

U.S. Food Consumers: Growing Concerns about Weight and Health

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Food consumption in the United States, in the form of calories, has increased by approximately 15% over the past 30 years. Simultaneously, physical activity expressed as calories burned, has decreased an estimated 25 to 30 %. In the current environment, human beings will naturally gain weight. Our genetics, while increasingly diverse in the U.S., remain the basis for a metabolism designed to conserve energy. Some of us have the misfortune of being more "thrifty" than others with our energy expenditure; however, the majority of us (66%) now have enough energy stored to qualify as overweight or obese. The response to this energy crisis will require changes by individuals, families, consumers, communities, organizations, government, industry and society.

Trends Over Time: 1965-2003

Energy Consumption

In 1970, U.S. food expenditures as a percent of disposable personal income totaled 13.8%. Most of these expenditures were for food to be eaten at home (10.2%) with a smaller percent allocated to foods eaten away from home (3.6%). By 2000, U. S. food expenditures decreased by 3.4% to 10.4% of disposable income. Food dollars were more evenly allocated to food at home (6.2%) and food away from home (4.2%). The trend in increasing amounts of food eaten away from home has resulted in a decrease in

the nutrient quality of the American diet through increased fat and saturated fat content and decreased amounts of calcium, fiber, and iron (Lin 1999). Not surprisingly, the amount of time spent preparing food at home decreased an estimated 40% over the 30 years between 1965 and 1995 (Cutler 2003).

Americans have implemented the dietary advice to decrease the proportion of dietary calories from fat. However, an increase in total calorie intake, primarily from carbohydrate, has occurred over the past two decades (Putnam 2002). Refined grains and added sugars account for 68% of the additional 300 calories in the 2000 U.S. diet as compared to the diet of 1985. Added fats account for 24% of additional calories; fruits and vegetables contributed 8% of calories. Meat and dairy foods contributed 1% fewer calories to energy intake during this time period.

A 2002 nationwide survey of food consumers by the American Dietetic Association illustrates that consumers are more concerned about obesity than other food related issues including dietary supplements, food irradiation, and genetically modified foods (ADA 2002). Consumers are not well informed about serving size. When asked to identify the correct serving size for bread, cooked pasta or rice, raw leafy vegetables, cooked or chopped vegetables, cheese, and cooked meat, poultry or fish, with the exception of bread consumers were unable to do so.

Energy Expenditure

Population estimates of physical activity as part of work or leisure are more difficult to assess than food consumption. The ADA 2002 survey of U.S. adults found that the importance of exercise and physical activity and the prevalence of a conscious effort to be active did not change from 1997 to 2002 (ADA 2002). Data from the Centers for Disease Control and Prevention (CDC) examining physical activity trends found that leisure time physical activity levels remained relatively unchanged during 1990-1998 (CDC 2001). A quantitative analysis of 1992-1994 data from the National Human Activity Pattern Survey found our society to be primarily sedentary; leisure time physical activity accounted for only 5% of the U.S. population energy expenditure (Dong 2004). Excluding sleeping, the largest contributions to energy expenditure were driving a car, office work, and watching television. Time usage diaries from 1965 to

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1995 suggest that energy expenditure has decreased an estimated 10-20%, including a 40% reduction in time spent preparing food and a 170% increase in time spent watching television (Cutler 2003). Despite a lack of standardized data set to track energy expenditure over time, few would argue that calories expended have declined by at least 25-30% over the past few decades. The time constraints of modern life with long working hours and commutes to work leave limited time and motivation for leisure time physical activity.

The Present Time

The excess energy consumed by the population combined with the decline in energy expenditure through physical activity has resulted in obesity reaching epidemic proportions in the U.S. We are clearly the heaviest nation on earth as illustrated by Figure 1 (OECD 2003). One in three U.S. adults are classified as obese, compared to one in five citizens of the United Kingdom and one in 10 residents of Italy or France. A map illustrating prevalence of obesity among U.S. adults by state is shown in Figure 2. This 2002 map represents the first time the CDC has used a category indicating a state population where 25% or more of adults are obese.

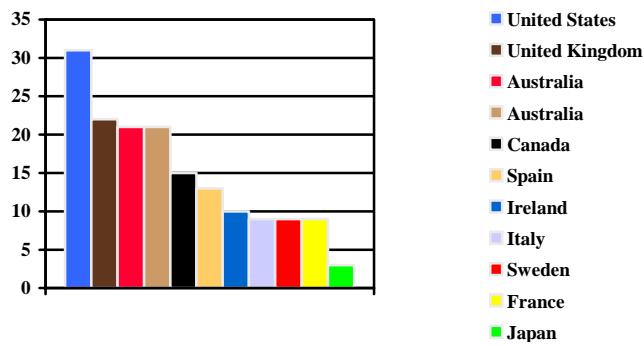


Figure 1. Obesity prevalence among selected countries, 2003. Source: Organisation for Economic Cooperation and Development. Health Indicators 2003.

Obesity Trends* Among U.S. Adults BRFSS, 2002

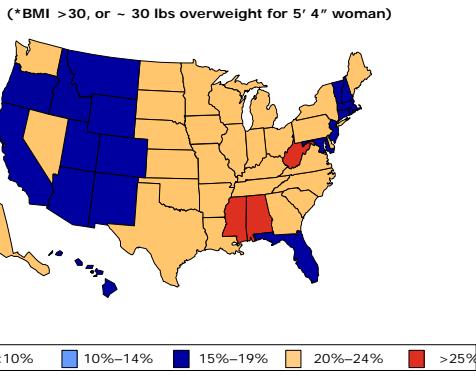


Figure 2. Obesity prevalence among U.S. adults, 2002.

In 2001, the U.S. Surgeon General issued a call to action to prevent and decrease overweight and obesity (U.S. HHS 2001). This document clearly defined the current situation as an epidemic requiring a public health response. To address the problem, the Surgeon General outlined five strategies:

1. Promote the recognition of overweight and obesity as major public health problems.
2. Assist Americans in balancing healthful eating with regular physical activity to achieve and maintain a healthy or healthier body weight.
3. Identify effective and culturally appropriate interventions to prevent and treat overweight and obesity.
4. Encourage environmental changes that help prevent overweight and obesity.
5. Develop and enhance public-private partnerships to help implement this vision.

This call to action recognizes the widespread response needed to address the obesity epidemic and outlines significant roles for individuals, organizations, schools, families, communities, industry, and government. Personal responsibility for health related choices and behavior, as well as policy and environmental initiatives will be required.

Time for a Change

New Definition of Success

A greater appreciation of the biological factors that regulate body weight and the difficulty of maintaining large weight losses prompted a number of expert panels to conclude that weight losses of only 5 to 15% initial weight are a successful outcome (NHLBI 1998). An initial goal of a 10% reduction from baseline at a rate of one to two pounds per week is recommended. Significant attention should be paid to successfully maintaining this initial weight loss before attempting to reduce weight further. Many U.S. adults may find this modest goal surprising, but in fact a loss of 10% of body weight can significantly improve health status.

New Strategies for Individuals

The National Weight Control Registry at University of Colorado has identified the strategies of people who have lost at least 20 pounds and maintained their reduced weight for at least 2 years. Only 5% of those in the registry have achieved success by this definition. These successful 5% have employed some common strategies (Schick 1998). Key among these approaches is the ability to keep trying despite small setbacks. These people weigh themselves often, eat a low-fat, moderate carbohydrate diet, exercise one hour per day, and engage in activity throughout the day. They eat five small meals throughout the day to avoid becoming overly hungry, but they do not deny themselves foods that they crave. By examining the behaviors of people who can successfully lose weight and maintain their loss in today's U.S. environment, the National Weight Control Registry has

provided important insights that may help others learn to manage their weight.

The American Dietetic Association advocates a total diet approach to communicating food and nutrition information (ADA 2002). Registered Dietitians (R.D.) believe that nutrition confusion can be reduced by emphasizing moderation, appropriate portion size, balance of the total diet over time, nutrient dense foods, and adequate physical activity to promote a healthy weight. By recognizing that all foods can be part of a healthy diet, this approach allows inclusion of favorite foods and diminishes the possibility of excess calorie consumption prompted by an unsatisfied food craving.

Food Supply

The total diet approach for the U.S. population, given physical activity trends over the past decade, will require a reshaping of food consumption patterns. The new American plate should contain greater amounts of fruits and non-starchy vegetables, lean sources of protein, dairy foods, and lesser amounts of refined grains and simple carbohydrates. Inclusion of healthier fat choices, such as olive oil and margarine without *trans* fats, will provide satiety. Calorie rich grains and sweets will need to be consumed in appropriate serving sizes. Carbohydrate based foods can be greatly enhanced by increasing dietary fiber content to at least three grams per serving.

New public-private partnerships will need to be forged to promote dietary change and increased energy expenditure. The National 5-A-Day Campaign for Better Health is the only current example of such an initiative (Nestle 2002). It is a joint venture of the National Cancer Institute, and the Produce for Better Health Foundation and promotes consumption of at least five servings per day of fruits and vegetables. As shown in Figure 3, food consumers of normal body weight are more likely to meet the 5-A-Day goal and obese food consumers are more likely to consume less than one serving per day of fruits or vegetables (Mokdad 2001). The food industry has introduced new products to encourage consumption of tasty, convenient fruits and vegetables, including bagged salad mixes, peeled and sliced fresh pineapple, baby carrots, and grape tomatoes.

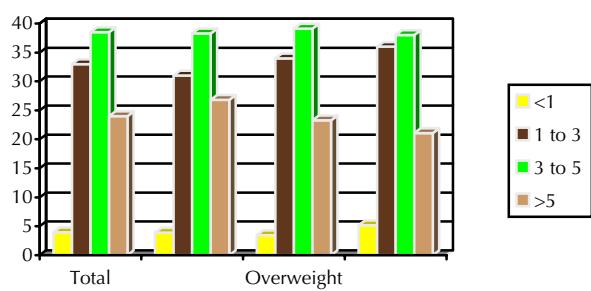


Figure 3. Consumption of 5-A-Day fruit and vegetable servings by U.S. adults classified by weight. Source: CDC Behavioral Risk Factor Surveillance System, 2000.

Promotion of Physical Activity

A great need exists for industry to become more involved in promotion of daily physical activity for U.S. adults and children. Innovative community planning, including alternative means of transportation such as biking and walking, will be required. The sedentary nature of our society at present and the relatively unchanged prevalence of participation in leisure time activity over the past decade suggest that small measures to increase energy expenditure as part of daily routines are needed. Communities, worksites, schools, and homes may be designed to promote activity rather than energy saving convenience.

Time to Look Forward

Through improved sanitation, immunizations, tobacco education and seat belt usage we have learned lessons about how to achieve better public health. Moving society toward new behaviors requires a focused, consistent message from a variety of sources. The behaviors promoted in the message should be supported by widespread incentives and infrastructure. Helping people attain better health is a challenging but worthwhile effort. Arthritis, cancer, cardiovascular disease and psychological ailments are all likely to become more prevalent in a population where most people are obese or overweight.

Seldom have the stakes been as high as they are in the current epidemic of obesity and overweight. The cost of health care and lost years of life if this epidemic is not successfully addressed will be astounding. An estimated one-third of today's children will develop type 2 diabetes, tripling the current prevalence of this costly disease. The economic consequences of overweight and obesity include direct costs, such as medical care, and indirect costs, including value of lost wages due to disabilities and premature deaths. In 2000, the total cost of obesity was estimated to be \$117 billion, \$61 billion direct and \$56 billion indirect (U.S. HHS 2001). More recently, an independent estimate from the CDC was calculated to be \$75 billion in 2003 dollars (Finkelstein 2004). Most of the cost associated with obesity is due to type 2 diabetes, coronary heart disease, and hypertension.

The World Health Organization issued a global plan in April 2004 describing how governments can help people avoid chronic disease through food and activity behaviors (WHO 2004). The plan details the role of taxation and subsidy toward greater production of a healthier food and beverage supply and encourages more responsible marketing practices, particularly with respect to promotions aimed at children. It calls on industry to limit levels of saturated fat, trans fatty acids, sugar, and salt in current food products and to use consistent, clear product labeling. While this prompted an outcry from sugar producing countries, including the U.S., given recent increases in simple carbohydrate consumption this seems to be a sound recommendation as part of a global plan to curb obesity. Increased production of fruits and vegetables and lower calorie, reduced portion

sizes for foods eaten away from home are also evidence-based strategies.

Policy recommendations recently proposed by leading scientists include innovative ideas for education, food manufacturers, food assistance programs, health care, transportation, urban development, and government. These include legislation to levy taxes on highly processed, low nutrient, high calorie foods with proceeds used to fund "eat less, move more" campaigns (Nestle 2002). Education systems should increase use of science and health curricula to promote good nutrition, physical activity, and healthy weight management skills. Media and marketing campaigns could have a powerful influence on children and adults by promoting healthier lifestyle behaviors. Reductions in automobile travel and time spent viewing television could significantly improve energy expenditure.

This kind of social change will take decades to realize. However, with sufficient political will and social and economic incentives we can reshape our environment to promote energy balance as part of a healthy lifestyle (Hill 2003). In the short term, people must be given strategies and tools to help them resist environmental influences that promote weight gain. Indeed for many of today's U.S. adults, the first step will be to stop gaining weight.

Health promotion researchers now recognize the need to expand their view of weight management interventions. These new approaches take into account how personal relationships, social support, mental health status, and spiritual health affect our ability to lose weight and to maintain a reduced body weight. Registered dietitians have updated protocols to teach new food selection, serving, and preparation skills and to balance the energy equation with physical activity as part of any weight loss program. Medical doctors, registered nurses, and health care systems now consider body weight classification as normal, overweight, or obese to be an important part of routine health care. Public health in the U.S. continues to monitor the weight status of our population and to provide leadership and coordination for the movement toward a healthier weight.

The current situation is serious, and the measures required to remedy the situation are daunting. Clear and focused leadership is needed among those in positions to influence the food consumption and energy expenditure of U.S. adults and children. Community planning, economic incentives, and educational programs will need to be designed for time conscious, multi-tasking, 21st century humans. We would be wise to consider what we can learn from the past about the importance of healthy personal relationships, social support, and a rich inner life. We are the first country on earth to achieve the good life through energy saving conveniences and a plentiful, affordable, food supply. In the near future we must to take action to ensure

that we are able to enjoy the life before us in good health and to create a sustainable way of life for future generations.

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