





Childhood Obesity: Causes, Ramifications & Solutions.

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“The physical and emotional health of an entire generation and the economic health and security of our nation is at stake.” - First Lady Michelle Obama.¹

The prevalence of diabetes, hypertension, and other obesity related comorbidities in the United States and internationally is growing at an alarming rate.²

While this is probably not a surprise to readers of Nutricula, it may surprise you to learn that these issues are not limited to adults. Childhood obesity is prevalent and associated with its own health risks. This article will examine the issue of childhood obesity.

Different metabolisms: my son, wife and I.....

For much of my childhood and adult life, I have been overweight. In fact, I've always seemed to be the type of person who could smell food and gain weight. My wife on the other hand, was slim and trim during childhood and beyond—and it certainly wasn't because of her stellar dietary practices. When we meet, and for years after, she was a junk-food junky (and still didn't gain any weight). Although I eventually lost 85 pounds, it was an arduous, albeit worthwhile, process—and still I can gain weight easily if I am not careful.

When my wife became pregnant with our son, I fervently hoped that he would be born with her metabolism rather than mine. I didn't want him to go through childhood as a fat child, having to suffer the taunts of other children as I did. As chance would have it, he did end up with her metabolism, and at thirteen he is slim and trim, for which I am incredibly grateful. [By the way, 10 days after giving birth my wife slimmed down to five pounds less than her pre-pregnancy weight—and she didn't even diet or exercise to make this happen! And yes, I do envy her metabolism.]

Statistics.....

Although my son escaped the fate of being an overweight child, many other children are not so lucky. In the United States, about 20% of children and adolescents aged 2–19 years are obese, and another 18% are overweight.³ Children are considered overweight when their body mass index (BMI) is equal to or greater than the 85th percentile, but less than the 95th percentile, for their age and sex. They are considered obese when their BMI equals or exceeds the 95th percentile.⁴

According to the Centers for Disease Control and Prevention, childhood obesity has both immediate and long-term effects on health and well-being. The immediate health effects for obese youth include being more likely to have risk factors for cardiovascular disease, such as high cholesterol or high blood pressure. In a population-based sample of 5- to 17-year-olds, 70% of obese youth had at least one risk factor for cardiovascular disease.⁵

Likewise, obese adolescents are more likely to have prediabetes, increasing the risk for development of full-blown diabetes.⁶⁻⁷

In addition, children and adolescents who are obese are at greater risk for bone and joint problems, sleep apnea, and social and psychological problems such as stigmatization and poor self-esteem.⁸⁻⁹⁻¹⁰

The long-term health effects include that children and adolescents who are obese are likely to be obese as adults.¹¹⁻¹²⁻¹³⁻¹⁴ and are therefore more at risk for adult health problems such as heart disease, type 2 diabetes, stroke, several types of cancer, and osteoarthritis.¹⁵

In one study, children who became obese as early as age 2 were more likely to be obese as adults.¹⁶

Furthermore, overweight and obesity are associated with increased risk for many types of cancer, including cancer of the breast, colon, endometrium, esophagus, kidney, pancreas, gall bladder, thyroid, ovary, cervix, and prostate, as well as multiple myeloma and Hodgkin's lymphoma.¹⁷

Causes of childhood obesity.....

In describing my personal family situation, I eluded to the fact that there is a genetic component to childhood obesity. This is borne out by a meta-analysis.¹⁸ of 14 studies which revealed that two loci (i.e., specific locations of a gene or DNA sequence on a chromosome) were found to be associated with childhood obesity. However, genetics alone is not the whole story. If it were, then childhood obesity would not have more than tripled in the past 30 years.¹⁹

The fact is, childhood obesity is influenced by too few calories expended for the amount of calories consumed, as well as variations in genetic, behavioral, and environmental factors.²⁰⁻²¹ One such behavioral factor is the lack of exercise. According to the Center for Disease Control and Prevention, children need 60 minutes of moderate to vigorous exercise per day every day of the week.²²

However, a long term study by the National Institutes of Health reported that childhood activity dropped sharply between the ages of 9 and 15.²³

In addition, socioeconomic disparities may be a relevant environmental factor for childhood obesity. This was seen in a study.²⁴ conducted in Massachusetts which found that from 1999 to 2003, the obesity prevalence was fairly stable among both boys and girls. From 2004 to 2008, the obesity prevalence substantially decreased among both boys and girls. The decline in obesity prevalence during 2004-2008 was more pronounced among children insured by non-Medicaid health plans than among those insured by Medicaid. The researchers suggested that the smaller decrease among Medicaid-insured children may portend widening of socioeconomic disparities in childhood obesity.

This is consistent with other research²⁵ which found that a poor diet from a budget supermarket is a less expensive way to feed children providing a healthy alternative diet. This suggests that cost is a possible barrier to healthy eating for the most economically disadvantaged.

The solution.....

There is no single quick-fix to the problem of childhood obesity. There is, however, a solution requiring a multi-faceted approach which involves a whole family lifestyle change.

The reason for including the whole family is that it will be extremely difficult, if not impossible, to expect a child to make the necessary changes to slim down while his/her family continues to follow “business-as-usual” lifestyle practices. The first and most obvious step is to make dietary changes.

Perhaps the best long-term approach to doing this is to adopt a “slow-carb” diet.

The slow-carb diet.....

In a study from the American Journal of Clinical Nutrition,²⁶ a slow carbohydrate or slow-carb diet focusing on low-glycemic index foods was found to be far more effective than traditional low-carb, low-fat or low-calorie diets in losing weight and preventing heart disease (both of which can be complications associated with diabetes).²⁷

In this study, 11 obese young adults did not avoid carbs or fats, nor did they count calories or eat prepackaged foods. Despite this, these slow-carb dieters lost more weight than 12 of their peers on a conventional low-fat diet. In addition, the slow-carb dieters lowered their risk of heart disease. Furthermore, they achieved all of this eating plenty of satisfying foods.

The slow-carb diet focused on low Glycemic Index foods, and appeared to be easier to follow than diets restricted in either fat or carbs. The base of the diet was to eat plenty of fruits and vegetables cooked or served with healthful oils. Next are reduced-fat dairy foods, lean meats and fish, nuts, and beans. Following,

and meant to be eaten less frequently, are the whole, unrefined grains and pastas. Last of all, and meant to be eaten sparingly if at all, are refined grains (white bread, junk-food cereals, etc.) potatoes, and sweets. In this study, the obese subjects following the slow-carb diet were told to eat non-starchy vegetables, fruits, beans, nuts, and dairy products. They were instructed to eat carbohydrates with protein, and healthful fats at every meal and snack. And they were also instructed to eat until they were full and to snack when hungry.

The other obese study subjects were put on a conventional, low-fat/low-calorie diet. Both groups were asked to exercise regularly and were given lifestyle counseling.

Even though the slow-carb dieters were able to eat as much as they wanted and to snack when hungry, they lost fully as much weight as those told to cut back on fat and to cut back on calories; and the slow-carb dieters did better in terms of heart disease risk reduction.²⁸

After 12 months on the diets, the slow-carb group lost 7.8% of their body weight (16 lbs) compared with 6.1% (11 lbs) in the low-fat group. Likewise, triglyceride levels were down 37% in the slow-carb group compared with 19% in the low-fat group; (high triglyceride levels are a risk factor in heart disease). Levels of a factor that increases blood clots (plasminogen activator inhibitor), were also decreased by 39% in the slow-carb group but increased 33% in the low-fat group. **Considering that blood clots in the heart arteries are usually the cause of heart attacks, this is a significant improvement.**

Advice¹¹ for following a slow-carb diet includes:

- Aim to eat carbohydrates at every meal.
- Aim for the low-GI breakfast cereals (oats, muesli, All-Bran).
- Aim for heavy-grain breads, sourdough breads, and stone-ground breads.
- Eat lots of legumes (even baked beans).
- Do not be afraid to eat pasta, Basmati rice, or couscous (whole grain).
- Have two to three servings of low-fat dairy a day.

Eat nine servings of fruit and vegetables a day (3-5 for children).

Do not avoid any kind of fruit or vegetable except potatoes. Replace white potatoes with sweet potatoes, corn, and other healthy foods.

Eat lean meat, fish, and chicken.

Exercise.....

Exercise for children does not mean working out in the gym. Rather, it means making time for 60 minutes of play with moderate to vigorous activity every day to grow up to a healthy weight. If this sounds like a lot, contrast it with the fact that 8 to 18 year old adolescents spend an average of 7.5 hours a day using entertainment media, including (e.g., TV, computers, video games, cell phones and movies). Only one-third of high school students get the recommended levels of physical activity.



According to Letsmove.gov²⁹:

To increase physical activity, today's children need safe routes to walk and bike ride to school, parks, playgrounds and community centers where they can play after school, and activities like sports, dance or fitness programs that are exciting and challenging enough to keep them engaged.

Conclusions

We can't change our children's genetic inheritance, but we can make lifestyle changes for the entire family which can have a positive impact on helping to promote a healthy weight for all.



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