get ideas on how to get their class and children moving. Ms. Casellini, a kindergarten teacher in Santa Clara County School District, uses *Fit For Learning* in her curriculum. She includes information from this organization in her weekly letter to parents. Ms. Casellini encourages parents to pack healthy snacks for their children

such as 100% fruit snacks, string cheese, and pretzels (Casellini, 2010). California FitnessGram test results are also available on this site along with various policies to help the healthy living movement in the classroom. *Fit For Learning* also holds events throughout the year to create awareness of healthy eating habits as well as the obesity epidemic. Each month has a different theme tied to an objective for parents and teachers to expand on in school or at home (Fit for Learning, 2010). For example, March is *Fuel your Body* month where students learn the importance of eating a healthy breakfast as well as the concept of hydrating and fueling your body. April is *Consumer Awareness* month where students are encouraged to make healthy choices amidst the advertisements for unhealthy food that surrounds them. During April the students are also encouraged to watch less television and get moving (Fit for Learning, 2010). Each county should set up a program similar to Fit for Learning so parents and teachers have available resources to research.

Bay Area Nutrition and Physical Activity Collaborative (BANPAC), is made up of 200 health related organizations dedicated to empowering communities to make changes to support better nutrition, physical activity and increased access to healthy foods (BANPAC, 2010). This group is funded in part by the US Department of Agriculture. One of their goals is to get children to drink more water. They have campaigns such as “Drink Water Said the Otter” and “Soda Free Summer”.



Teachers and parents are able to print out worksheets for students that show them how much sugar is in drinks other than water. The worksheets can be printed out in English, Spanish, and Chinese to appeal to a variety of ethnicities.

XII. Laws and Regulations Associated with the Government

The United States encompasses many environments that cater to an unhealthy lifestyle. The government has passed legislation to prevent childhood obesity by banning vending machines on campuses as well as restricting the sell of toys to children at fast food restaurants. People drive almost everywhere they go and eat food that is convenient rather than healthy. In 1960, adult obesity rates were 13.4%, which was before the influx of fast food restaurants and lack of physical activity due to technological increases such as video games and the internet (Smolak, Thompson, 2001)

Currently, California, along with twenty other states, has set stricter standards for public school lunches than compared to the US Department of Agriculture requirements (Segal, 2010). The standards set are an improvement considering five years ago, only five states had implemented stricter standards through legislation (PHA (2), 2009). Approximately 80% of California residents, adults and children, eat fast food 3.4 times per week (PHA (2), 2009). In 2010, California lawmakers were the first in the country to restrict fast food restaurants in Santa Clara County to regulate toys given away in meals as a way to lure children into their restaurant.

“The ordinance bans toy promotions linked to meals that have more than 120 calories for a beverage, 200 for a single food item or 485 for a meal. Toys are also banned in connection with meals that have more than 480 milligrams of sodium in a single item or 600 in a meal. The rules also apply to meals with more

than 35 percent of their calories from fat or 10 percent from added sweeteners” (Weintraub, 2010).

California politicians have also required chain restaurants to post nutrition information on their menus, banned trans fats from restaurant meals and taken soda vending machines out of the schools (Weintraub, 2010).

Laws and regulations have been instituted to rid schools of soda and sugary sport drinks. In 2004, California banned soda in kindergarten through eighth grade school campuses. Vending machines can be used but only if they sell healthy beverages (PHA (1), 2009). But, the law still allowed unhealthy beverages to be sold during lunchtime in California high schools (PHA (1), 2009). The “Healthy Beverages in Child Care” was signed into law in California on September 30, 2010, and will go into effect in January of 2012. The law will require licensed child day care facilities to serve only low-fat or nonfat milk to children two years of age or older, limit juice to not more than one serving per day of 100% juice, serve no beverages with added sweeteners, and make sure clean and safe drinking water is available for consumption throughout the day (Healthy Eating Research, 2010). It is very important for regulations to be put in place at child day care facilities because many children spend time there while their parents work. The 2001 *National Household Education Survey* found that 74% of children in the US, ages three to six are in some form of non-parental care and 56% are in center-based child care (Benjamin et al., 2008). The most recent law passed by Governor Schwarzenegger states that water must be available to students for free when food is served. Before the law was passed, 40% of California schools were not offering free water during lunchtime (Wyckoff, 2010). Water is necessary for children to stay

hydrated and be active. Without water present, students are more likely to drink the sugary sodas and juice. Schools have until July 2011 to comply with this law.

Communities need to promote walking, biking, use of public transportation, and playing outside. The government should make it a priority to widen sidewalks and make parks and playgrounds safe so children are more likely to be active and can have the option to not use a car when going somewhere. The automobile is seen as the most important mode of transportation today, “Before the middle of the twentieth century, communities were designed to support convenient pedestrian travel. But, as the twentieth century progressed, and the suburbs grew, a variety of policies were implemented to make travelling by car easier” (Sallis, 2006). Using public transportation promotes exercise by walking or biking to the bus or train stop but urban sprawl prevents many California residents from taking public transit to work. By making simple changes to a city or town, people will have the opportunity to be active. In a study done by UC Berkeley, 3,173 children ages 9-10 were studied to see if there was a link between living close to parks or recreational activities and obesity. Researchers found that children with better access to parks and other activities are less likely to experience significant increases to their BMI (Wolch, 2001). Having weekly farmers markets in a town is a great way for families to get exercise, be outside, as well as picking up fresh, local food items (Pollan, 2011). Playgrounds, sidewalks, bike trails, and recreational activities should be plentiful in cities so living an active lifestyle is within reach.

XIII. Education System

A. Healthy eating habits should be taught regularly starting in elementary school to instill lifelong eating and wellness habits. A national survey conducted by *Centers for*

Disease Control in 2006 researched nutrition education in public schools in the United States. The study found that *myPyramid* was taught in 76.9% of elementary schools (CDC (3), 2010). Why isn't this pyramid taught in every public elementary school? Teaching children at a young age how to live a healthy lifestyle will set them up for a successful future.

Neither the government nor teachers can control what a child eats when he or she is not in school. But, schools are able to control what they serve to the children when they are at school. Katy Casellini, a kindergarten teacher in Santa Clara County states, "For many of our students a school lunch is the only healthy meal of the day. It should be our priority to make sure the school is offering healthy lunches to our students" (Casellini, 2011). Five days a week, from August until June, a child eats at school. "More than 54 million U.S. children attend school, and 6.5 million youth are in after-school programs located in schools, parks and recreational centers. A substantial portion of school-aged children's daily food and caloric intake occurs within the school and after-school environment" (Healthy Eating Research, 2010). The California School Nutrition Association, CSNA, developed nutrition standards in 2005 for Kindergarten through eighth grade classes. The CSNA recommended that for school lunch more fruits, vegetables, whole grains, nonfat and 1% milk be offered to the students. All snacks served at school must be less than 200 calories and items with minimal nutritional value according to FDA should not be served (CSNA, 2005). The ideal lunch meal should include milk, fruit, vegetables, whole grains, and protein such as lean meat or white chicken meat (The Lunch Box, 2010). In order for school meals to be well-

balanced, there needs to be no more than 30% of calories come from fat, less than 10% can come from 10% from saturated fat (CSNA, 2005).

B. In 2009, the *National Academy of Sciences Institute of Medicine*, concluded that schools need to add as many as two servings of fruits and vegetables daily to meals in order to meet children's basic health requirements. (Obama, 2010) The survey data, reviewing lunches at approximately half of all California school districts over the last five years, indicates that most California school lunches provide the levels of protein, calcium, and vitamins required by the federal government. But only about 50% kept the fat content of school lunches within Federal guidelines. An additional 30% of schools surveyed were close to meeting the fat content standard, but did exceed it by 2% to 5% (CSNA, 2005).

C. Agriculture has recently been added to a few school's curricula. Children can learn about agriculture by learning where food comes from, the health benefits of agriculture, how to choose healthy foods and factors contributing to human health, as well as composting and recycling (Graham et al., 2004). A new grass roots initiative that has gained some steam in the last five years is, *Farm to School*. *Farm to School* connects farms with school cafeterias and classrooms in California, whether they travel to the farm for field trips or the farm provides the school with fresh food such as vegetables for a salad bar. The Community Alliance of Family Farmers (CAFF), has taken this movement throughout schools in California to towns including those in Santa Cruz, Santa Clara, Humboldt, Ventura, and the Bay Area (Community Alliance of Family Farmers, 2011). Children are able to see where they food they are eating comes from and meet the people behind the production of the food. In 2009, the CAFF reached

13,500 students who participated in the Farm to School Program (Community Alliance of Family Farmers, 2011). This is a measure of program success for children to become familiar with vegetables as well as the growing process.



XIV. Pilot Project

I wanted to take action on my own so I have created a pilot-garden project called Kindergrow. Kindergrow will be instituted at Laurelwood Public Elementary School located in Santa Clara County. I have raised \$40.00, through family donations to fund the garden. Ms. Casellini is the kindergarten teacher who I have been working closely with on project planning. She will incorporate the garden in her lesson plan by promoting healthy eating and living in the classroom. She has thirty students and seventy five percent of the students come from low-income households, with English as their second language. Herbs and vegetables will be grown in pots outside of the kindergarten classroom at Laurelwood Elementary. The goal of this project is to introduce the kindergarteners at a young age to fresh herbs and vegetables. The students will “learn by doing” by tending to the garden as well as watering the plants daily that will teach the students responsibility. The students will be excited to study science by watching the plants grow. Students will be able to enjoy their hard work and

labor when the garden produces food. The parents will be notified about the garden in the weekly newsletter and will be able to discuss the items the students are growing. Parents could show their children what the vegetable or herb looks like at the grocery store or even spark some interest in growing a garden at home.

Ms. Casellini plays a crucial role in creating awareness for healthy habits to her thirty students. During our interview she explained to me how her district, Diocese of Santa Clara, has a nutrition policy that does not allow candy, cookies, and carbonated beverages on campus. Any food not in line with the Nutrition Policy is sent home. The Santa Clara County Handbook encourages parents to bring nonfood items to school for celebrations such as a birthday. The district suggests bringing items such as pencils, erasers, stickers or celebrating with a special story time. If parents do want to bring food, it must be healthy food such as fruit or string cheese (Santa Clara Unified School District, 18). Ms. Casellini makes sure to keep her kindergarteners active. She states, "My students love getting the chance to run around outside and play games. A walk around the campus is a great way for students to get moving and look at nature as well. When we have the garden, the children will be so excited to get a chance to play outside while watering and gardening" (Casellini, 2010). Kindergrow will be a great addition to her classroom and the learning environment.

XV. Conclusion

In conclusion, the country has made improvements to fighting childhood obesity but more government action and environment changes are still needed. Prevention is the key in reversing the increased trend of childhood obesity. Parents should encourage a healthy lifestyle daily by providing healthy options to their family, sitting

down as a family for meals, and making sure their children are active and eating right. A child can be at a healthy weight by balancing out the calories consumed with the calories expended. Also, teachers should be at a healthy weight to show the importance of living a healthy lifestyle. Public schools need to offer adequate physical education to children, instill healthy living habits at a young age, and replace unhealthy junk food with healthy items such as whole grains, fruits, and vegetables in schools. Healthy living needs to be taught to children in school just as any other subject taught in school is. Being active and getting exercise shouldn't be seen as such a hassle, children should want to be active, eat healthy, and most of all enjoy doing these things.

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