Healthy Portions = Healthy Living

The effect portion sizes have had on the obesity epidemic, and how the Volumetrics Diet might be a way to downsize.

Tag Words: portion size; obesity; Volumetrics Diet; Diet; Healthy Living

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Summary (JL)

The rise in obesity has been due to many contributing factors including lack of exercise, unhealthy eating, uneducated individuals, our nation’s fast-paced lifestyle, and portion sizes. There is also some scientific evidence that the cause of obesity may also have some genetic factors. Obesity has slowly been on the rise and approximately 200 million adults are considered to be overweight or obese in this country. According to the Center for Disease Control, obesity is the second preventable leading cause of death only to smoking. One of the largest contributors to obesity is the size of the portions we consume, not only at home, but also in restaurants and in prepared foods. By providing the community with an educational poster about correct portion sizes, individuals will learn how to cut back on the amount of food they are consuming. The poster will not only be available to individuals on the web, but also as an educational tool for teachers to display to their children within the classroom.

Video Link

Healthy Portions Equal Healthy Living: http://youtu.be/uj7y3ff9-AE
The Issue: Obesity

What is Obesity? (JH)
Obesity is perceived to be excessive body fat. A person is considered obese when his or her weight is 20% or more above normal weight. The most common method for determining excess body fat would be by using the BMI. BMI stands for Body Mass Index, it is a tool used to estimate an individual’s relative body fat calculated from his or her height and weight.

![Graph](http://example.com/graph.png)

**Figure 1: Chart which is used to determine individuals Body Mass.**

According to researchers at the Centers for Disease Control Prevention, “obesity is now second only to smoking as a cause of mortality in the United States… Obesity has been linked to heart disease, colon cancer, stomach cancer, breast cancer, diabetes, arthritis, high blood pressure, infertility and strokes.” Obesity is an issue that affects all ages, races and gender. Obesity has become a growing global issue as well as a problem within the United States. Obesity has reached epidemic proportions in the United States and threatens to impact the health and well-being of numerous children and adolescents. Obesity is caused by over excessive eating and little exercise.

In today’s society some of the reasons why obesity has rapidly increased in the last few decades is due to… increasingly cheap, high calorie food (example, fast food — or “junk food”), prepared foods that are high in things like salt, sugars or fat, combined with our increasingly sedentary lifestyles. One reason in particular Obesity is a major concern in the United States is due to fast food. Fast food is not cooked in a healthy and productive manner. This is not beneficial to ones health, not only does these types of food have a high dosage of saturated fatty acids, and can clog arteries, but this also raises the rate for obesity.

A major cause in such unhealthy weight gain is poor eating habits and fatty foods like fast food as well as junk food. Junk food refers to items that taste good but lack nutritional value and are often very high in calories and fat. Chips, soft drinks, candy bars, cookies, and many meals purchased at fast-food restaurants fit these criteria. People, who eat, more fast food and junk food intake more calories and more fat. The Obesity Society states, “Obesity is a disease that affects over one-third of the adult American population (approximately 72 million Americans). The
The number of overweight and obese Americans has increased since 1960... Today, 66.3 percent of adult Americans (about 200 million) are categorized as being overweight or obese.\textsuperscript{5} Not only is obesity affecting adults, it also affects children as well.

Obesity is an issue that affects more children and adults in the United States daily. The percentage of children and adolescents in this country is steadily increasing. Obesity is a chronic condition that affects all people. Overall there are a variety of factors that play a role in obesity. Factors that may lead to obesity can be biological, behavioral and environmental.

Genetics, behavior and the environment can increase the risk of weight gain. Some science shows that genetics plays a role in obesity. According to World Now Medical Guide, “Genes can directly cause obesity in disorders such as Bardet-Biedl syndrome and Prader-Willi syndrome. However genes do not always predict future health… In some cases multiple genes may increase one’s susceptibility for obesity and require outside factors; such as abundant food supply or little physical activity.”\textsuperscript{5} This is why in many cases genes and behavior may both be needed for a person to be overweight.

Genetics is not the only cause of obesity. It is often said that, if one or both of your parents are obese, your chances of being obese are greater. This may be due to shared genes or to a shared environment, which may include high-calorie foods and inactivity. In fact according to Pediatrician Hill James, "Despite obesity having strong genetic determinants, the genetic composition of the population does not change rapidly. Therefore, the large increase in . . . [obesity] must reflect major changes in non-genetic factors." Another factor that can lead to obesity would be the accessibility to fast foods and pre-packaged foods. While such foods are fast and convenient they also tend to be high in fat, sugar, and calories. Choosing many foods from these areas may contribute to an excessive calorie intake. Portion size has also played a role in obesity. People tend to eat more when they feel hungry and eating larger portion sizes. This results in increased calorie consumption. If the body does not burn off the extra calories consumed from larger portions, fast food, or soft drinks, weight gain can occur.

As you people get, they tend to be less active. As you age the amount of muscle in your body decreases. This lower muscle mass leads to a decrease in metabolism. In which these changes also reduce calorie needs. Your metabolism dictates how effectively the calories you take in are used. Weight gain is usually different from person to person. Each person has to take care of their own calorie needs. Therefore, if your caloric intake is not decreased as you don't decrease your caloric intake as you age, you can will more then likely gain weight.

People also tend to over eat when they are stressed or feeling different emotions. Many people eat in response to negative emotions such as boredom, sadness, or anger. It is often viewed in the media that women who tend to over eat are dealing with symptoms of depression and low self-esteem. Some people also go on binge eating episodes, which can turn into an eating disorder. During a binge eating episode, people eat large amounts of food and feel that they cannot control how much they are eating.
Another underlying factor that can lead to Obesity would also include sleep deprivation. New research has found that, “Adults under age forty who get less than five hours of sleep a night have higher concentrations of visceral fat. This type of fat, which wraps itself around internal organs, is much worse for your health than a double chin or cellulite on your thighs⁸”. Other studies have shown that sleep deprivation disrupts everything from blood sugar control to food cravings.

Weight gain is also a result of extra calorie consumption, decreasing calories used (physical activity) or both. Personal choices concerning calorie consumption and physical activity can lead to energy imbalance. This is why it is important that people practice eating healthy on a daily basis. Young people as well as adults need to practice healthy lifestyle habits. This would include eating healthy foods and doing more physical activities.

Complications of Obesity (JL)

Although obesity can lead to bullying and self-esteem issues, especially among children, the bigger problem is the increased risk of health risks associated with obesity. There are many medical conditions related to having excess body fat including hypertension, Type 1 and Type 2 diabetes, cardiovascular problems, and respiratory issues. Type 2 diabetes is becoming an increasing problem for adults as well as children. “Approximately 85% of people with diabetes are type 2, and of these, 90% are obese or overweight⁹”. Although all this medical conditions may not affect an obese individual at one time they do play a part in ones everyday life.

The excess body fat carried around by individuals can lead to osteoarthritis, near the knees and hips because of the increased wear and tear of the weight bearing joints. Sleep apnea is also a common complication among individuals, which is caused by fat deposits in the neck area that lead to blockage of the air passageway. The heart also begins to function improperly, which can result in hypertension and stroke¹⁰. Many of these issues are life-threatening, but are reversible with reduction in weight through controlled calorie intake and exercise.
The medical condition, associated with obesity, which has been on the greatest rise, is Type II diabetes. Type II, also known as non-insulin depend diabetes mellitus (NIDDM), has been steadily affecting many Americans. The disease is associated with the body unable to produce enough insulin compared to the amount of glucose present. The excess glucose is usually excreted through the urine, which is one sign of diabetes. Type II diabetes can easily be controlled through weight reduction, and in extreme cases the individual may need to inject daily insulin shots or a prescription drug.\(^{11}\)

State-Wide and National Programs Addressing Obesity (JL)

The obesity epidemic has been sweeping the nation for the last few years and many individuals have developed programs to turn this national problem around. Many programs have been set up both state and nationwide. There are many factors that contribute to the state of obesity our country is currently facing. Lack of physical activity, fast-paced life style, the economy, and especially the eating habits of Americans are a few of the contributing to obesity today. According to the CDC, only 28% of those living in New Jersey eat fruits and vegetables at least five times a day.

Shaping NJ is a state-wide program under the Office of Nutrition and Fitness. The plan of Shaping NJ addresses six different target behaviors to control obesity and other chronic diseases. Some of the behaviors they plan to address are increasing the consumption of fruits and vegetables, increase physical activity, decrease television watching, and decrease the consumption of sugar-sweetened beverages and energy-dense foods. They plan to focus their plan on the communities who are surveyed to have the greatest need for action.\(^{12}\)
The National Alliance for Nutrition and Activity (NANA) promote healthy eating and physical activity within legislative and executive branches of government. The NANA’s policy priorities include strengthening the National School Lunch Program, Model Local School Wellness, and strengthening programs both nationwide and state-wide regarding nutrition, physical activity, and obesity. Regarding the school food policy, they have worked to change the food that is served outside of school meals. Foods in after school programs and vending machines are low in nutrition, high in fat and sugar, and slowly increasing the rate of childhood obesity. The first lady of the United States, Michelle Obama, has become very involved in promoting healthy eating habits and physical activity around the nation. She developed a program, Let’s Move, which focuses on attacking the childhood obesity epidemic. The campaign looks to improve food in schools, improve access to healthy, affordable foods, increase physical activity, and educate parents and caregivers on nutrition and exercise. The Let’s Move website provides facts and tips to healthy eating and exercise.

Many state and national programs have been developed to try and overcome the obesity our country is facing today. The problem with overweight and obese individuals in America may not only be what we are eating or how much we are exercising, but another large contributing factor maybe how much we are eating. Allowing ourselves to consume cheeseburgers and French fries once in a while is ok, but the proportions and quantities of the cheeseburgers and shakes is becoming a daily event for many American families. Informing and educating children and adults about portions and the nutritional content of the foods they are consuming can really impact and change the way many Americans are eating.

**Portion Control (FB)**

As mentioned above, the prevalence of overweight and obese children and adults have sharply increased. Weight gain isn’t just from one cause, the basic cause of obesity is when an excess of energy intake is more than the expenditure of energy. The nutrition of people is definitely a cause of obesity, but at the root of the nutrition aspect of obesity is the rise in portion sizes. Generally, Americans are consuming more energy than they have in the past. There are many contributions to this increase. One of which is the rise in the amount of food eaten away from home. In the late 1990s, about 47% of an American’s total food consumed came from outside the home. That’s just less than half of all the food consumed by people. This wouldn’t be so bad if the food was more nutritional and the portion sizes of these unhealthy foods we’re decreasing, not increasing.
As seen in the above graph, portion sizes in the past 30-40 years have dramatically increased. Increasing portions provides two problems, people generally eat more energy that is not needed, and by providing larger portions, it’s increasing the people to eat more all the time, not just occasionally\textsuperscript{15}. However, as portion sizes increase, the information available about portions is becoming less and less accessible. Proper portion sizes are only listed on food labels of purchased foods, according to the US Food and Drug Administration (FDA)\textsuperscript{15}. The US Department of Agriculture (USDA) suggests choosing “sensible portions”, but these are not adequately defined\textsuperscript{15}. As seen in the graph below however, the food portions of many common food items, like pasta and cookies, is greatly exceeds the standards provided by our government. These foods are already prepared and ready-to-eat, and are food that has been prepared at outside eating establishments, such as fast food chains and independent shops.
Portion sizes in America are becoming out of control. The marketplace portion sizes have significantly increased since the 1980s, as seen above, and have greatly exceeded the US government standards of portions. There are many reasons for the increase in portion sizes such as the tremendous growth of the food service industry and the fact that most people want more food for their money. For example, at 7-Eleven, their 32oz. Gulp drink ends up costing 2.7 cents/oz. which is about half the price of the 16 oz. Gulp, which is about 5 cents/oz. However, what people don’t understand is that although they may be saving money they are doubling their caloric intake. In order to end obesity, people need to stop consuming as many calories, and this will only be done with either lowering the portion sizes or changing what kind of foods people are eating in large amounts.

Volumetrics (FB)
One problem people often find with dieting is still feeling hungry and not satisfied when cutting calories. Most people believe that in order to lose weight, the caloric intake must be lowered, which must mean eat less food. This isn’t necessarily the case. A dietician, Barbara Rolls, Ph.D., suggests instead of counting calories for your diet, to instead consider just the energy density of the foods they
are consuming. She is the founder of the Volumetrics Eating Plan, which instead of looking at the amount of calories of a particular food, looks at the energy density. This diet recommends eating lower energy density foods over foods that are high in energy density, and not have to change the amount of food that is eaten. Energy density of foods is figured out by calculating the calories per gram of that food. Foods that have low energy density are typically bigger and bulkier, but generally have fewer calories. They are typically vegetables, which are high in fiber and water content. Between the larger amounts of food you can consume because of the low caloric content, and the high water content of these low energy dense foods, dieters will immediately feel full after eating a meal.

There are various tricks and methods that can be used to improve the nutritional quality of a meal and lower its energy density. For example, take a serving of traditionally made macaroni and cheese. As seen below, it usually consists of about 540 calories. However, if you make macaroni and cheese the Volumetrics way, you can lower it down to about 315 calories. This can happen by adding in lots of vegetables, such as tomatoes and spinach, use fat free milk, light cream cheese and butter instead of whole milk, full-fat cheddar cheese and margarine.

![Figure 5: Traditional Macaroni & Cheese vs. Volumetrics Macaroni & Cheese.](image)

In order to cut the calories but still be able to eat the same amount of food as before, foods with higher energy density must be replaced with healthier versions. As mentioned above, this usually means foods with high fiber and water content, which are typically fresh fruits and vegetables. However, these vegetables shouldn’t be fried or breaded which adds unnecessary calories. Simply steaming or sautéing vegetables will provide enough taste for enjoyment. A typical healthy eating plan with the Volumetrics diet stresses the importance of eating fruits, vegetables, whole grains and low-fat or fat-free dairy products. It also includes eating lean proteins such as poultry, fish, nuts and beans. All of the foods mentioned above have an energy density of 0.6-1.5 calories per gram. Eating foods such as these should lower the amount of saturated and trans fats eaten, and make you lose weight.

The Volumetrics Diet Plan is an excellent way to fight the increasing portion sizes of today’s society. It doesn’t lower the amount of food eaten in any way, letting people still feel full and satisfied after meals, unlike other diets. However, Volumetrics increases the amount of fruits and vegetables people eat, replacing the high calorie foods with foods that are healthier and lower calories. Even without lowering the amount of food eaten, people following the Volumetrics diet still lose weight. This type of dieting plan is exactly the type of plan needed to fight obesity.
The Service Project: Poster and Information

Our plan to fight obesity is by creating a poster with plenty of information about the rise in portion sizes, how big portion sizes should be, and healthy tips for eating right throughout a typical day. This poster also includes pictures of a meal that has more calories, but less food, and a salad with less calories and more food. We plan on making this poster available online through poster distribution agencies with the intention of making this information and poster available to the public. The poster will also be distributed to agencies that provide teachers with materials, in the hope that these posters will be printed out and posted around schools and in classrooms to also help end childhood obesity. We hope our poster will be used around the nation to help teach people the importance of portion sizes and what they can do to live a healthier, more nutritional life.

We plan on sending our poster to Teacher Created Resources, an educational publishing company. They offer lesson plans and posters which can be directly printed from the computer. If we have our poster available on the web, we hope to be able to distribute them throughout the nation quickly.
References

2. Center for Disease Control Prevention
5. The Obesity Society
Editorials

Obesity and Portion Control
By: Farah Benarba

The sizes of portions in the United States have increased dramatically in the past 30 years, with the average portion sizes in soft drinks increased from 12.2 oz. to 19.9 oz. As the sizes of our portions have increased, the rates in obesity in this country have as well. However, three Rutgers students, along with their professor Julie Fagan, are trying to fight obesity by raising awareness of this rising trend.

One of the biggest problems with dieting is that people often just aren’t satisfied with their meal, usually because they do not feel full. We plan on introducing to students a variation of the Low Calorie High Volume diet. This diet encourages eating lots of vegetables and healthy proteins, like chicken breast, spinach and zucchini that are tasty and have very low amounts of calories. These types of food you can eat in large quantities and become full, without having to eat a lot of calories. However, since according to the CDC, only 28% of those living in New Jersey eat fruits and vegetables at least five times a day, it seems that many people are not aware of this new nutrition program.

We are creating a poster containing this information and also traveling to dining halls around campus talking to students about this new diet. We will give them facts about the foods they are eating, and educate them on the new nutrition plan we are trying to get out to the public. We hope that with our help, these students will learn some new proper nutritional facts and end the urban myth of the “Freshman 15”. We all want to take better care of our bodies and try to live the healthiest life as possible, why not start now? Hope to see you all around campus!

Farah Benarba is junior studying biotechnology at Rutgers.

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Childhood Obesity in the U.S
Sent to The Star Ledger – Middlesex County

Dear Editor,

Obesity is an issue that affects more and more children and adolescents in the United States daily. Growing up as a child I was constantly exposed to fast food. Weighing almost two hundred pounds at the age of twelve, being told obesity runs in my family, and I am suppose to be big. I then realized that I had to make a conscious decision to lose my excessive weight gain and want a healthy life for my self. According to researchers at the Center for Disease Control Prevention, “Obese youth are more likely than youth of normal weight to become overweight or obese adults, and therefore more at risk for associated adult health problems, including heart disease, type 2 diabetes, stroke, several types of cancer, and osteoarthritis”. It is important that kids are introduced to healthy eating at an early age. Young people need to practice healthy lifestyle habits. This would include eating healthy foods and doing more physical activities. This is why I support first lady Michelle Obama’s program “Lets Move”. Her program focuses on the
issues with childhood obesity and how we can tackle this problem by improving food in schools and educate parents on nutrition and exercise.

Signed,
Jessica L. Hinds

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Bayshore Courier News
C/O: Letter to the Editor
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To Whom It May Concern:

As a nation, one of the biggest problems with our society today is obesity. Obesity has taken the country by storm and is becoming a bigger problem everyday. Not only is this issue affecting many adults today, but young school children are also suffering from the effects of this medical condition. There are many factors which affect this developing condition and as a nation I believe it can be overcome.

The first thing that needs to be done to control obesity is to make sure healthy meals are being provided for families both in the home and at school for young children. If we keep providing foods high in fat and sugar to our children then they are going to continue to consume these types of foods. Implementing good nutrition starting at a young age will enforce good decision making later on and they will be more likely to enjoy those foods and try new ones later in life.

The second thing is allotting time for physical activity within our daily lives. As a working college student I can relate to the idea that there never seems to be enough time for work, homework, cooking, cleaning, and physical activity. There are many ways, however, that it can be incorporated into one’s life. Taking family walks, going for a bike ride, raking leaves or even playing Wii together as a family are all forms of physical activity. Finding the motivation to get up and doing something can be difficult, but family support does help.

The last factor that can help control the obesity epidemic in our country is the large portions that we continue to consume. Overeating and the consumption of large quantities of food are big factors in obesity. Eating slowly, only consuming second helpings when one is still hungry, and eating foods high in fiber are ways we can help control our portions and how much we are consuming.
Although these things may sound simple and easy, it can be very difficult at times, but if we all work together and show support for one another the obesity epidemic can be a thing of the past.

Sincerely,

Jill Logan

Appendices

Farah Benarba’s Targum Posting

http://www.dailytargum.com/opinions/take-steps-to-eat-healthier-food-1.2394819