Obesity's Claim on America

Honors Project

In fulfillment of the Requirements for

The University Honors College

University of North Carolina at Pembroke

By

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Health Promotion

April 18, 2006

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Acknowledgements

This paper was as much theoretical as it was personal. Although it involved much research and fact, it would not have been complete without the insight, personal observation and cooperation of many. I would like to thank my academic advisor, Dr. Sandra Cross, who has challenged me, and at the same time, diligently supported me during my college tenure, particularly my endeavors in the health field. She has taught me the importance of learning opportunities through community involvement and dedication to a cause that you are passionate about.

I would also like to thank the Pembroke Elementary School staff and students. They graciously allowed me to come in, become acquainted with them and the school and help initiate a project that proved to be as demanding as it was worthwhile. Mr. Alan Locklear and Mrs. Ruth Harding I have to especially thank for their commitment and hard work toward a healthier school environment for the children and those working there.

Lastly, I would like to thank my mother and father, Robyn and John Bartholf, for their unyielding encouragement. I would have never been given this chance to carry out this project and paper, culminating my growth and knowledge in personal and public health, if not for their unwavering confidence in me as a student and, more importantly, a person who has the potential to impact other people's lives as well.

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ABSTRACT

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Obesity has flooded America in the past two or three decades; so much it is presently called a national epidemic. Obesity along with being overweight has not been limited to just the American adult population either; childhood obesity is becoming an apparent problem sadly. With increased attention given to this health issue, it is important to not reduce it to an issue of appearance; this health condition is far more severe than fitting into a certain pant size. Obesity is a chronic disease which increases a person's risk for development of other chronic diseases or premature death. As mentioned before, children are becoming susceptible to this national epidemic and the concern of their health has taken a backseat in the school domain. Due to this and my partiality to Pembroke's children, I decided to pursue a research project at the Pembroke Elementary

School (PES). A needs assessment was conducted as a part of my evaluation on the healthiness of the school, as well as personal interviews with the teachers, including the physical education teacher. Results showed an alarming trend; the students at PES reported extremely low levels of activity, high amounts of television watching and poor nutritional habits. From there, a healthy teacher task force was formed and we decided our focus would be on physical activity component. Today, a health awareness campaign as well as a school-wide and community-wide fundraiser is underway. Students and teachers are walking daily and recording miles paced. A Walk-a-Thon will take place to culminate the efforts of those who helped, bring further awareness to childhood obesity and the importance of regular exercise and also raise money for a track or walkway that will be built for the students, teachers and parents to use.

A Persisting Problem

Obesity. When you hear or see the word, what emotions or images come to mind? Regardless of the preconceptions one might have toward this topic, it is apparent obesity has become widespread throughout America to such a great extent that it has been labeled a national epidemic. What's more, this grave weight problem is now permeating into childhood years. Despite the extensive and justified attention given to obesity, the causes of this epidemic are cluttered and sometimes even distorted. Obesity and being overweight is a dynamic matter; however, it does have clear explanations regarding its development and upsurge in America today. An individual becomes obese because of the unhealthy lifestyle choices made, namely one's eating choices and the portions accompanied by low levels of daily activity. As condemning as that sounds it also points to the fact that obesity is a controllable and curable condition. It must be emphasized that this unhealthy state of being is not permanent; people can modify their health habits in order to restore themselves to a healthy weight and, at the same time, diminish the risk for additional chronic disease or premature death.

With the deservingly increased consideration of obesity, it is no longer surprising to read on a daily basis about the array of topics surrounding this dire state of health such as the role of one's physical environment, educational level, cultural background and the societal climate. The environment American citizens are immersed in does not usually produce or support healthful choices. Also, the scope of the general public's education on obesity and other aspects of health are very limited; many people are misinformed due to the endless amount of false health viewpoints offered practically everywhere. The

educational aspect of overweight and obesity is a subtle yet powerful influence on individuals' attitudes and the decisions they make affecting their health and body weight. Therefore, it is critically important to draw a line between what is factual and what is untrue about obesity in terms of its connotations, complications and causes. This step of educating and clarifying is a much needed and crucial measure toward eradicating obesity.

Society, lack of accurate health knowledge, and one's own culture and physical environment are all dynamics that attribute to the pervasiveness of obesity and are extremely imperative to address; however, these are not the primary reasons why a person, community and nation becomes increasingly overweight. The personal choices and behaviors consisting of a sedentary lifestyle and a high calorie eating regimen are the ultimate explanations for obesity's insidious presence in the lives of so many today. By understanding the true circumstances and the origin, this will enable an individual, a family, community and nation to break free from obesity's stronghold.

Obesity Defined

It is necessary to understand what overweight and obesity actually are before learning about their subsequent effects. Obesity is defined as "a chronic disease characterized by excessive body fat in relation to lean body mass; usually at least 30% above recommended body weight" (Hoeger, 2005, p. 115). So, obesity is not simply being fat, rather, it is excess body weight that hosts changes in the body initiating the process of chronic disease development and possible premature death. Researchers have developed a measurement tool to identify obesity empirically, named the Body Mass Index Chart, or better known as the BMI scale. This scale factors in a person's height and

body weight to determine one's current weight status, and more importantly, their level of risk for chronic disease and premature death.

The drawback to the BMI scale is its failure to take in to account a person's lean body mass or the muscular tissue in the body. Someone who has a lot of muscle mass could be considered overweight or even obese when in actuality he or she is quite healthy and lean. This technique is, therefore, inappropriate for bodybuilders or sport athletes who generally have more than the average amount of muscle tissue. Still, the BMI scale is an excellent health indicator for the general public who are not lifting weights or know they are overweight but just unsure to what extent.

The categories of the BMI scale are underweight, ideal weight, overweight and obese. A person within an ideal bodyweight is considered to have a BMI score within the range of 19-24, along with a low risk for disease. The next category, overweight, carries a moderate risk for disease and premature death and falls within the range of 25-29 on the BMI scale. A score of 30 and over on the BMI scale constitutes being obese (Hoeger, 2005, p. 105). This, obviously, accompanies the highest risk for chronic diseases and premature death.

The Body Mass Index serves as a gauge for individuals' longevity in life. Steven Aldana, leading researcher of lifestyle medicine in the College of Health and Human Performance at Brigham Young University, states that data has shown that people who are in the overweight BMI category die 3.2 years earlier compared to those who are at an ideal body weight. While obese individuals die 6.5 years earlier than those with a healthy weight (Aldana, 2005, p. 60). Obese individuals have a 50% to 100% amplified risk of premature death when comparing an individual's risk who maintains a healthy weight

(Overweight and Obesity: Health Consequences, 2005). Simply put, as one's weight escalates above the ideal weight range, so does his or her risk of death.

Obesity's Pervasiveness

Obesity has inundated America as it has one of the highest rates in developed countries. In fact, overweight and obesity is the second leading culprit of preventable deaths in the United States (Aldana, 2005, p. 4). In this country today, approximately 64% of the total adult population is overweight. Additionally, half of these adults, which number about 61 million, are considered obese (Prevalence Statistics Related to Overweight and Obesity, 2005). Between 1960 and the year 2000, obesity's occurrence had jumped from 13% to 24%, with much of the rise happening in that last decade. Observing this chronic disease on the state level gives credence to its label of a national epidemic; before 1990, not one state had an obesity rate above 15%. Eleven years later, *every state* excluding Colorado indicated an obesity rate above 15% in their total population. Furthermore, 27 states reported a rate above 20% and one state had reached a level above 25%. From the individual standpoint, the weight scales are tipping unfavorably also; the average American's weight has increased by 15 pounds in the past decade alone (Hoeger, 2005, p.114).

America's adult population, unfortunately, is not the only group presently suffering from this state of health. Citizens of other nations are also becoming increasingly heavier as this epidemic persists. The World Health Organization has recounted that approximately 35% of the adult population within industrialized nations is obese. Japan, a country once populated with extremely heart-healthy citizens, now displays a very different health picture when contrasting it to about forty years ago. From

1952 to 1994, the incidence of cardiovascular disease in Japanese adults had skyrocketed 400% (Aldana, 2005, p. 38). Explanations for the drastic change in the healthiness levels found in citizens of international countries point to the increased "westernization" of Japan, which represents a diet of high fat, increased carbohydrate consumption and less physical activity. Another possible accomplice to the obesity spread in international countries is the permeation of American fast-food restaurants there, such as McDonald's popularity. One can see how prominent this franchise restaurant is just by looking at its beverage cups; their popular slogan, "I'm lovin' it!" is displayed in numerous foreign languages. Truly, other nations are adopting the western way of life, and so, the health consequences as well.

When addressing a problem of such magnitude, it is sometimes beneficial to observe it on a smaller scale. A county or town, and the families and individuals residing there, are the small but irreplaceable pieces to the larger puzzle of obesity. Robeson County, for example, is "sitting not so pretty," stated in an article by Jonathan Yeomans of *The Robesonian.* This assertion was made based on the county health department's release of a health report card. Robeson health officials employed a wellness assessment, modeled after the federal Department of Health and Human Services' indicators, to pinpoint the health threats existing within Robeson County today. There were ten categories ranging from overweight/obesity to infant immunization. Scoring was done by letter grade, and a D was considered failing being that it was the lowest grade given. Robeson County failed six of the ten categories. Physical activity and the overweight/obesity category were among them (Yeomans, 2006). In North Carolina, nearly 59% of adults are overweight and 23% of the total population is obese (The Health

of North Carolinians: A Profile, 2003). Comparatively speaking, Robeson County inhabits 36% adults who are considered obese (Yeomans, 2006).

Attacking the Innocent

As alluded to earlier, obesity's strong grip can be seen in childhood rates too. Looking back to the year 1963, a mere four percent of American children were overweight, four decades later it **quadrupled** in prevalence. In 2001, it was reported that 14% of Caucasian children ages 12-19 years and 22% of African American and Hispanic children were overweight. In the younger age group (6-11 years) Hispanic youth have a 22% overweight incidence, African American's kids have a 1 in 5 rate and Caucasian children record a 14% rate within the same age range (Obesity Still a Major Problem, New Data Show, 2004). Shockingly, the beginnings of heart disease have, in fact, been found in kids as young as five to eight years old (Aldana, 2005, p. 41). These statistics provide evidence that there is a substantial problem evolving during a child's upbringing. If there needs to be further proof, one simply needs to go to the mall, the local grocery store or the annual county fair and take in to account how many overweight or obese kids are among us. This dangerous youth weight problem is sweeping the country, states, counties and the schools.

On a smaller scale, North Carolina's youth, ranging from infants to teenagers, are also suffering from the ill effects of poor lifestyle choices. Evidence has shown a pattern that as an overweight child ages, his or her risk for obesity and chronic disease heightens as well. According to the North Carolina Nutrition and Physical Activity Surveillance System, for every eight infants between the ages 2 and 4, one is overweight. One in five children aged 5 to 11 years old are overweight. These children, at a very young and

formative stage, are being exposed and thus establishing unhealthy habits due to their parents' choices. What's more, the teenage years are not anymore promising since one in four of North Carolina's adolescents between 12 and 18 years old are overweight. In the past two decades, the prevalence of obesity in North Carolina children within 12 to 18 years of age has increased nearly 20%. Astoundingly, it increased to a measure of 62% in ages 5 to 11 years old and 65% in children between the age group of 2 to 4 years old in the same time frame (The Health of North Carolinians: A Profile, 2003, p.10). On a local level, Robeson County (including Pembroke) matches, if not exceeds, the obesity incidence state-wise and from the national standpoint. The obesity percentage found in Robeson youth is slightly higher than the state average, 19% of kids in the age range of 2 to 18 years old are obese whereas the state's obesity incidence in adolescence totals 17% (Yeomans, 2006). Oddly and coincidentally enough, as I write this very paper regarding the health of North Carolina's youth, there are two young Lumbee children, both significantly over their normal weight, eating two Taco Bell burritos each and a smoothie for dinner from Bert's Café, located in the heart of the UNC Pembroke campus. Witnessing these children's nutrient-deficient diets within Pembroke is certainly no rarity, although worth noting as it brings further validity to the state and the town of Pembroke's desperate need for a health revival. Generally speaking, it is quite evident that North Carolina's youth are learning and engaging in an unhealthy lifestyle leading more kids to become overweight and perhaps eventually obese.

Another local perspective on this alarming trend within childhood is provided by Alan Locklear, Pembroke Elementary School's physical education teacher. Through frequent fitness assessments and observations, he claims that many students at this school

have a difficult time sustaining a light jog for three minutes (A. Locklear, personal communication, February 27, 2006). He attributes most of this to the children's inadequate activity levels. This is a time when a young, effervescent body and a strong heart with plaque-free arteries should be the norm and not the exception. Unfortunately, this is changing as some kids are gravitating toward detrimental habits of poor nutrition and sedentary ways, a lifestyle seen in overweight and obese adults. When observing the statistical evidence on the national, state and community level, in addition to the family circle and individual domain, there is a hazardous way of life gaining momentum in America; one that is in vital need of transformation.

Childhood obesity and overweight is attacking the world's children in a way similar to America's, and they are suffering from its consequences as severely. In a recent report by the International Journal of Pediatric Obesity, experts predicted that there will be a remarkable increase of overweight children globally by the end of the decade. By the year 2010, almost 50% of the kids in North and South America will be considered over the recommended weight. A climb from 25% to 38% in the European Union's youth is predicted. The Middle East and Southeast Asia, regions once consisting of exceptionally healthy citizens, have not been immune to this harmful trend either. Experts predict that the children of China will have a 25% overweight incidence by 2010 (Kirka, 2006). Japanese children are in no better shape; they have managed to increase their dietary fat intake from 13% to 33%, a nearly 300% rise (Aldana, 2005, p. 38). Dr. Philip James, chairman of the International Obesity Task Force, comments that children globally are "...being bombarded like they are in the West to eat all the wrong foods." He further claims that America and the other Western food industry giants "...without even realizing

it, have precipitated an epidemic with enormous health consequences" (Kirka, 2006). Once more, the speculation of the West, specifically America, and its accepted way of life of fried foods and sluggishness is expressing its detrimental capacity.

The Roots of the Problem

Lifestyle decisions, consisting of one's nutritional choices and level of physical activity, are the culprits of obesity and the overweight epidemic this nation faces. The daily personal choices someone makes, such as choosing to eat a double cheeseburger with fries for lunch instead of a turkey sandwich with fruit, are the greater yet less acknowledged reasons for obesity. What lies between a person and their decisions regarding health-related behaviors, however, may be their degree of knowledge concerning healthy living. A person may be misinformed about nutrition or exercise. Many are apathetic or oblivious to the dangerous outcomes of their unhealthy behaviors they are engaging in. Any three of these factors can create a sort of emotional numbness or disregard for their health-related behaviors. The definite and speculated causes of obesity such as genes, society, physical environment, and lifestyle choices, need to be clarified and reevaluated in their scope of influence in the ever increasing presence of obesity. By doing so, this will bring truth, credence and knowledge to those in need of understanding and treating this condition.

The Societal Sway

The societal climate today does not promote a balanced approach to a healthy living, which only hinders the process of handling obesity. Unknowingly, scores of people are subjected to the mass media's idealistic yet unrealistic standards of body weight and shape. In this frame of reference, the more commonplace concern seems to be

placed on how one *looks* overweight or obese. This embodies America's partiality toward outward appearance and, consequently, the neglect of one's "inner workings" which undermines what it means to be truly healthy. Furthermore, our society's fixation on body image inflicts a great deal of pressure on people with weight struggles. Someone who is overweight, slightly or severely, has begun a process of health deterioration in regards to their heart, arteries, bones, and even cell function. The need and desire to eat more nutritiously and become more active generating a healthier body should be the new point of interest in America's social structure. Not whether someone can fit into pants below a size 6. The U.S. Surgeon General reaffirms this point as he states "The primary concern of overweight and obesity is one of health and not appearance" (Overweight and obesity, n.d.) Being cognizant of the perilous sway of our society and the impossible body image being represented daily, can help an individual who is obese construct a new and more appropriate perspective on their state of health and the means to improve upon it.

Genes

Genetics is another topic that has become somewhat tied to the causality of obesity. The obesity rate has climbed remarkably within the last two or three decades. What has not changed, though, is the genetic make-up of the American people; it is not possible for the genetic pool to change in this short time frame. There has been a drastic change, meanwhile, in the nutritional quality of the food environment existing in this country today. This, along with the increased amount of passivity in our way of life, has led to the theory that lifestyle choices are the ultimate cause for obesity. It is significant to note also, in light of the thorough research done on the link between obesity and genes,

results have been largely misconstrued by the plethora of information mediums this country contains. Even more damaging is the fact that the American public relies ardently on these sources for health facts and answers. Science has shown that genes may influence appetite levels and regulate food consumption through various forms; these genetic syndromes tied to obesity are extremely rare though. Unfortunately, the latter statement is usually not included in a health report on the evening news. For example, the leptin deficiency syndrome, a hormone that regulates fat levels and sends satiety signals to the brain, has only been seen in five human cases in medical history (Weinsier, 1999, para. 2).

Research suggests that the majority of obese persons have normal appetite levels and the inclination to overeat has more to do with the behavioral choices made rather then an individual's genes. Past research has proposed that genotypes may slightly influence obesity by adding to low energy requirements; nevertheless, this has a diminutive effect on one's weight gain tendency. Other studies have researched physical inactivity, a definite feature within an obese person's lifestyle, having a genetic link as well. An extremely weak correlation was found when compared to other explanations of obesity (Weinsier, 1999, para. 3). To neglect one's biological make-up would be to deny science; it is true that particular genes have the potential to contribute to weight gain; however, it is equally critical to understand and realize these genes do not play a significant role in the upsurge of obesity today. It is a worthy and imperative task to continue to research possible genetic causes to this alarming epidemic, but equally important is that the research findings are not misinterpreted by the media and subsequently relaying false messages to the general public.

Passive Play

The lack of physical activity in the United States is a crucial problem that can sometimes carry grave consequences. This has been shown through the result of obesity and, more significantly, its related risks for various chronic diseases. In America today, only 33% of people receive the proper amount of daily exercise that yields lifetime benefits. It is innocent and ordinary enough to see a few kids hovered around the television playing the newest video game on the market or watching the fourth re-run of their favorite after-school show. At the same time, this is an all too common occurrence in America today. It is reported that 26% of U.S. children watch four or more hours of television daily and approximately 2/3 of children watch two hours per day (Aldana, 2005, p. 13). The bicycle, a once popular and prized possession of children decades ago, now has to compete with the latest X-box video game, the infinite distractions of the internet and the abundant amount of computer games. It is sad that the new type of "playing" for children of this day involves more finger movement than leg movement.

The Downside to Technology

The environment U.S. citizens live in today does not foster a life of human motion. The progression of technology and manufacturing is a stronghold and incessant priority in America. The car and other modes of transportation, television and the internet are prominent inventions in this world, but regarding the health of the heart, these effects have discouraged, prevented or eliminated the *daily* opportunities to be actively living life rather than passively sitting through it. Of course, it is undeniable that these advances have yielded many positive results and influences in our world today. However, it must

be equally recognized these possessions people acquire and tightly hold onto have powerfully shaped millions of lives in regards to their fitness levels, body weight and overall cardiovascular health.

The mentality toward physical effort itself has been transformed; this is evident in the enduring popularity of labor-saving devices introduced almost daily into the market. These highly prized possessions do save a person time; nevertheless, it keeps a person from expending energy or putting forth the physical effort himself. These unassuming technological innovations-riding lawn mowers, internet shopping, escalators, golf carts, garage door openers alongside many others-play an integral part in this country's weight problem. All these niceties, flawlessly woven into America's way of life, ultimately avert a person from just simply getting up and doing it and taking an active approach toward the desired task at hand. This has even infiltrated the food world as well. If our diets weren't faulty enough, there are now drive-thru windows in practically every fast-food establishment, sit-down franchise restaurants that offer "curbside pick-up" and pizza places delivering right to people's home.

If these "convenient" trends continue, it is possible people will be immersed in a systemic way of living that does not require them to put one foot in front of the other; literally, a life without physical movement. This may seem outlandish upon first thought but it only takes a review in history to see a steadfast pattern of labor-saving inventions to be convinced. Consider the new stand-up scooter, "Ginger" that was introduced into the market in 2001. This scooter, developed by Dean Kamen, is a two-wheeled scooter unlike anything seen before..."This is the world's first self-balancing human transporter," Kamen states. "It does what a human does -- it has gyros and sensors that act like your inner ear;

it has a computer that does what your brain does for you." Kamen developed this scooter so advanced that, he claims "It's got motors that do what your muscles do for you. It's got those tires that do what your feet do for you." The popularity of this scooter is evident in America's fascination with it and it will not be surprising to see more people buying this product once it becomes affordable to the average citizen. These creations are the small but unmistakable indications to the larger picture of obesity we are faced with today.

The critical point with the interplay between obesity and the environment as well as obesity and technological advancements is one of awareness. By being conscious of these externalities and their potential affect on a person's attitude and decisions toward physical activity, this will help initiate a plan to make minor yet purposeful changes into one's daily routine.

Calloused to Calories

When viewing weight gain from the biological level, it is an issue of calorie intake. Therefore, biologically, obesity is caused by the extraordinary amount of calories and food a person *chooses* to consume. As food is taken in, it is stored and burned as energy. This energy is measured in calories, which characterizes the energy-producing potential in a particular food or liquid (Pickett, 2001). Accordingly, every person has an estimated energy requirement (EER). This estimation is based upon the average daily caloric intake for an adult of a certain age, gender, height and physical activity level in order to maintain a healthy weight (Hoeger, 2005, p. 123). If the energy threshold is exceeded for that day, this energy will be stored as excess fat in the body. Knowing this, it is easy to understand why so many people have gained weight and are either overweight or obese; in the last 30 years, the average amount of daily calories eaten and

drank by people has steadily enlarged; men are now eating 168 more calories per day than three decades ago and a drastic rise of 335 calories is reported for women (Aldana, 2005, p. 100).

The fluctuation in calories is attributed to the larger portions Americans eat coupled with the food being more calorie dense than ever before. For instance, suppose a 30 year old male of average height who participates in a low level of daily activity has an EER of 2000 calories. Midmorning rolls around and he is starving because he, of course, skipped his breakfast. He goes to the local gas station and selects a Mrs. Freshley's "Honey Bun," a popular snack in the south, and devours it faster than it took to purchase it. Looking on the back for the nutritional label, this tempting treat contains 580 calories alone with very little, if any, nutritional value. He has just eaten a little under one third of his daily caloric intake; a seemingly innocent midmorning snack! When his body receives this overwhelming amount of sugar, fat and calories, it uses what it needs and stores the rest as fat, which lays dormant in the body. Although this is a hypothetical situation, it is an all too familiar story in America today. Additionally, a lack of physical activity or exercise decreases the amount of calories burned. This is the foundation of the problem in adults and now undoubtedly in children; too much energy being consumed and not enough energy being spent to counterbalance it.

The Bottom Line

Eating habits and low activity levels are the foundational problems. In fact, behavioral geneticists have determined that the behavioral dynamic is the leading culprit in obesity. Dr. Roland Weinsier, researcher and professor at the University of Alabama at Birmingham, stated "Whether we stay lean or become obese is ultimately determined not

by our genes or our environment but by our behaviors" (Weinsier, 1999, Conclusion section, para. 1). In other words, researchers of obesity are maintaining that in the end, obesity is not out of a person's hands, quite the contrary; it is determined by his or her individual choices. The fact that obesity is mainly driven by one's choice of lifestyle is a hard pill to swallow. It essentially holds the person himself accountable and as a result questions one's level of personal responsibility. Environmental and societal influences play a part in obesity but those are certainly not the final determinants of one's weight status. To focus primarily on one's surroundings as the chief cause of obesity strips the individual from their personal power and the inherent right one has to choose. Furthermore, the other dynamics related to obesity can not be blown out of proportion or misconstrued in order to shift accountability elsewhere either. In other words, one must not turn to their "bad" genes to exempt them from the responsibility of eating well and engaging in regular exercise. The more readily people are to accept this truth, the more effectively and properly people living with obesity can restore themselves to a natural, healthy weight.

The Seen and Unseen Damage

The physical effects of obesity are far-reaching, severe and noticeable. The fitness industry, a multi-billion dollar business, consists of "health experts" endorsing the diet pill on television infomercials, and in countless fitness magazines, and authors, without any medical credentials claiming their diet is the ultimate weight loss cure. Their main objective is to sell people on easy and quick-fixes for people who are overweight. Their focus tends to lean, sadly, on one's *external appearance* rather than the internal health of the body and the seriousness of preventable health illnesses. Again, the concentration

should be redirected to the significant complications obesity presents to the human body and to the realistic solutions that need to be adopted and ingrained in to the person's life in order to undo the damage being done by the presence of excess weight. Secondly, being aware of the potential psychological and social damage obesity reaps on an individual's livelihood is beneficial because it can result in further efforts to treat this weight problem. People who are currently obese can reverse their condition, allowing them to lead a life void of disease and pain.

Physical Breakdown

There are numerous complications associated with obesity: bone-related injuries, sleeping and respiratory problems, and heart disease to name a few. Obesity presents an increased risk to many other physical ailments. Cancer, diabetes, heart disease and stroke rank in the top six causes of death in the United States and are responsible for 64% of all deaths (Aldana, 2005, p. 13). Assuredly, all of these illnesses can originate from obesity.

A possible physical outcome of obesity is osteoarthritis, a chronic condition mainly caused by excessive bodyweight where the cartilage is broken down. It is most frequent in individuals who are obese or 60 years and older (Osteoarthritis, n.d.). Accordingly, the ligaments are stretched and bones scrape against each other. This discourages a person from being active, since excess movement can often be painful or laborious. Osteoarthritis is the most common form of arthritis and many people who are overweight or obese endure plenty of pain when plagued with this chronic condition.

Respiratory problems, specifically sleep apnea and asthma, are another common battle fought among the obese. Sleep apnea is an actual obstruction of breathing during sleep; it requires a person to awaken in order to resume breathing again. The breathing

cessation sometimes involves gasping, gagging or choking for air during sleep. Approximately half of the people with this disorder are obese (Sleep Apnea: Symptoms, Causes, Diagnosis, and Treatment, 2006). An individual who is extremely overweight tends to store excessive fatty tissue around the throat, when the muscles are relaxed, the fat can obstruct and block the airway. This respiratory problem eventually becomes a sleep disorder due to the frequent disturbances the person experiences to maintain normal breathing. What's more is the destructive aftermath of sleep apnea; insomnia, high blood pressure, stroke and even the potential for premature death are some of the risks associated with it. Sleep apnea is just another tragic example of obesity's destructive nature within the realm of physical health.

Cancer has also been linked to obesity. In 2001, researchers reported that colon, endometrial, kidney, esophageal and postmenopausal breast cancers are connected with obesity. Among these cancers, 23% to 30% of recorded cases are associated with obesity and physical inactivity. It is shown that maintaining a healthy weight throughout life and weight gain prevention can reduce one's risk of acquiring these cancers. In the United States, 41,000 new cases of cancer were projected to evolve in 2002 due to obesity. Findings prove that overweight and obesity has proven to be the cause of 14% of cancer deaths found in men and 20% of deaths in women (Obesity and Cancer, 2001).

Diabetes Risk

Excessive weight gain can host the development of type 2 diabetes or also called adult-onset diabetes. A weight gain of simply 11 to 18 pounds increases one's risk for type 2 diabetes twice as much when compared to someone who maintains their weight. Individuals who are obese usually gain much more than 11 to 18 pounds and

consequently, the development of this type of diabetes is much greater. In fact, 80% of diabetics are either overweight or obese (Overweight and Obesity: Health Consequences, 2005). One develops this disease when the pancreas, the insulin-producing organ, ceases to make insulin or the body becomes resistant to it. As a person gains more fatty tissue through excessive sugar intake, cells become progressively more resistant to the insulin that is being produced to bring down the blood sugar level. Inactivity is another cause of this type of diabetes; the less muscle mass an individual has, the smaller amount of sugar that will be absorbed into the muscles for energy, as a result, the sugar is left to stay in the blood (Type 2 Diabetes, n.d.). In terms of this illness, the bottom line is exceeding one's healthy weight. Additionally, the identified causes of type 2 diabetes are no different than the key reasons of being overweight or obese; excessive and improper eating and passive lifestyles are the biggest indicators.

Although, type 1 diabetes carries the highest risk for severe chronic diseases among younger people, type 2 is the most common form of diabetes across the general population, and in youth it is climbing at a startling rate. It is no coincidence that as the obesity rate in America's youth is expanding, type-2 diabetes is intensifying in this age group. This medical condition has traditionally been found only in adults over the age of 30 years and it used to be called adult onset diabetes. Now, medical professionals are labeling type 2 diabetes the "first consequence" to childhood obesity. Sadly, it has been found in children as young as four years old. In the past ten years, type 2 diabetes has jumped 30-50% in children and adolescents. Currently, 210,000 people under the age of 20 have diabetes in the United States. Moreover, statistics have proven at the time of a

child's diagnosis for diabetes, 80% of them are overweight or obese (Diabetes Statistics for Youth, n.d.).

As seen across the board, health discrepancies exist within our nation and the high incidence of diabetes within youth minorities supports this claim. The National Diabetes Education Program (NDEP) found that a rising number of American Indian children, including 10 years old and on, are being detected with type 2 diabetes. Also, American Indians are 2.8 times as likely to be diagnosed with diabetes compared to Caucasian children of the same age (Type 2 Diabetes on the Rise in American Indian Children, 2000). It has been estimated, of the children born in the year 2000, 36% will become diabetic at some point in their lives. Hispanics have a more severe rate, as 50% of their youth population will develop this type of diabetes (Aldana, 2005, p. 63). As mentioned before, type 2 diabetes was only associated with adults historically, but unfortunately this devastating disease is suffusing into our nation's youth and its leading causes are related to overweight and obesity.

The NDEP and the Association of American Indian Physicians created an awareness campaign nationwide called *Control Your Diabetes. For Life.* The campaign was directed toward American Indian youth and emphasized the importance of cultivating a physically active lifestyle in order to further prevent cases of adolescent overweight and obesity and also to combat the development of type 2 diabetes. This is one example of an organization recognizing its influential role in a child's life and taking measures to assure a positive and healthful message is conveyed to the kids. There needs to be further interventions such as this within the school setting.

Shocking News

The leading cause of death in the United States is cardiovascular disease. As mentioned earlier, obesity falls under the group of chronic diseases and these types of illnesses are the most common and expensive health problems to treat. However, they are also among the most avertable diseases. The proof is in the statistics; each year, over 700,000 people die of heart disease. Research has found that 82% of these deaths are caused by poor nutrition, lack of exercise (two key causes of obesity) and tobacco use (Aldana, 2005, p. 5). Boldly put, that is 560,000 deaths per year that did not have to happen, that could have been avoided or reversed. To convert statistics in to a more personal, poignant fashion, Aldana, author of "The Culprit and the Cure" makes this gripping analogy:

> Whenever the news media reports on a passenger jet that has experienced difficulties and crashed, it is almost always front-page news in papers across America. What would the reaction be if seven fully loaded 747's crashed in a single day, killing all aboard? What if this terrible tragedy were repeated every single day for an entire year? The total of all these fatalities is still slightly less than the total number of deaths in the United States that are caused by cardiovascular disease each year. (p. 39)

It seems as though preventable chronic diseases such as obesity, have become such a widespread problem that they are becoming the rule rather than the exception. It has become an inconvenience or unfortunate state but not a genuine, collective concern on the individual or national level.

The Heart of Obesity

The most severe consequence of poor lifestyle choices is the development of heart disease. Of the people with a BMI score of 25 or above (the overweight and obese category), these individuals have a higher incidence of heart disease compared to those within the health weight range (Healthy Youth: An Investment in our Nation's Future, 2005). The precursor to a heart attack or a stroke is atherosclerosis. This is the buildup of fats and cholesterol, better known as plaque, within the arterial walls leading to the heart and brain (Hoeger, 2005, p. 290). The frightening characteristic of this biological process is that it is silent and unseen over many years, but improper eating and inactivity are tangible pieces of evidence leading to these tragic events.

Cardiovascular disease, specifically any heart disease or stroke, is the number one killer in America today as noted above, obesity is highly correlated as a risk factor for this disease. Cardiovascular disease is termed as "any disease that is brought on by blocked, weakened, or hardened arteries" (Aldana, 2005, p. 39). Heart disease includes heart attack, congestive heart failure, sudden cardiac death, and angina or chest pain (Healthy Youth: An Investment in our Nation's Future, 2005). The American Heart Association has targeted obesity as one of the top six chief risk factors for coronary heart disease that can lead to a heart attack. Obesity is associated with heart disease and stroke because those who are overweight have increased blood pressure levels, high blood cholesterol and triglyceride levels, and an especially higher risk for diabetes; all develop from a poor diet and not enough regular exercise (Obesity and Overweight, n.d.). All of these factors enhance one's risk for a heart attack. As alluded to earlier, the progression

of cardiovascular disease is quiet, slow and painless over the years; it occurs due to eating poorly and living a sedentary life, which is essentially a constant "attack" on the heart. If it is left untreated the end result, conversely, can be quick, painful and fatal.

Society's Damage

Exploring different aspects other than physical health, one will find many intangible difficulties that accompany being obese including one's social and emotional health and occupational life. Alienation from family, friends and society is an all too common circumstance found in obese people's lives. This, in turn, can negatively affect one's emotional wellbeing, potentially creating more complex and deep-rooted harms within the person's life.

It is understood that being larger presents an immediate consequence: social discrimination. Logically, the unfairness is felt at a much deeper level for those who are obese. What's worse is our society consistently and increasingly glamorizes the thin female body and the male's svelte and muscular appearance. On the other hand, it is easy to recognize also that our environment vastly encourages, if not endorses, over-consumption of foods, especially low-nutrient, high caloric foods. Fast-food chains providing their loyal customer with "Super Size" and "Biggie" portions for just a few extra cents is a case in point. It seems to be a paradox; our society favors the "bigger is better" mentality when it comes to everything but the human body. The feeling of needing more to be satisfied, whether that be money, recognition, or food is unbridled in America's society and only feeds into, literally and figuratively speaking, the problem we face today with obesity. On top of that, the negative labels placed on obese individuals such as "fat" or "lazy" greatly damage a person's self-image making them more

susceptible to depression or anxiety disorders (Obesity and Depression, 2005). Children who are overweight or obese struggle with low self-esteem too. It pervades into other aspects of their lives such as their academic performance, social maturity, psychological development or simply the involvement in sports or any other activities. This bad seed is already being sown as obesity has infiltrated our nation's youth.

Obesity at Work

Research has found that an overweight worker is twice as likely to miss work as compared to a fit worker; these findings show obesity's effects are revealing itself in the workplace too (Healthy Diet Seen Boosting Worker Productivity, 2006). An employee who is overweight can affect the company's overall productivity and attribute to increased health care costs paid by the employer. This sometimes discourages an employer to hire someone who is overweight or obese. Naturally, more and more attention is being paid to the impact of obesity regarding the health care costs of companies. Christopher Wanjeck reports in his book, Food at Work that globally, billions of dollars have been lost in productivity on account of poor diets and their gradual detrimental health effects on workers. Moreover, obesity represents 7% of the total health care costs in all industrialized nations. In the United States, obesity was liable for $99.2 billion of health care costs in 1995 (Healthy Diet Seen Boosting Worker Productivity, 2006). Health care costs for American companies raised an average of 14% in 2003.

The staggering prices in health care are causing employers to rethink hiring unhealthy candidates and, at the same time, shed some of its responsibilities in providing their employee's with benefits in health care. This is marked by the increasing of employee's co-pays and premium contributions. In 2003, employer-sponsored health

plans increased to $3,383 for single coverage and $9,068 for a family health plan (Aldana, 2005, preface vii). Generally speaking, an overall reduction or elimination of health coverage is beginning to surface in companies across the country due to escalating health care costs (Changes in Health Care, 2000). Being overweight or obese along with incurring its side effects is beginning to play a noticeable role in the transformations seen in the workplace.

Deciphering Between Science and Stories

Living and maintaining a healthy life is founded upon scientific principles. This means the information, strategies and programs about wellness that are taught should have, first and foremost, science as the guiding tool. Personal testimonials, biases people hold, promotion of fad diets and weight-loss pills do not illustrate a balanced, long-term picture of good health nor are any of these realistic approaches to improving one's health. As mentioned earlier, the media system is notorious for misconstruing health findings provided by the medical community. This would not be a major problem if the media did not hold such clout in the public's mind-set toward their personal health and what they *perceive* to be true. Unfortunately, the media does, in fact, sway or even dominate much of people's decisions concerning their personal health.

Instances of a well-intentioned friend innocently passing along false health information with another friend are daily occurrences. Oftentimes the facts get tangled through the recalling and exchanging of wellness information. From there, a health myth, or some call it health quackery, is born. These myths can spread like wildfire when unchecked especially since references are unknown and personal research on the particular health topic is very rare in these instances. Someone who is obese is, more

importantly, a health consumer, parent, friend, or responsible individual. So, this makes it extremely imperative that the initial step be finding accurate, unbiased and trustworthy information regarding their healthy weight loss and weight maintenance, at the same time, deciphering between science and stories. Governmental websites, medical journals and published books by medically accredited authors are excellent sources for finding effective solutions and strategies to one's journey toward optimal health.

Culture Shock

It is reasonable to look at an individual's roots, either ethnically or racially speaking, when considering cultural traditions being a hindrance to a person's engagement in a consistently healthy lifestyle. This country consists of an abundance of ethnicities and for this reason there is a proliferation of traditions and values. Group norms, ideals, and partiality to a certain lifestyle arise out of these various ethnic factions. Food choices and even the level of physical activity are a part of cultural ideals as well. As referenced to earlier, Pembroke, North Carolina is no exception, seeing that it illustrates this nation's weight problem and its causes. Once called "Scuffletown," Pembroke is at a crossroads between the old, traditional South and the ever emerging modern, technological age America is building on relentlessly. The popularity of traditional southern cooking has remained in this town; fat laden vegetables, fried chicken and biscuits-n-gravy seem to be the mainstays in the diets of those who live here. This, of course, has been prevalent historically among the general southern regions, though it seems even more heavily saturated within this town. Along with the notable low activity levels exhibited by residents here, there is little incentive to become healthier in part because of the lack of health education possessed by people. So, it is true that a

person's ethnicity or race can play a role in the existence of obesity; nevertheless, the lifestyle choices individuals make *within* their respective culture are the fundamental reasons for obesity and its pervasiveness in America today.

Health Left Behind:

Children are the key to health changes; they are the potential political leaders, business entrepreneurs, and teachers of the future. Kids at a young age are being taught, directly or indirectly, that healthy eating and regular exercise are not essential to a rewarding life. One of the major political goals in America at this time is the "No Child Left Behind Act." This reform attempts to provide education to all children, regardless of their race, geographical location or socioeconomic status, thereby giving them the reigns to their future; to choose a life of continuous academic growth and hopefully, economic prosperity. This is a worthy amendment but it is not nearly enough. In a conducted survey it was found that a mere 8% of elementary schools nationwide provided daily physical education (PE) to their students throughout the year. The priority for health education and exercise in middle schools is even worse; only 6.4% offered PE classes everyday to their students all through the school year (How Schools Can Help Prevent Childhood Obesity, 2004). What advantage is it to have a child become a great student, go on to a prestigious university, and then land a high-paying, enviable job, only to have him potentially become obese and suffer from the physical, emotional and social consequences that arise from this disease? In America today, physical and health education, the main channels of teaching children about nutrition, physical activity and an overall lifestyle of vitality, is being left behind as well.

As noted by the Carnegie Council on Adolescent Development, "[S]chools could do more than perhaps any other single institution in society to help young people, and the adults they will become, to live healthier, longer, more satisfying, and more productive lives" (Healthy Youth: An Investment in our Nation's Future, 2005). This vital message is one of perspective, acknowledging that the school as an entity can play a considerable role in the future of a child's health and therefore the quality of his or her life. A rough estimation on the amount of time a child spends with teachers per year is about eight-hundred hours. What are the educators teaching children other than their ABC's, algebra, and who the first President of the United States was? The message of optimal health as an essential key rather than an optional way of life needs to be conveyed undoubtedly to children and adolescents in school. The evidence of increased diseases found in our nation's children, namely type 2 diabetes and obesity, should make many rethink the priority level that physical and health education classes possess within the schools.

Pembroke Elementary Pathway Project

The bold statement made by the Carnegie Council on the school's influential power and my curiosity about the school health environments within the town of Pembroke became my motivation for the research project and internship I completed at Pembroke Elementary School (PES). The plan was to examine the current health index of this elementary school in terms of the students, teachers, administration and the environment. Through direct observation and surveying done within the elementary school, I wanted to explore whether or not Pembroke Elementary School was a microcosm of the larger, national obesity epidemic. Nutrition and physical activity were the two main areas explored in my research at PES. Beyond that, I attempted to identify

an effective intervention that would ultimately raise health awareness and, in practical terms, create a healthier atmosphere for those at this school, both student and teacher.

I began by interviewing the physical education teacher there, Mr. Alan Locklear, in order to learn more about the level of physical activity the kids experience at school. At Pembroke Elementary School (PES) students go to physical education class just once a week for a mere half hour. In other words, out of the thirty *hours* a child spends at school every week, only thirty *minutes* is spent having the children involved in organized play and exercise or learning about health and wellness. As mentioned earlier, Mr. Locklear expressed concern over the children's fitness levels seeing that many of his students have trouble sustaining short bouts of exercise (this does not include children with asthma or respiratory problems). Recess, which is a thirty minute break for both the teacher and student, is granted daily to the children but the teachers reported that many students do not participate in playing, running or even walking during this period of time.

Needs Assessment

I designed a needs assessment based upon questions regarding the children's nutritional food choices and portions and evaluating the students' degree of knowledge about nutrition. The latter part of the questionnaire focused on identifying the child's amount of daily physical activity and the eating and exercise habits expressed by their family. In order to gather results quickly and precisely, the surveys were designed for and distributed to all 3rd and 4th graders. Permission to conduct the needs assessment was granted by the faculty of Pembroke Elementary and anonymity of the students within the study was promised beforehand and kept. Mr. Alan Locklear graciously offered to use his

class time to hand out and have the surveys completed by the students. This survey was performed throughout the week of January 23rd , 2006.

The results confirmed my speculation; Pembroke children are not immune to the state or the nation's poor health habits, in fact, they almost mirror them. Results showed that of the students surveyed, just 51% eat one to three pieces of fruit, at most, *per week.* The inclusion of vegetables into their diet was far from adequate either; 22% of the students had claimed to have not eaten even one vegetable portion all week! As for visits to McDonald's, KFC, Burger King or any other fast food joint in the area, nearly 35% of the students in 3rd and 4th grade of PES had reported eating at these restaurants once or more times *per day*. To state that the students at this school do not receive the proper nutrients in their diets would be an understatement. Fruits and vegetables are being pushed aside in a child's food regimen and McDonald's fries, burgers and soft drinks are the substitution. With these nutritional patterns being formulated at such a young age, one must contemplate whether their future eating patterns will be much better.

The second focus, which was the activity patterns among the students and their families, cast light on the concern of technological advances being a detriment to childhood health, mainly their cardiovascular fitness. Mr. Locklear's assertion that many of his students struggled with maintaining light to moderate exercise was confirmed by the results in the survey. One of the questions asked "How often do you watch television"? Of the students who responded, 44% stated watching three or more hours of television per day. As previously stated, the national average for children watching at least two hours of television daily is 67% (Aldana, 2005, p. 13), and 64% of the Pembroke students watch at least two hours per day. The comparison of time spent on

exercise versus television watching by the students at Pembroke Elementary is extremely disproportionate and worrisome. Approximately 55% of the students answered to playing, exercising or being physically active every day for thirty minutes. I must emphasize, though, this is a mere thirty minutes a day of activity as compared to the reported three or four hours (possibly more) being spent sitting in front of the television.

Just as youth's nutritional outlook does not look very promising, the level of activity they are assuming is no better. Video and computer games and the internet confirmed their popularity among the PES students when 30% answered to using these devices three or more hours on a daily basis. Another focal question asked how often the students' family exercises. Of the families considered in this questionnaire, 46% of the students exercised three to four times per week. The North Carolina Minority Mortality Risk Factor survey shows a correlation to this finding; 43% of North Carolina's American Indian adult population does not receive adequate physical activity each day (The Health of North Carolinians: A Profile, 2003, p. 15). There was some glimmer of hope at the final question of the needs assessment, though. The last question in the survey asked the student whether or not they wished to be more active and 80% of the 3rd and 4th graders checked "yes." This indicated, at the least, a mild desire from the children to perhaps cultivate a more lively way of life rather than passively playing video games, surfing the internet or watching television.

Although this survey was not a final determination of the health status residing in Pembroke's children or even a precise measurement of the overweight and obesity incidence within the school, it did offer worthy insight in to the kids' health patterns and the extent to which they engage in healthy or unhealthy habits. The students' preference

for fast food and passive gaming along with the influence of their family's health habits confirmed that an intervention, attempting to encourage more activity and less sitting, would be a good starting point for Pembroke Elementary School.

Health Awareness and Walking Campaign

Today, a health awareness campaign at the Pembroke Elementary School is underway. Through meetings with the assistant principal, Mrs. Ruth Harding, my academic advisor, Dr. Sandra Cross, along with the formation of a teacher task force at Pembroke Elementary School, a health movement, literally and figuratively speaking, is manifesting itself. This effort has a two-fold purpose. The first goal is to raise money for a professionally built track outlining the school's campus, which will be 1/3 mile in length. Local businesses and the Pembroke Town Council have been informed of the pathway project and some have pledged donations toward the cause. The launching of the "Mileage Club," a program led by Mr. Alan Locklear, is the second intervention taking place. It involves both students and teachers walking or jogging daily during gym class or class breaks on the make-shift track as well as logging their total miles trekked. This has already begun and improvement in the students' and teachers' fitness levels at Pembroke Elementary are being observed and reported among the school community.

To culminate the efforts of this project, a Walk-a-Thon will take place on April 28th, 2006. This is an invitation to everyone: the students, parents, teachers, UNC Pembroke's students and faculty, and community members of Pembroke. With every lap walked by the PES students participating that day, they will be able to receive incentive gifts. Raising financial support for the building of the track will be one of the focuses that day and the recognition of businesses and organizations who made a donation toward this

cause will take place as well. We hope this "walking movement" will be a symbolic event; a small yet momentous step toward reducing the rate of obesity and being overweight within the school and the town.

The profound need for health to take precedence within schools nationwide is important to conceptualize. The vision of a healthier generation of people can be accomplished by recognizing and establishing health interventions, which facilitate health education materials among the faculty in school as well as incorporate health education in to their classroom curriculum. This will hopefully lead to changes made in the environment kids spend so much of their time learning and embedding new habits, attitudes and notions; the school place.

Obesity: The Right to Choose

Obesity is a problem worth exploring, understanding and identifying the feasible solutions to. Appreciating that it is more than being exceedingly overweight or not fitting the ideal body image is a considerable aspect of obesity. Obesity presents complications to the human body, physically and psychologically; one can undergo physical pain and at the same time emotional anguish. Bringing sensitivity and awareness to this problem can help alleviate many of the difficulties found when examining the causes and solutions to obesity. Awareness of one's physical environment and the negative influences in society are key factors to reducing the incidence of obesity today. The power of educating one's self, all the same, with accurate and scientifically proven information is essential to the process of one's health behavior change. Finally, one's wellbeing lies with the individual, despite the pending pressures from the outside; it is an individual's choice to adopt a lifestyle consistent with nutritious eating and an active lifestyle. This decision, in due

course, will prove to be the cure of one's obese condition and furthermore, create a life characteristic of continual progression toward a higher quality of life.

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