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## Portion Distortion Plays a Major Role in the American Obesity Epidemic

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PORTION DISTORTION PLAYS A MAJOR ROLE IN THE AMERICAN OBESITY  
EPIDEMIC

by

Amanda Kay Larsen

Submitted in partial fulfillment  
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of

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## Abstract

The prevalence of overweight and obesity among the American population is on the rise. This epidemic can be attributed to an increase in energy intake. Research has shown that increased consumption is associated with both individual and societal factors including an increase in the size of portions, the influence of the food industry, and confusion on the part of the consumer. The findings indicate that dietitians and other healthcare providers need to do their part by informing society of the importance of decreasing portions and helping the consumer recognize appropriate portion sizes.

## Introduction

There is an upward movement in the prevalence of overweight and obese persons in the United States, which does not come as a surprise to most health care providers (1,2). Many of these people are seen by health professionals for coexisting health problems. The health experts warn that bigger meal and snack portions are the culprit of these larger waistlines (1,2). In America portion sizes have been changing and it has only been within the last century (2-5). These changes are being seen by health professionals, who are realizing the challenge they have in making a healthier society (4,5).

## The Obesity Epidemic

The obesity epidemic in American has become a growing concern for the society as a whole (1). The increasing incidence of obesity continues to be a health concern for the nation (1,2). The most dramatic changes have occurred in the last ten years (3). Approximately 55% of Americans are overweight or obese (2). A comparison of the years 1970 and 1990 showed the prevalence of people who are overweight to have almost doubled in all categories (1). Children went from an 8% occurrence of overweight in 1970 to 14% in 1990; adolescents, 6% to 12%; and adults, 25% to 35% (1). According to the United States Department of Health and Human Services, obesity among adults doubled between 1980 and 1999 (6). Further-more, the status of being overweight tripled among adolescences during the same time period (6).

## Health Implications of Obesity

In the American society a tremendous amount of stress and criteria of acceptance is placed on appearance. This has presented a greater societal pressure to be thin. This, however, is not the greatest concern when looking at overweight and obese individuals (though these things should not be disregarded when working with these individuals). Obesity has its own set of health problems. Type II Diabetes, coronary heart disease, cancer, hypertension, stroke, sleep apnea, and osteoarthritis are just some of the risk factors associated with obesity (7). Healthcare providers are beginning to see children exhibiting metabolic abnormalities previously only seen in adults. Obese children are showing increased blood sugars, blood cholesterol, and blood pressure (1). As time goes on these symptoms are being observed in younger and younger children (1).

## Explanations for the Obesity Epidemic

Despite prescription and non-prescription drug, weight loss supplements, rigid diet plans, lifestyle programs that include exercise which are all focused on promoting weight loss, the incidence of obesity continues to rise (8). While there are multiple causes for an increase in obesity, none of them seem to prove to be as much of a contribution as over-consumption of calories. The rise has been too quick to be attributed to a change in the genetic makeup of individuals (1). There has been a decrease in activity with more people working office jobs where they sit in front of a computer, and more time being spent in front of a television (1-4,9). These life-style behaviors are some of the best predictors of

overweight and obesity in an individual, however there are no reports that attribute the current rising rates of obesity to a decreasing activity level (3). Therefore, obesity should be viewed in relation to energy balance.

### **Food Portions**

The US Food Supply and Dietary Intake surveys have shown that the food supply provided 3300 kilocalories per person in 1970 and by 1990 this had increased by 500 kilocalories to provide 3800 kilocalories (1,4,9). Where some of this can be attributed to food waste, dietary intake surveys indicate America is also consuming more. In 1970 Americans on average consumed 1800 kilocalories per day, whereas by 1996 this had increased to 2000 kilocalories per day (1). It only takes an extra 48 kilocalories to contribute an extra 5 lbs per year (10,11). Harnack et al. (12) found that there was an increased consumption of all major food groups, but most pronounced was in the consumption of beverages, which can provide upwards of 300 kilocalories in an average 20-ounce serving of soda (9). The increase food intake gives some indication of trends in society.

### **The Food Industry's Role**

It is becoming more apparent the impact the food industry has on the rise of obesity. Portion sizes that are served in restaurants and in the stores are definitely increasing (3-5,9,13,14). A large body of research gives supporting evidence of this increase (3-5,9,13,14). The current sizes are two to five times larger than the standard serving sizes recommended by education materials such as the Food Guide Pyramid (14,15). A cookie is now 700% that of the Food Guide Pyramid standards, cooked pasta is 480%, a muffin is 333%, steak is

224%, and a bagel is 195% of these standards (9,13,14). Additionally, food labels on a majority of food products are giving serving size suggestions much larger than what is recommended by the Food Guide Pyramid (14).

Not only are the actual food portions larger, society is making accommodations to meet these increases. Larger dinner plates are found not only in restaurants, but also in the home (9,13). Car manufacturers are installing larger cup holders to accommodate the fast food industries larger drink cups (9). Cookbooks are now printing recipes with a decreased number of servings to increase the portion size (9).

A comparison between 1957 and 1997 showed that a hamburger was 1 ounce of meat, while now it is on average 6 ounces; soda jumped from 8 fluid ounces to 32-34 ounces per serving; popcorn is now an average of 16 cups compared to 3 cups in 1957; and a muffin increased from 1.5 ounces to an 8 ounces average serving (2).

#### Leads to Portion Distortion

No doubt about it, portion sizes have changed in America, but what led the American society into this portion distortion? In the early nineteen hundreds a majority of deaths were caused by infectious diseases, which are partly due to inadequate intake of both calories and a variety of nutrients (1). Dietary advice of nutritionists, health professionals and the food industry were encouraging people to eat more of all kinds of foods (1). This would provide a variety of nutrients and would discourage the development of food toxicities and diseases that were attributed to consuming one type of food (1).

As the economy improved there were changes in food prices, increases in disposable income and more food assistance to the poor (1,2). This provided access to a greater variety of foods, which in turn helped to decrease the occurrence of nutrient deficiencies (1). A society previously predominated by malnutrition shifted to a society of over-nourished people (1). This introduced a whole new set of health problems. Moreover, it now being observed that as people become more successful their nutrition declines from healthy plant based diets to diets of processed, meat, and fatty foods (1).

The food industry has an influence on this increase in accessibility and availability of foods (1). Foods were locally grown and were consumed as whole foods by the individuals who grew them (1). Farms generally produced all types of produce that could support the family and others living in the community (1). There has since been a decline from 40% of the population living on farms to what is now estimated to be approximately 2% (1). With this decrease in numbers, farms have become bigger and productivity has increased from 40% to 82% (1). Farms are, for the most part, owned by giant corporations that produce a single commodity rather than a wide range of items (1). The commodities they are producing are processed in some way to prevent spoilage when they are transported coast to coast to meet the needs and wants of consumers in the nation (1). Additionally, there has been the development of cost effective importing and exporting with other countries, which also adds to the variety of foods available to the consumer (1,2).

The average American spends less than 10% of their income on food (1). With there being an overabundance of food in the U.S., and the influence of the food industry on what consumers buy, much more processing has gone into the production of food (1). Through the processing, value is added to the food; moreover, the more hands involved, the greater the cost of the food for the consumer (1). The producers of the foods are only receiving approximately 20% of the money spent by the consumer (1). The remaining 80% pays for the additional labor of processing, the packaging, advertising, and other business costs (1). Furthermore, there is an advantage for the food companies when value is added via processing of the products due to this distribution of food pricing.

Americans are willing to pay this added value due to the added convenience of processed foods (1,4,5,8-11). Their eating patterns have changed substantially over the years with a demand of greater convenience in food preparation. Looking back in history we see the evolution of this demand. In 1934, most food was prepared at home (3). It was a very labor-intensive process and allowed exclusive control of the composition of the foods eaten by the cook (3). In 1954 there was the development of the frozen food industry (3). This liberated the cook from exclusive preparation of food and made a wide range of foods available at all times of the year (3). There was no more seasonal specificity, and foods could be kept for a longer period of time (3). In 1974 the microwave was invented (3). It was at this time that the control of food intake started to slip out of the hands of the parents because the child could select and

prepare his/her own food (3). This had an affect on the interaction between the parent and the child (3). Also, there was a rise in the proportion of women with children entering the work force in addition to people working longer hours (1,3).

As convenience became more of a demand of the consumer there began to be a rise in the trend of fast food (4). Nineteen percent of total energy consumption was from fast food in 1977, and by 1995 it was approximately 34% (4). Moreover, the society that cooked food from scratch and had control and discretion of food's composition turned over their health to the food industry and trends of society.

A negative effect of convenient fast food is that the consumer has less control of the composition of the food and the portions are usually larger, which in turn provides more calories (1,4,8-11). The consumer is promoting their development and sales more because of the taste and price, rather than the nutrient content (1). Though many products are marketed as nutritious due to the fortification and supplementation of these food items, Americans are more concerned with convenience than the consideration of health (1). Moreover, there will continue to be a rise in the production and sale of foods that can be consumed quickly and with minimal preparation due to the demands of society (1).

#### The American Diet as it relates to the Guidelines

There is an increase in the consumption of food from the top of the USDA food guide pyramid and less food consumption from the bottom of the pyramid (3). Fast foods are a major contribution to this distorted food guide pyramid with

the concept of value marketing (1-5,9,13). The perceived "price-value ratio" has become the focus of the efforts of the food industry (1,9,13). The food industry is not necessarily trying to sell more product, rather they are trying to encourage consumers to choose their restaurants over their competitors (9). It is an encouragement of brand loyalty more than an encouragement for the consumer to eat more (9).

### **Super-sizing of Meals**

In this society of super-sized meals and an average serving size of general food items being 2-5 times that of the recommended, consumers have become confused as to what a portion size actually is and what is the right amount for them to be consuming (9,13). While a serving size is the amount recommended, a portion is the amount of food one eats at any one time (4,5). Moreover, a portion size may be much larger than a serving size, as is the case in America (4,5,14).

### **Health Claims vs. Food Industry**

Health claims and recommendations directly conflict with the food industries demand that people should eat more of their product (1). They continue to promote over-nutrition to satisfy stockholders (1). The advertising steers away from an "eat less" message, as recommended health advice, and suggests eating more through new products and increasing portion sizes (1). Many do not realize the influence advertising has on their food choices. Most of this advertising is promoting the highly processed and fast foods (1).

## **Consumer Confusion**

Dietary guidelines have been supported by the U.S. government since the early 1900's (1). However, over time the guidelines have become confusing to consumers due to contradictory information (1,14). The guidelines have become more ambiguous. The food industry insists that there be a positive expression in dietary guidelines and suggests focusing on nutrients rather than specific foods (1). They want to encourage consumer consumption of all foods, regardless of healthful diets (1). Though there is no evidence that this approach has helped people to eat more healthfully, nutritionists, practitioners, and government agencies continue to promote the message of "balance, variety, and moderation...no such thing as a good or bad food; all foods can be part of a healthful diet; it's the total diet that counts" (1). These statements are an affect of the food industry lobbying and are directly promoting the protection of product sales as opposed to promoting public health and understanding (1).

In the past 15 to 20 years there has been a non-fat craze that has swept the nation in response to increasing obesity epidemic (3). This introduced a food environment which seemed would be representative of an effective prevention tactic (3). Overtime we have experienced just the opposite with a continual rise in obesity.

### Making the Consumer Aware

Greater attention needs to be given to food portion sizes as a factor in energy intake and weight management (4,5,8-11,13). The food guide pyramid was designed to provide guidance to the consumer in making the best choices

for good health (1,14). However, more instruction needs to be provided for appropriate application and use of the recommendations (1,4,5,14). People need help in increasing their knowledge of correct portions and estimating serving sizes (4,5,8-11,13). Being able to incorporate estimations into their diet at home in addition to when they eat out at restaurants is important in teaching a healthy diet (9,13). The relationship of portion size to caloric intake, weight gain, and health needs to be explained to the consumer in a way they can understand and make practical use of the information (4,5). Everyday visual comparisons can be a big help when teaching consumers. Some visual comparisons for appropriate serving sizes include the following: four stackable dice for cheese; tennis ball cut in half for pasta, rice, or cooked vegetables; an audiocassette for meat, poultry, or fish (5).

### **Behavior Changes**

Behavioral changes can be addressed in which consumers are taught how to deal with situations that have become the cultural norm. Advice for eating out at restaurants include making one American sized meal two healthier ones (13). It can be suggested that one avoid buffets, share an entrée, or even take half home (13). Consumers also need to be encouraged to limit their consumption of soft drinks (5,12). One study showed that milk, an important part of a healthy diet due impart to the nutrient density, was being replaced by soft drinks, which only provides sugar (12). Energy intake has been positively associated with consumption of non-diet soft drink (5,12). New policies should be promoted to limit access to soft drinks at day care centers and schools (12).

As for the food industry, federal agencies could make serving size definitions more consistent and comprehensible (1,13,14). Restaurants could be required to list calories along with prices in the menu (13).

### **Active Life-style**

Exercise should not be forgotten, as it is an important part of any healthy lifestyle. Current recommendations are to get on average 30 minutes of exercise in each day, but any increase in activity is better than none (9).

### Conclusion

In conclusion, the obesity epidemic is due to the increasing calories in the American diet coming from eating more food in general, but especially more of foods high in fat and sugar. Food chains and advertising are a major contribution to this as they are continually promoting an intake of more food. In turn, this introduces a discrepancy between recommended and actual servings. With the increasing confusion among consumers, the challenge is for dietitians and other healthcare providers to counsel on the importance of decreasing portions and helping the consumer recognize appropriate portion sizes.

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