

## Childhood Obesity by James Titone (2012)

*The Mystery of life isn't a problem to solve, but a reality to experience.*

*- Frank Herbert*

There's no question childhood obesity has become a major health threat in the United States. According to some recent studies conducted by the World Health Organization (WHO) one in three children are obese, and that total number is calculated in the millions. Child obesity rates have tripled among school-aged children and adolescents over the past thirty years and are affecting children at younger and younger ages. Childhood obesity has reached alarming rates where 32% of children are either overweight or obese (Ogden, Carroll, & Flegal, 2008). Over the last several years this trend may have reached a plateau yet the high rates remains steady. .Overweight and obesity in childhood presents many threats in terms of negative health consequences as well as psychosocial difficulties. Formative childhood years are crucial for the development of health behaviors and health outcomes that continue through adulthood. The majority of children who develop obesity during childhood will become obese adults and the resultant health outcomes of experiencing long-term obesity are documented (Dietz, 1997; Nicklas, Baranowski, Cullen, & Berenson, 2001). Children and adolescents who are overweight or obese are diagnosed with conditions that were previously only observed in adults such as cardiovascular disease, dyslipidemia, type II diabetes and nonalcoholic fatty liver disease (Daniels, 2006; Spiotta & Luma, 2008). Considering the current trend in overweight and obesity and the negative health issues, by the year

2014 it is estimated that 20% of all health care dollars will be devoted to treating obesity related diseases (Heffler, and Smith, 2003). Additionally, obese children tend to use medical services such as hospitalizations and clinic visits more often than their healthy weight counterparts (Estabrooks & Shetterly, 2007; Hering, Pritsker, Gonchar, & Pillar, 2009; Janicke et al., 2008). Beyond physical complications, children who are obese tend to have poorer health related quality of life, lower self-esteem (Strauss, 2000), and poor body image and related health risk behaviors. The effects of childhood obesity appear to be caused by many factors and throughout this paper we will be analyzing some of the effects including daily diet, a correlation between low food prices and low nutritional value, decreasing physical activity among school-age children, genetic links and even technology. I believe that these are potential factors for the obesity problem in children but the accusations need to be examined further to really understand “why” these claims have such an impact on the obesity issue.

You can't depend on your judgment when your imagination is out of focus.

- *Mark Twain*

### **BODY MASS INDEX (BMI)**

First lets take a look at how obesity is defined in children. Adult and Childhood obesity are both outlined using a formula called BMI or Body Mass Index. This formula is calculated by taking an individual's body mass and dividing by the square of the person's height. BMI does not measure body fat

directly, but research has shown that BMI correlates to direct measures of body fat. BMI is a fairly reliable indicator of body fatness for most people and is used as a standard measurement by Doctors and other medical professionals. The BMI formula looks something like this  $BMI = \frac{\text{mass (kg)}}{(\text{height (m)})^2}$ . Obesity is defined as a BMI at or above the 95<sup>th</sup> percentile for age and sex (Wyatt, 2006).

### **BODY MASS INDEX PERCENTILE**

*Do something every day that you don't want to do; this is the golden rule for acquiring the habit of doing your duty without pain. – Mark Twain*

After BMI is calculated for children and teens, the BMI number is plotted on the CDC BMI-for-age growth charts (for either girls or boys) to obtain a percentile ranking. Percentiles are the most commonly used indicator to assess the size and growth patterns of individual children in the United States. The percentile indicates the relative position of the child's BMI number among children of the same sex and age. The growth charts show the weight status categories used with children and teens (underweight, healthy weight, overweight, and obese).

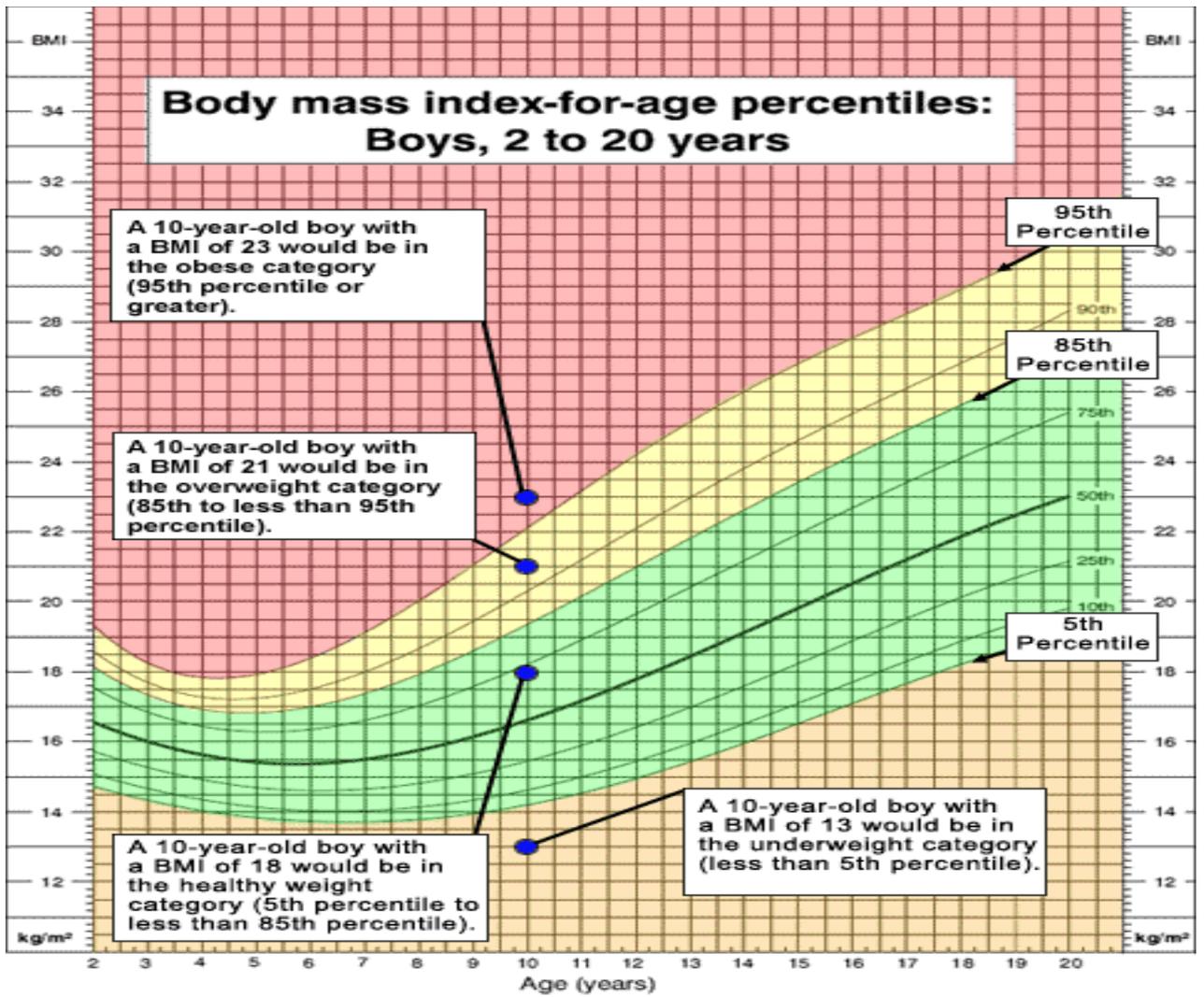
BMI-for-age weight status categories and the corresponding percentiles are shown in the following table.

Weight Status Category	Percentile Range
Underweight	Less than the 5th percentile
Healthy Weight	5th percentile to less than the 85th percentile
Overweight	85th to less than the 95th percentile
Obese	Equal to or greater than the 95th percentile

The BMI-for-age percentile is used to interpret the BMI number because BMI is both age- and sex-specific for children and teens. These criteria are different from those used to interpret BMI for adults — which do not take into account age or sex. Age and sex are considered for children and teens for two reasons:

- The amount of body fat changes with age. (BMI for children and teens is often referred to as *BMI-for-age*.)
- The amount of body fat differs between girls and boys.

See the following example of how some sample BMI numbers would be interpreted for a 10-year-old boy.



## HEALTH FACTORS

*Any activity becomes creative when the doer cares about doing it right, or better.*

- John Hoyer Updike

Overweight children, as compared to children with a healthy weight, are more likely to develop many health problems such as high cholesterol and high blood pressure, which are associated with heart disease in adults. Type 2 diabetes, previously considered an adult disease, has increased dramatically in overweight children and adolescents. Children at a healthy weight are free of these weight-related diseases and less at risk of developing these diseases in adulthood.

There are many risks and complications with obesity. Physical consequences include:

- increased risk of heart disease
- high blood pressure
- diabetes
- breathing problems
- trouble sleeping

Child and adolescent obesity is also associated with increased risk of emotional problems. Teens with weight problems tend to have much lower self-esteem and be less popular with their peers. Depression, anxiety, and obsessive-compulsive disorder can also occur.

I have conducted my own investigative journey to develop some real life data as to the effects of Childhood Obesity. In developing my analysis, I have chosen a subject who closely fits the profile of having a child who is obese. My friend, who we will refer to as Mel, to protect the innocent, is a single mother who is in her mid to late 30's and has a son who is 9 years old.

Mel works a full time job and lives in a suburban area where her son goes to elementary school in that community. Mel's son is clearly overweight for a child in that age group but has not always been that way, as I have known him since birth. It is a difficult conversation to have with your friend if you are going to tell them that their child is overweight, but I decided that it needed to be done not only for my own research but to educate Mel on the risks of having an obese child.

During my visit with Mel it was clear that her poor nutritional habits were being passed down to her son. This demonstrates that the first thing that parents need to do is to make sure that their children are eating properly. Parents should try to offer their children an equilibrated diet, which should include, as much as possible, a variety of proteins, fibers, glucose and fats. This will lead to path of healthy eating in the future. Families are important because they are closest to the children; parents are role models for children. Consequently, parents are partially responsible for the epidemic originally because parents let their children develop these eating habits. Parents should also replace the "junk food" such as chips and sweets with healthier snacks, like fruits, yogurts or nuts.

As I continued my journey of research I was able to conduct interviews with some professionals in the field of Childhood Obesity. I reached out to Laura Kraemer who is a certified RN in pediatrics and has 27 years experience in the Child Health Care Services as well as an author and instructor.

**Which of these is more likely to be the cause of childhood obesity**

**DNA, poor diet and nutrition, or the lack of exercise?**

**A:** DNA is the least common to occur. Poor Diet and nutrition combined with lack of exercise would be the most likely to cause childhood obesity.

**How can we, as a society, make a difference in the obesity epidemic?**

**A:** Addressing the nation's obesity epidemic should focus not only on changing personal behaviors, but also change our environment so that healthy options are readily available.

**How can families teach their children about the importance of eating healthy?**

**A:** It is important for school-age children to get three meals each day. Snacking one to two times per day is also important so children can refuel between meals and get essential nutrients for their growing needs.

Parents have more control than they think to guide their children's healthy eating decisions.

**What suggestions do you have for motivating families to become more active?**

**A:** Children should be physically active at least 60 minutes each day. Defined as anything that gets your body moving, children should aim to raise their heart rate and lightly sweat.

Start by setting a goal to move more as a family. If 60 minutes of activity seems overwhelming, start with small increments of five to 10 minutes and

gradually increase this time to 20- to 30-minute sessions to achieve 60 minutes each day.

Children should do activities that are fun — play ball, take a bike ride, walk the dog or just get out and play. Try new activities like skateboarding, in-line skating, yoga, swimming and dance.

I felt this was a beneficial interview but was still seeking additional information from other in this field. I then contacted Sandy Jarvis who is a CPNP (Certified Professional Nurse Practitioner), IBCLC (International Board Certified Lactation Consultant), and author of "Parenting the Overweight Child: A parent's step by step guide for children ages 2 to 11 years"

**What research have you done on childhood obesity?**

**A:** I have been a Nurse for over 20 years and have dedicated many of those years to researching childhood obesity. I have written several articles and a book on the subject.

**How can we, as a society, make a difference in the obesity epidemic?**

**A:** Addressing the nation's obesity epidemic should focus not only on changing personal behaviors, but also change our environment so that healthy options are readily available.

As parents, the home environment is the best place to begin. Our children's earliest decisions regarding food, activity and television viewing occur in the

home. Children look to their parents and other caregivers to model healthy lifestyles and teach them how to make good choices.

Parents are encouraged to get involved with wellness efforts at their child's school or day care center. Consider also becoming active in your local community to ensure there are safe, clean options for children to engage in physical activity. Organize cleanups of local parks and trails, or volunteer to help repair/maintain play spaces at township or county parks.

**How does a parent combat childhood obesity at home or in schools?**

**A:** Parents are the first line of defense in fighting this issue. Whether it is discipline, self-esteem, eating healthy foods, or having an active lifestyle--home is where it all must start. My personal and professional belief is that school is for learning, not for parenting. Having said that--schools must provide healthy nutrition (they do not do this now -- pizza, French fries, soda, chocolate milk, nachos, and Chik-fil-a fast foods do not constitute "healthy food"). The schools must provide opportunity for exercise, and the schools must stop trying to make money by selling "junk" food and drinks to our children.

**What type of disease do you see in obese children?**

**A:** I would say that in my practice, the obese children I see about 75 percent of the time have some kind of condition that has been triggered by the obesity -- whether it is high blood pressure, pre-diabetes, high cholesterol, PCOS (polycystic ovarian syndrome). I even have three patients now with Non-

alcoholic fatty livers (this used to be only seen in very old, obese people). The co-morbid conditions we are seeing with obesity in children are so sad to me -- it is being predicted that this generation in school now will not outlive their parents. The most distressing thing to me is that this is TOTALLY preventable through healthier habits.

These interviews were very beneficial in my research and helped me get a solid understanding of how widespread the Child Obesity epidemic really is.

### **NUTRITIONAL EFFECT**

*Of all the diversions of life, there is none so proper to fill up its empty spaces as the reading of useful and entertaining authors.*

- Joseph Addison

Nutrition plays a key role in the effect on childhood obesity and proper diets are essential to a child's well being. The fact is that we need to give people better tools to keep kids healthy — and right now, some parents mean well but don't have the information they need to make the right decisions. Ensuring that all children have access to healthy, nutritious food will ultimately improve educational outcomes, reduce rates of childhood obesity, and enhance the mental and emotional health of our children (Stein, 2011).

Children who are overweight or obese are at a greater risk for serious health problems. These obese children are more likely to suffer from illnesses

that can affect their ability to live long, healthy, and productive lives. Children who are overweight or obese face a greater risk of high blood pressure and high cholesterol (two serious risk factors for heart disease), Type 2 diabetes, bone and joint problems, and breathing problems like asthma and sleep apnea (Stein, 2011). Because of early childhood obesity problems, children are significantly more likely to become obese adults, potentially setting them up for a lifetime of increased health risks, such as heart disease, stroke, and osteoarthritis that come from being overweight.

If the childhood obesity trend continues to affect the same amount of children it has over the last 30 years, experts predict it could cut two to five years off the lifespan of the average child in America—making this the first generation to have a shorter life expectancy than their parents (Visscher and Seidell, 2011).

Childhood obesity is clearly an issue in America and people are starting to action to address the issues. The Alliance for a Healthier Generation is leading the charge against the childhood obesity epidemic by engaging directly with industry leaders, educators, parents, doctors, and kids. Founded in 2005, The Alliance is a partnership between the Clinton Foundation and the American Heart Association.

The goal of the Alliance is to reduce the nationwide prevalence of childhood obesity by 2015 and to inspire young people to develop lifelong healthy habits. Expanding access to health coverage and federal nutrition programs for children, enhancing the dietary quality of school meals, increasing

physical education in schools, and improving neighborhood safety are all important to managing childhood obesity and this group is addressing these issues. The Alliance also helped create the 4 part documentary series with HBO called “The Weight of the Nation”, which address’s the obesity epidemic in America. The Alliance acts as a sponsor for a running team in the NYC marathon. It would be helpful if more organizations such as the Alliance would participate in programs to help address the childhood obesity epidemic.

The childhood obesity epidemic has risen to such extreme levels that the American government is starting to take notice. Michele Obama, our First Lady, has launched a campaign to help fight and educate Americans on childhood obesity. *Let’s Move!* Is a comprehensive initiative, dedicated to solving the challenge of childhood obesity within a generation, so that children born today will grow up healthier and allow the children to further pursue their goals (Office of the Surgeon General, 2010). Combining comprehensive strategies with common sense, *Let’s Move!* Is about putting children on the path to a healthy future during their earliest months and years. Giving parents helpful information and fostering environments that support healthy choices. Providing healthier foods in our schools. Ensuring that every family has access to healthy, affordable food. And, helping kids become more physically active.

Mrs. Obama believes that everyone has a role to play in reducing childhood obesity, including parents, elected officials from all levels of government, schools, health care professionals, faith-based and community-based organizations, and private sector companies. Every American’s involvement

is key to ensuring a healthy future for our children (Office of the Surgeon General, 2010).

Social and economical environments can also contribute to high rates of childhood obesity. Here we have the home environment, the social and physical components of the home that are related to food and physical activity of children. These components include the availability and accessibility of food times and physical activity opportunities, policies to support healthy eating or physical

Activity, role modeling of healthy eating and physical activity, availability of media equipment, policies related to media, role modeling of media activities, and the kitchen environment. Children need a healthy diet and regular physical activity to support optimal growth and brain development. In 2012, a significant number of children of all ages have poor diets that fail to meet the national nutritional recommendations. This is due in part of the effects of “Food Insecurities”. Food insecure households are those, which struggle to afford the food that their family needs. Currently, food insecurity affects over 12 million U.S. households. These insecurities are particularly devastating for children, whose developmental well being depends on access to adequate nutrition.

- In 2009, nearly one in four households with children struggled to afford the food they needed.
- Preschool and school-aged children who are food insecure are more likely to suffer from problems like anxiety.

- Elementary school children who experience severe food insecurity are four times more likely than their peers to require mental health counseling; seven times more likely to be classified as clinically dysfunctional; and seven times more likely to get into fights frequently.
- Food-insecure children are more likely to be hospitalized due to problems associated with poor nutrition. In the United States in 2003, nearly 400 children under the age of 5 were hospitalized due to nutritional deficiencies (Stein, 2010). These children are more vulnerable to infections, and end up hospitalized with illnesses.
- Insufficient nutrient intake during childhood has been linked to physical and mental health problems as well as emotional and behavioral problems, learning deficiencies, and lower grades.
- The National Health and Nutrition Examination Survey suggests that food insecure teens are more likely to have repeated a grade and missed more school days. More than 40% of teens living in food-insecure households had repeated a grade, as compared with 20.7% of food-secure teens (Stein, 2010).

Only one in five high school children eats the five recommended servings of fruits and vegetables a day and fast food consumption has increased fivefold among children since 1970. Nearly one-third of American children ages 4 to 19 eat fast food every day, resulting in about six extra

pounds per year for each child. Sugar-sweetened beverages – a key contributor to weight gain and obesity – constitute nearly 11 percent of children's total calorie consumption.

Documentaries such as "Supersize Me" and "Fast Food Nation" as well as reports in the popular press have frequently suggested that fast food is at least partly to blame for the U.S.'s rising obesity rates. These films demonstrate the consumption of fast food in the United States as well as the health effects it has on humans. Have you ever been through a poor or lower class neighborhood and noticed how many fast food restaurants there are? Now this is not saying that the middle and upper class neighborhoods don't have these same restaurants because humans need food no matter what type it is to survive, but these fast food places are more abundant in the lower class neighborhoods. For the most part these chain restaurants will have a less expensive menu (ex. McDonalds "Dollar Menu"). This type of food is cheaper and of lower quality. Some recent discoveries demonstrate that some of the products these companies are selling as "food" is nothing more than chemicals and fillers (Behansky, 2010). These companies also target children in their advertising campaigns and promote food options that are loaded with sugars and saturated fats when there are healthier options available on the menu. Since fast food restaurants market the convenience factor they are able to keep costs low in return they sell more product. Their main advertising demographic target is people below the age of 15. Corporations such as McDonalds and KFC are not in business to create nutritious food they sacrifice quality for quantity to make money. If we were to analyze some of the ingredients that are on the menu at some of these restaurants you would find such additives

as Dimethylpolysiloxane and azodicarbonamide. Not only would most people not know what these ingredients are they would probably have a hard time even pronouncing the words. These are the types of restaurants that thrive in the lower class neighborhood, which can cause a higher rate of obesity in children.

## **TECHNOLOGY EFFECT**

*All technology should be assumed guilty until proven innocent.*

*- David Brower*

In the current year of 2012, technology has taken the center stage in our everyday lives. We rely on technology for nearly everything. It makes our life easier, more manageable and enjoyable. With the advent of computers and the Internet, more and more people are becoming a couch potato. Even children nowadays tend to stay longer indoors than outdoors. With game consoles such as Xbox 360 and Wii, children have more incentive to stay at home and just play there all day long. Portable gaming consoles have also swept the games industry with handheld devices such as the PSP and Nintendo DS. These devices keeps the kids hooked into the screens. It's undeniable that these games have a positive on kids. Some games are meant to stimulate critical thinking, time management as well as hone scientific and arithmetic skills. While they have a positive impact on brain development, the kids' physical development can be compromised, if parents are not vigilant enough. With all these techy toys, kids are having a more sedentary lifestyle than before. Some parent even use technology as a baby sitter – I can't blame them, sometimes parents too much on their hands.

The American College of Sports Medicine (ACSM) supports recommendations made by the National Association for Sport and Physical Education, the United States Department of Agriculture and the U.S. National Institutes of Health that children get at least an hour of moderate exercise a day (Office of the Surgeon General, 2010). According to those recommendations, The United States should look towards developing technology to help solve the childhood obesity epidemic. By developing are current technology, specifically video games, we can make the games more physically interactive while enjoyable for children. The attention span of a child is very limited and if they are enjoying themselves it would be easier to keep them entertained while staying focused on their current activity. Exercising does not have to be painful; it should be enjoyable and stimulating. Children would be more responsive to playing video\computer games that allow them to have fun while unknowingly staying active and potentially keeping the children from becoming obese.

The statement "Technology is Responsible for Increasing Obesity Rates" has strong arguments from both sides. Let's examine these debates.

Common sense tells most people that technology has made people more obese. No more getting up to change the TV channel, turning the air conditioner or fan off or on, and even getting off the couch or recliner to see what the weather is because, now, people have remote controls or remote devices that do these "tasks" for them. As technology plays an increasingly

integral part of human life, it is leading people to rely on technology to perform physical labor, which once accounted for significant calorie expenditure. These technological developments have made human lives easier by not requiring human bodies to expend the energy necessary to complete these tasks. However, the increasing absence of manual labor from daily life is leading to higher obesity rates. This is because it is reducing the amount of calories that people burn. Technology has made humans lazy and can be responsible for making people more obese than ever before, especially children and young adults.

Technology is not responsible for increasing obesity rates, because over-eating and under-exercising are the real issues. While it may be more fun for some people to play video games on their computers or watch movies on their TV's, these activities do not cause obesity. Active children and adults who eat a proper diet and lead an active life are not at risk of obesity. More people work longer hours and travel longer for their jobs. Where I work, most people do not live close to the office. My commute on the train into New York is almost two hours each way. So, for my co-workers and myself spending time commuting takes away from time we could be exercising. Also, people with children have more things they are responsible for, and the time is just not there to exercise.

Technology really isn't to blame -- we are. And just as smart devices and handy electronics has allowed us to put ourselves in front of the television or play video games for hours, technology is now being re-wired to help us

curb those unhealthy trends (Stein, 2004). So how does technology aid us in staying healthy? Technology is the key to success in staying healthy for one very simple and obvious reason: It provides accurate and unbiased information that people can utilize to take effective, informed action that's going to yield powerful results and positive change (Office of the Surgeon General, 2010). Without the proper information or education children are going to be lost with no direction or guidance. Technology can play an integral part in reversing what has been previously said, "That technology causes obesity". Parents can now do everything from physical interactive gaming with children to exercising on the Wii. With technology, we now have the ability to keep children motivated. It provides us with all of those tools. Losing weight and exercising can be fun while educating our children. There are many applications available for smartphones as well as for the computer. These applications offer the ability to count calories and demonstrate how efficient exercise routines can be. With all of this knowledge, weight loss becomes simple numbers, which in turn becomes simple mathematics. But in order to calculate the math accurately, we need the right numbers. This will help parents achieve two things; one is educating their children in simplified math and two keeping their kids healthy and in shape. All of this can be fun for the children while strategically educating them in their development.

Recently, there have been other technological innovations being developed in the fight against childhood obesity and, thankfully, the results appear more than promising.

“MOVband “and the MOVband Challenge is a new program that has been launched in the United States and includes a wristband and a fundraising platform that enables communities to raise money to improve the wellness and health of their children. MOVband’s designer, a teacher and fitness instructor, realized that kids around her did not exercise enough and decided to create a gadget specifically for them. The unique reward system of that program encourages children to do their best and engage in a friendly competition. Every kid starts with a black band and as they walk more, they can get different colors to add to it. Also, what makes MOVband different is the fact that it can be loaned to schools that want to help their students but do not have the budget required to invest in an innovative solution.

“Switch2Health” is another wristband/activity-tracker that uses a reward system in order to motivate children to stay active: it generates a reward code for every 60 minutes of physical activity! Children can wear S2H Reply while walking, running, playing, etc., and when they achieve 60 minutes of accumulated exercise, they are alerted and a code is displayed on the wristband’s screen. Then they can log onto the Switch2Health website whenever they want, log their points and cash them in to win various prizes (movie tickets, MP3 downloads, gift certificates, etc.). On the other hand, if the child doesn’t move enough, a sad face appears on the screen. Parents can also get involved in the program by wearing their own wristband and creating fun challenges for them and their children!

“Step It Up” is an activity program that was designed for the public schools of Boston and incorporated technology, educational feedback and teamwork, in order to raise awareness about the importance of physical exercise. In 2011, nearly 200 elementary students and teachers received their “sneaker chip” pedometers to track their steps and the minutes of their activity, and participate in the program. Each week, the classrooms were provided with Step Reports for each student and also information relating to activity, nutrition and health.

## TECHNOLOGY ADVANCEMENT

*Change your thoughts and you change your world*

– Norman Vincent Peale

There is not only the physical aspect of how technology can affect obesity but also the advancement of technology in manufacturing. Before the introduction of processed foods, people ate healthier natural foods, like fruits, vegetables, and meat without hormones. During this time, the rate of obesity was low. Currently, most of the processed food that is consumed consists of white grain pastas; creamy sauces, fatty and hormone enriched meat products, and foods with high salt, fat, and sugar content. Most processed foods (thanks to modern technology) have high carbohydrates, and lots of artificial ingredients, not to mention, trans-fats that your body can't process or digest. Because of technology, the processed foods are readily available and require very little work

to prepare. So we as humans have access to too much food with little nutritional value. These additives and preservatives often replace all the nutrients and fiber that is removed from the original food source. So while processed food might taste good, it essentially lacks all the beneficial nutrients needed to nourish the body, maintain blood sugar levels, and ensure proper digestion. In addition, the chemicals and synthetic ingredients found in many processed foods are foreign to the body. The body stores anything that the digestive organs can't process, most often in fat tissue. (Santora, 2006). Scientists have shown that this process contributes to the development of obesity, and this is what we are feeding our children.

Teaching our children about eating these processed foods and the effects it has on our bodies, is a good starting point in the education process. Some health experts agree that eating a wholesome plant-based diet is the single-best thing we can do to protect our health. A vegetarian diet that includes plenty of whole grains, legumes, fruits, nuts, seeds and vegetables supports a lifetime of good health. These simple adjustments in our children's diets demonstrate to them that these healthier food options may provide protection against disease and other ailments. Eating a well rounded, plant-based diet also helps treat and reverse obesity, diabetes and a host of other diseases.

*The Mystery of life isn't a problem to solve, but a reality to experience.*

*- Frank Herbert*

In Conclusion, if we educate ourselves and our children about childhood obesity, together we can reshape the environments where children live, play, and learn. If leaders and educators across all levels of society are engaged and willing to help address this epidemic, our children will achieve healthier lifestyles. Physical activity will become an integral and routine part of a child's daily life. Healthy foods will become the most visible, attractive, and easy-to-obtain options anywhere food is sold or served. Schools will become nutrition and wellness centers. If parents enforce a healthier lifestyle at home then many obesity problems could be avoided. What children learn at home about eating healthy, exercising and making the right nutritional choices, will eventually spill over into other aspects of their life. This will have the biggest influence on the choices kids make when selecting foods to consume at school and fast-food restaurants and choosing to be active. Focusing on these causes may, over time, decrease childhood obesity and lead to a healthier society as a whole.

*I spent the first twenty years of my writing career preparing for the mystery genre, which is my favorite literary form.*

*- Sue Grafton*

*I use the language I use to my friends. They wouldn't believe me if I used some high-flown literary language. I want them to believe me.*

*- Adrian Mitchell*

*When we blindly adopt a religion, a political system, a literary dogma, we become automatons. We cease to grow.*

*- Anais Nin*

*Wisdom finds its literary expression in wisdom literature.*

*-Paul Ricoeur*

## References

Anderson B, Chesnay M (2012) *Caring for the Vulnerable* Jones & Barnett Learning

Bagchi D. (2007) *Global perspective on Childhood Obesity: Current status, Consequence* Elsevier Inc.

Benjamin Neelon, S.E., & Briley, M.E. (2011). Position of the American Dietetic Association: Benchmarks for Nutrition in Child Care. *Journal of the American Dietetic Association*, 111(4), 607-615.

Birch, L.L. (1999). Development of food preferences. *Annual Review of Nutrition*, 19, 41-6.

“Childhood obesity” From [ivythesis.typepad.com](http://ivythesis.typepad.com) Accessed on 29<sup>th</sup> November 2011

“Childhood Obesity.” Mayo Clinic. Mayo Foundation for Medical Education and Research. 2 March 2010.

“Childhood Overweight and Obesity.” Centers for Disease Control and Prevention. United States Department of Health and Human Services. 2 March 2010.

Cramer, Deborah. “Handing Down Diabetes: A Multi-Generational Cycle.” *Alive: Canadian Journal of Health & Medicine* Nov 2008. Alt HealthWatch. EBSCO. Santa Clara Univ. Lib. 2 March 2010.

Crepinsek, M.K., Burstein, N.R., Lee, E.B., & Hamilton, W.L. (2002). Meals Offered by Tier 2 CACFP Family Child Care Providers: Effects of Lower Meal Reimbursements. *USDA Economic Research Service, Electronic Publications from the Food Assistance and Nutrition Research Program, E-FAN.*

Dennison, B., Rockwell, H.L., & Baker, S.L. (1998). Fruit and Vegetable Intake in Young Children. *Journal of the American College of Nutrition*, 17(4), 371-378

Dietz WH. Overweight in childhood and adolescence. *New England Journal of Medicine* 2004;350:855-857. Flamenbaum K.R (2006) *Childhood obesity and health research* Nova Science Publishers, Inc

Dodson, E.A., Fleming, C., et al. (2009). Preventing Childhood Obesity through State Policy: Qualitative Assessment of Enablers and Barriers. *Journal of Public Health Policy*, 30, S161-S176.

Fees, B., Trost, S., Bopp, M., & Dzewaltowski, D.A. (2009). Physical Activity Programming in Family Child Care Homes: Providers' Perceptions of Practices and Barriers. *Journal of Nutrition and Educational Behavior*, 41, 268-273.

Killeen, J., Vanderburg, D. & Harlan, W. R. (1978) Application of weight-height ratios and bodyindices to juvenile populations. the National Health Examination Survey data. *Journal of Chronic Disease*. 31,529-537.

Kimm, S. Y. (1995) The role of dietary fiber in the development and treatment of childhood obesity. *Pediatrics*. 96,1010-1014.

Kind, Ron. "Combating Childhood Obesity". 15 September 2010.  
[www.healthiergeneration.org](http://www.healthiergeneration.org)

Kinra, S., Neider, R. P., Lewendon, G. J. (2000) Deprivation and childhood obesity: a cross-sectional study of 20,973 children in Plymouth, United Kingdom. *Journal of Epidemiology & Community Health*. 54,456-460.

Nicklas, T.A., Baranowski, T., et al. (2001). Family and Child-care Provider Influences on Preschool Children's Fruit, Juice, and Vegetable Consumption. *Nutrition Reviews*, 59(7), 224-235.

Olstad, D.L., & McCargar, L. (2009). Prevention of overweight and obesity in children under the age of 6 years. *Applied Physiology Nutrition and Metabolism*, 34(4), 551-570.

Santora, Marc. "Child Obesity Picture Grim Among New York City Poor." *The New York Times*. 6 April 2006.

Schute, Nancy. "What Parents can do to Keep Kids From Snacking Their Way to Obesity."

Smith, Elizabeth. "HEALTHY LIFESTYLES: Childhood Obesity: An Alarming Trend." *International Journal of Childbirth Education* March 2008. Alt HealthWatch. EBSCO. Santa Clara Univ. Lib. 2 March 2010.

Stein, Rob. "Report Urges Nationwide Campaign to Combat Childhood Obesity." *The Washington Post*. 1 October 2004: Pg. A16

Stein, Rob. "Childhood obesity drops dramatically in New York City." *The Washington Post*. 15 December 2011: Pg. A24

Stevens, Emily E., Thelma E. Patrick and Rita Pickler. "A History of Infant Feeding." *The Journal of Perinatal Education* Spring 2009. Alt HealthWatch. EBSCO. Santa Clara

Trost, S.G., Messner, L., Fitzgerald, K., & Roths, B. (2009). Nutrition and Physical Activity Policies and Practices in Family

Visscher and Seidell. "AOA Fact Sheets: Obesity in the U.S."; *American Obesity Association*. April 2011. [www.obesity1.aoa.org](http://www.obesity1.aoa.org)

Wang, Y., & Beydoun, M.A. (2007). The Obesity Epidemic in the United States—Gender, Age, Socioeconomic, Racial/Ethnic, and Geographic Characteristics: A Systematic Review and Meta-Regression Analysis. *Epidemiologic Reviews*, 29(1), 6–28.

Whitaker, R.C., & Orzol, S.M. (2006). Obesity Among US Urban Preschool Children: Relationships to Race, Ethnicity, and Socioeconomic Status. *Archives Pediatrics & Adolescent Medicine*, 160(6), 578–584.

Wilkinson, Michael K. “PCRM Conference Confronts Childhood Obesity.” *Good Medicine* Fall 2009. Alt HealthWatch. EBSCO. Santa Clara Univ. Lib. 2 March 2010. ra Univ. Lib. 2 March 2010.