



Research/"White Paper"

"Nutritilicious"

A Multimedia Educational Solution to Combat Childhood Obesity in America

By Michelle Zeitlin

We are experiencing a huge epidemic in this country, and it's called childhood obesity. Today, one in three young Americans aged 2 to 19 is considered by the experts (according to their standard "BMI," or Body Mass Index, measurement) to be "overweight" or "obese." Over the last three decades, childhood obesity has more than tripled. Obesity among children aged 6-11 years increased from 6.5% in 1990 to 19.6% in 2008, while obesity among those aged 12-19 years increased from 5% to 18.1% (see: <http://www.cdc.gov/HealthyYouth/obesity>).

The health and economic costs are substantial. Childhood obesity causes serious physiological, even life-threatening, health problems. Among the most common short- and long-term physiological effects are: Type 2 diabetes, hypertension, coronary heart disease, hormonal irregularities, bone and joint problems including the development of arthritis, and sleep apnea. Already, childhood obesity is the leading cause of sustained high blood pressure in children, according to the National Institutes of Health (<http://www.nhlbi.nih.gov/meetings/workshops/child-obesity/index.htm>).

It's not just the overweight who suffer from the obesity epidemic. The effects on the US economy indirectly affect all of us through soaring healthcare costs. According to one US Dept. of Health and Human Services study, our healthcare system spends \$70 billion each year to treat obesity and related medical conditions. That amount more than doubles to \$150 billion in a different statistic cited by President Obama in his proclamation on child obesity earlier this month. The problem even threatens our national security, because "being overweight is the No. 1 reason recruits are turned away from the military," according to a Newsweek report, "Culture of Corpulence," published in March, 2010.

No matter how you view it, the point is clear: Child obesity is a problem for this nation, and effective solutions must be found. But how do we reach kids in

a meaningful, effective way? How do we impart the importance of healthy eating and other lifestyle habits that will lead to a better quality of life?

For my Project, I consider just these questions as well as propose my own original, pragmatic, and above all, kid-friendly multimedia solution, which I call “Nutritilicious” (see accompanying document, “Nutritilicious Pitch”). Nutritilicious is intended to be just one solution in a much broader toolkit to combat child obesity. It is also intended to reflect the expert knowledge and understanding that I have gained about childhood obesity and its causes, as discussed in the following pages.

Why Are Kids Fatter Today?

In the vast majority of cases, poor nutrition, poor eating habits and inadequate exercise are the key explanations for childhood obesity. But there are complex sociological and cultural reasons underlying why this is happening on such a large scale, particularly among low-income communities of color, which are hardest hit with the problem. “Obesity is one of the biggest public health challenges the country has ever faced, and troubling disparities exist based on race, ethnicity, region, and income,” said Jeffrey Levi, Director of Trust for America’s Health, as part of a Robert Wood Foundation study on the issue. As President Obama recently put it, “Childhood obesity has been a growing problem for decades. While it has afflicted children across our country, certain Americans have been disproportionately affected,” he said. “Particular racial and ethnic groups are more severely impacted, as are certain regions of the country.” (<http://www.whitehouse.gov/the-press-office/2010/09/01/presidential-proclamation-national-childhood-obesity-awareness-month>). Those “particular groups” include low-income African Americans, Latinos and Native Americans. The harsh fact of the matter is that poor kids by and large suffer among the highest rates of obesity.

In inner city neighbourhoods, there are higher rates of gang activity, crime and violence – so there are far fewer places to play safely outdoors. Inside the home, quarters are relatively cramped, which is not exactly conducive to moving around. In addition, kids need wide open spaces to run free, yet parks with open grassy areas and other such “playgrounds” are relatively scarce. This problem is particularly pervasive in our own backyard, in LA: “Los Angeles has . . . the least accessible park system of any major city in America. Only 30 percent of Angelenos live within a quarter mile of a park, compared

with between 80 percent and 90 percent in Boston and New York. Here in Los Angeles more than 700,000 children do not live within walking distance of a park and the problem is far worse in poor areas of the city.” (From a 2005 campaign speech of then-candidate Mayor Antonio Villaraigosa).

Exacerbating the problem is the fact that unprocessed foods are not readily accessible in America’s inner cities. Grocery stores and produce markets are relatively scarce in these so-called urban “food deserts.”

A California Budget Project study shows that in low-income South and East LA, the number of grocery stores is 3.6 per 100,000 residents – compared with more than four times that many -- 12.4 per 100,000 residents -- in the relatively affluent West Los Angeles area (including Malibu). In this sense, eating healthy is a “food justice” issue that needs to be addressed.

There are many additional causes of childhood obesity, which include:

Processed Foods in an Industrialized Society:

American families are eating more processed foods and less whole, agricultural foods, i.e., in their original raw state, such as fresh fruit and vegetables. (“Processed” according to the Food Protection Program in the Environmental Health Division at the Boulder County Public Health Dept., means “Foods that undergo slicing, dicing, cutting, chopping, cooking, mixing, grinding, smoking, drying, packaging, canning or other procedures that alter the food from its original state.”) Today, processed foods are found everywhere, and as a result, consumers are getting less nutritional value and more fat content in virtually every bite. Food products intended to have a long shelf life in grocery stores come packed with preservatives, color dyes and salts (sodium), all beckoning the unwitting buyer.

Less Activity, More Idleness:

Kids are by and large sitting longer and moving less today than in the past. A main reason is that many kids choose to spend their "down" time playing with technological gadgets – a mostly sedentary activity – instead of, for example, kicking, dribbling, or shooting a ball. These kids are growing up in a time of accelerated technology amid easy access to computers and the Internet, smart phones and video games – all of which means less time spent exercising. Lorraine Lanningham-Foster, a Mayo Clinic researcher, believes that even

without all of the necessary scientific “data” in on the question of effective remedies, it is “fairly obvious” that a solution combining interactive technology (such as in phone applications or video games) with physical activity can be a winning combination for kids. Video games or “apps” on iPhones that encourage kids to use their cognitive and their motor skills together in physical fitness play turns a negative into a positive.

Some companies are already marketing such “learning-while-burning” gaming opportunities (my term). Applying new technologies available to encourage old-fashioned physical play, companies are developing exercise games that stimulate kids in a beneficial way. The company, Wii Game, for example, offers a series such as My Fitness Coach2, a video game line offering “5 types of challenges: dance, boxing, football, cardio, and army.” One advertisement for this product says it will “help gamers lose weight and stay in shape...” Another game, by the same company, the Wii Balance Board, turns a stagnant, inside activity – video gaming – into a virtual outdoor ski slope. It encourages gamers to strengthen muscles important for down-hill skiing and slalom courses. Advertisements for the game promise, “Get fit with more than 40 activities and exercises, including strength training, aerobics, yoga and balance games.” Still another interactive game available on the market today is “Dance, Dance Revolution,” in which kids dance on a platform while following a map of basic patterns and dance steps on the screen. Still, for families with no disposable income to buy gaming products such as these, there will likely remain a digital divide in which poorer families have less access to the next generation of fitness tools. One possible solution could be the creation of public-private partnerships in which products such as these are marketed and donated to low-income areas via corporate sponsorships and tax write-offs. I may look into such possibilities farther down the line for “Nutritilicious.”

The Boob Tube:

Television plays a significant role in childhood obesity for at least two reasons that I was able to find: 1) The classic “couch potato” explanation: The period during which the TV is on, the kids are sitting and passively watching it – and therefore not exercising. 2) The other somewhat more provocative explanation (published in the American Journal of Public Health in February, 2010, by researchers with the UCLA School of Public Health) shows that TV is associated with fatter kids not because of the time spent watching, but

because of the content of the commercials aimed at attracting these impressionable young minds. The study, conducted by Frederick J. Zimmerman and Janice F. Bell, is said to be the first to break down TV shows that kids watch to determine whether different kinds of content have different effects on obesity. They found evidence that this is, in fact, the case because of the filler between the TV shows, i.e., the commercials. According to the Zimmerman-Bell study, by the time they are 5, kids have seen an average of 4,000 TV commercials for food each year. During Saturday morning cartoons, they see an average of one food commercial every five minutes. Almost all of these commercials – up to 95 percent – are for foods with low nutritional value. At the same time, what they called “non-commercial viewing,” such as watching DVDs or educational TV, had no significant association with obesity (<http://www.ph.ucla.edu/pdfs/Zimmerman.pdf>).

The profit factor:

While the Zimmerman study is interesting, it's not surprising. Advertising to kids as young as three years old is big business in America. Advertisers spend an estimated \$2 billion a year to promote food products to young audiences. According to another study published in the journal, *Pediatrics* (<http://pediatrics.aappublications.org/cgi/reprint/118/6/2563>), “Young people view more than 40,000 ads per year on television alone and increasingly are being exposed to advertising on the Internet, in magazines, and in schools. This exposure may contribute significantly to childhood and adolescent obesity, poor nutrition, and cigarette and alcohol use, later on in life.” Significantly, however, there are solutions: “Media education has been shown to be effective in mitigating some of the negative effects of advertising on children and adolescents.” Nutritilicious is designed to be one of these media mitigators.

Unhealthy food products are marketed directly to kids with catchy slogans, cartoons and bright packaging – and some come with little “surprises” inside the packaging as an additional incentive. The sugar-filled “energy drinks” are another example. Most experts say the high levels of electrolytes and carbohydrates in these beverages may boost athletes for high-performance, high-intensity workouts – but that they are not beneficial for the average kid. These drinks often are marketed with celebrity athlete endorsements that attract young sports fans. In addition, the products are sold freely to minors at

major sports venues, school gymnasiums and community recreation centers – again, sending the wrong message to kids.

Supersizing:

Americans tend to think that bigger is better in just about every category (except stomach girth, ironically). So just what is a “normal” portion when TV ads are tempting you to eat “all you can eat” and Whoppers and Big Macs come with fattening and processed patties, cheese and mayonnaise, plus a side of extra-large fries? How are we to forgo the bargain 32-ounce “Big Gulps” at the 7-Eleven? These may be exceedingly low in nutrient value, but they are popular because they are big, tasty, affordable, fast, and convenient.

Schools Don’t Make the Grade:

According to the USDA in *Choices, the Magazine for Food, Farm and Resource Issues*[BM1], “neither state nor federal school lunch programs are helping matters: “School meals are higher in total fat, saturated fat, and sodium than is recommended.... Lunch entrees, many of them commercially prepared items such as pizzas, chicken nuggets, or burritos, were leading sources of fat and sodium, suggesting a need for improved food products to be made available for school food service.”

Tellingly, snacks sold on school grounds in vending machines are actually being called “competitive foods,” since the brands are competing for business.

It appears that in this age of limited government regulation, our schools are being subjected to an “anything goes” Wild West marketing mentality. Selling snacks and sodas to school kids is clearly not in the kids’ best interests, but can companies in a free market economy really be blamed for trying to profit off this “market segment?” Or should public schools be off limits to corporate interests that conflict with those of kids’ health? The problem is even more complicated when you consider the state of public school funding today. Schools’ cash flow crisis means that even PTAs and school clubs are being “forced” to raise money for sports uniforms, arts and music education, etc., through school snack bars and junk food vending machines. Unfortunately, school kids end up consuming empty fat, calories and sugar that is antithetical to their optimal academic and athletic performance. Since virtually no child would rather buy an apple over a bag of Doritos, maybe the solution here is in

restricting the snack choices given to kids and finding our school revenue solutions elsewhere.

Now That We Know the Causes, What Do We Do About It?

The good news is that the childhood obesity problem can be reversed with the right commitment and solutions. That is why First Lady Michelle Obama has taken up this cause, launching a major new initiative this year, called "Let's Move!" This initiative is designed to draw national attention to childhood obesity and to encourage kids at every stage of the child's life to eat fresh, healthy foods and to be "a player," as she calls it – i.e., physically active.

Early this month, President Obama furthered the First Lady's mission by proclaiming September 2010 as the first "National Childhood Obesity Awareness Month." He noted, "There are concrete steps we can take right away as concerned parents, caregivers, educators, loved ones, and a Nation to ensure that our children are able to live full and active lives." The President also has created a Task Force on Childhood Obesity "to marshal the combined resources of the Federal Government to develop interagency solutions and make recommendations on how to respond to this crisis." The Task Force also has produced a report containing comprehensive recommendations to help solve the obesity problem, including "providing healthier food in schools, ensuring access to healthy affordable food, increasing opportunities for physical activity, empowering parents and caregivers with better information about making healthy choices, and giving children a healthy start in life." The President noted in a White House news release, "One of the greatest responsibilities we have as a Nation is to safeguard the health and well-being of our children."

In addition, the new health care law that the President has spearheaded, the Affordable Care Act, includes a number of tools for stamping out childhood obesity. Among them, "all new health insurance plans will be required to cover both screenings for childhood obesity and counselling on nutrition and sustained weight loss, without charging any out of pocket costs." The Act also requires businesses such as large restaurants to provide "visible nutritional information about the products they sell," to help Americans make healthier decisions.

Fats: Fuel or Foul?

When it comes to food choices, most nutritionists agree that overweight kids should be eating leaner and less – without compromising their nutritive requirements. The 2005 U.S. dietary guidelines recommend that kids ages 4-18 get between 25-35 percent of their daily calories from fat. The “Kidshealth.org” website, touted as the “most-visited site on the Web for information about health, behaviour and development from before birth through the teen years,” and funded by a private non-profit organization, includes explanations about food contents that can be easily understood: “Fats, or lipids, are nutrients in food that the body uses to build nerve tissue (like the brain) and hormones. The body also uses fat as fuel. If fats that a person has eaten aren't burned as energy or used as building blocks, they are stored by the body in fat cells. This is the body's way of thinking ahead: By saving fat for future use, it plans for times when food might be scarce.” The site also notes, “Although all types of fat have the same amount of calories, some are more harmful to your health than others. Two of the most harmful fats are saturated fat and trans fats... which raise blood cholesterol levels, increasing a person's risk of developing heart disease.”

Some experts, such as Tom Frieden, who was appointed to be Director of the Centers for Disease Control and Prevention by President Obama, believes that imposing a new tax on sugar-sweetened energy drinks and sodas would be an immediate deterrent to teenaged soda drinkers, and might reduce consumption of these beverages. A tax initiative like this was part of reforms in the tobacco industry some years ago, and was shown to help curb teenagers' consumption of cigarettes. The idea appears to be gaining momentum as just such a soda tax is being touted by New York City Mayor Michael Bloomberg, who likes the idea of introducing taxes on sugary drinks to help reduce obesity rates and accompanying medical costs – perhaps because this would also raise badly needed city revenue, according to a *New York Times* report in March. The mayor “stepped up his call for the Legislature to pass a penny-per-ounce tax on soda to stave off major service cuts to education and health care,” it notes.

Sensing change in the air, America's food industry is attempting to fix its public relations problem about the junky products it promotes. Apparently hoping to ward off new government regulations, the industry has taken some steps voluntarily to reduce the harmful food ingredients on the market: “We have changed the recipes for more than 10,000 of our products to reduce fat,

calories, sugar, and sodium," said a spokesperson with the Grocery Manufacturers Association, Scott Faber, recently.

Another industry representative is quoted In a recent *Newsweek* report as saying, "Salads are now routinely offered at fast-food chains; KFC introduced grilled chicken last year (one grilled wing, 80 calories; one extra-crispy fried, 190). Coke debuted a mini 7.5-ounce can in December. And the beverage industry has substituted high-calorie soft drinks with lower-calorie, more nutritious, drink options in some schools." But "lower-calorie" diet solutions that ignore nutritive requirements are not advisable, either, according to Sarah Armstrong, a pediatrician at Duke University Medical Center. She says "no" to just eating smaller amounts of bad stuff. Diet sodas may save on calories, she points out, but "they're far from nutritious."

Charles Attwood, in his book, *Low-Fat Prescription for Kids*, says that major sources of "unhealthy" saturated fats in Western diets are dairy and meat products – both of them virtual food staples in America. Dr. Attwood recommends that kids eat more rice, beans and fiber, but limit their consumption of whole milk and meats. Such recommendations are not appreciated by powerful lobbying interests such as the Beef Industry Council and the National Dairy Council, which are not surprisingly pushing the "special" advantages of milk and red meat in their marketing campaigns.

Conclusion:

As with most any public health problem, there are many different ways to tackle the childhood obesity challenge that this nation faces. An assortment of seemingly positive steps in both the public and private sectors are increasingly being taken. But as this research paper shows, we have a long way to go.

I agree with recognized body and mind expert, Jennifer Edwards, who advised me in an interview to “teach fun things first.” Kids will look forward to being active physically if they find the right kind of exercise to fit both their needs and their likes. Therefore, I modestly offer “Nutritilicious” as one possible solution in the needed arsenal, which I will no doubt develop further as I continue to apply the knowledge I have gained from experts in the fields of physical education, fitness, and nutrition. I believe that childhood obesity solutions, to be effective, must help to engage the kids to take responsibility for their own bodies. This must be done in a kid-friendly format that is entertaining and educational – not preachy or authoritarian. Nutritilicious is designed to entice kids to take part, and to be, as Michelle Obama says, “a player.”



For those reasons, I will be introducing a game that encourages aerobics and anaerobic activity, teaches hand and eye coordination, and offers both individual and team-oriented challenges, such as in “Hip Hop Scotch.” In another example, African drums encourage movement, along with rhythm patterns that kids can choose to help create, “tap out,” play back, or repeat – all the while moving to the sounds. Nutritilicious seeks to reverse child obesity trends by engaging young people in an innovative, interactive multimedia platform that they will not regard as a drag or a pain – but rather as a stimulating, interactive fitness and nutrition program. It also integrates lesson plans with movement from dance, sports and yoga. The intention is to teach, but not to preach, the importance of nutrition, healthy eating habits, and physical fitness – all while getting the kids to get up and move in real time, right on the spot.

President Obama believes we will win the fight against fat: “I am confident that we will solve this problem together and that we will solve it in a generation.” But no doubt, it will take continued and concerted efforts by parents, the public schools, health officials, and local, state and federal governments to turn around the childhood obesity crisis for good. There are already some encouraging signs: “In the U.S., new government data show an overall plateau of high BMIs in kids over the last 10 years,” reported *Newsweek* in March. Yet, “even without further increases in childhood obesity, the toll of the epidemic will mount for decades to come,” David Ludwig, director of Optimal Weight for Life program at Children's Hospital Boston, predicts. Perhaps above all, I believe that everyone must be educated

to enact fitness and health changes for themselves – and my hope is that for some kids at least, “Nutritilicious” will play a part in driving such transformation.