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Applying a Public Health Approach to Decrease Obesity in the United States

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Successful public health interventions target behavioral, sociocultural and environmental factors to reduce mortality, disease prevalence and to promote health. In concert with clinical medicine, which explores the factors that contribute to disease in a single person, the public health approach focuses on identifying, understanding and intervening with populations. Over the past century, public health interventions such as sanitation, national vaccination programs, educational campaigns, safety and environmental regulations, along with improved access to health care, have resulted in dramatic declines in death and disability, resulting in a 30-year increase in average life expectancy for Americans and a shift in disease mortality from infectious to chronic diseases.¹

Over the past several decades, significant lifestyle and environmental changes have contributed to decreased physical activity and increased caloric intake among Americans, which are factors linked to the rise of a contemporary public health epidemic – obesity. Obesity rates have increased by 50 percent from just a decade ago. An estimated 64 percent of American adults (nearly two out of three) are overweight or obese, and approximately 31 percent (59 million people) are considered obese.² Overweight and obesity impact people of all backgrounds, but are most prevalent among adults over the age of 60, African Americans, Hispanics, and adults with less education and lower incomes.^{3,4} This alarming increase in obesity is not just an adult problem: 15 percent of children ages

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six to nineteen (more than eight million young people) are overweight, which represents a tripling in the prevalence over the past 20 years.⁵

Obesity, along with lack of physical activity, has significant health-damaging effects, and represents the second-leading preventable cause of death in the United States, linked to an estimated 300,000 deaths each year.⁶ A recent study suggests obesity may have surpassed smoking in terms of having a stronger association with the occurrence of chronic medical conditions, reduced health-related quality of life and medical expenditures, and may soon cause as much preventable death in the United States as tobacco use.^{7,8,9} Five chronic diseases associated with obesity – heart disease, cancer, stroke, chronic obstructive pulmonary disease (e.g., bronchitis, emphysema, asthma) and diabetes – account for more than two-thirds of all deaths in the United States.¹⁰ In addition to claiming more than 1.7 million American lives each year, these diseases also hinder daily living for more than one of every 10 Americans (25 million people) and contribute to mental health problems as well.¹⁰ Obese individuals have double the risk of heart failure. The death rate from all cancers combined is reported to be 52 percent higher for overweight men and 62 percent higher for overweight women, as compared to their normal-weight counterparts.¹² It is estimated that physical inactivity alone contributes to a number of diseases and disabilities, accounting for 22 percent of colon cancer, 18 percent of osteoporotic fractures, and 12 percent of diabetes and hypertension in the United States.¹³ Significant increases in overweight and obesity are associated with a dramatic rise in type 2 diabetes, a 50 percent rise

over the past decade in both adults and children. This disease was unheard of in young people 10 to 15 years ago.¹⁴ A recent report estimates that one in three Americans born in the year 2000 will develop adult-onset diabetes.¹⁵

Furthermore, obesity represents a significant economic burden in the United States. In 2000, the total economic cost of obesity was estimated to be \$117 billion.⁹ Of this amount, \$56 billion was from lost productivity and \$61 billion was from direct medical costs alone.¹³

But, the good news is that the health crisis caused by obesity and sedentary lifestyles is almost entirely preventable through proper nutrition and engagement in physical activity. In the past, many have viewed obesity as an issue of willpower alone, but this view is a limited perspective since biological, environmental, and societal factors also play major contributing roles. To address causes of obesity including increased caloric intake and lack of physical activity, public health interventions must utilize a multifaceted and coordinated approach to change both individual behavioral patterns, as well as to address environmental and structural barriers to healthy food choices and active lifestyles.

First, physical activity. Despite scientific evidence that documents its health benefits, very few Americans use regular physical activity as a means to supplement their daily energy expenditure and offset their caloric intake. Currently, as many as 55 percent of U.S. adults report that they do not engage in the amount of physical activity recommended by the U.S. Department of Health and Human Services.¹⁶ Several factors have decreased the physical activity associated with daily life among Americans, including increased reliance

upon technology such as motor vehicles, television and computers; sedentary occupations; and reduced physical education in schools. Over the past 30 years, the number of passenger cars grew from 90 million in 1970 to approximately 130 million in 1999.¹⁷ The number of homes with a television increased from 59 million in 1970 to 99 million in 1999, and children spend, on average, 6.5 hours daily using media, including computers and video games.^{18,19} Recent studies have found that reducing television-viewing resulted in a lower body fat percentage in the children studied. Contributing factors may include increased participation in physical activity, decreased food intake because of reduced snacking and less exposure to food advertising.²⁰

In addition to the impact of the use of technology on reducing physical activity, children are neither being sufficiently encouraged nor given adequate opportunities to be physically active. Twenty percent of states do not require schools to teach physical education to their students.²¹ The percentage of high school students who attend daily physical activity classes has decreased over the past ten years from 41.6 percent in 1991 to 32.2 percent in 2001.^{21,22} Furthermore, only 31 percent of children walk to school if the distance is one mile or less, and 2.4 percent bicycle when the distance is less than two miles.²³ Public health initiatives that target behavioral and structural barriers to physical activity are needed. Such initiatives, for example, could include increasing the number of pedestrian malls in public places, encouraging people to walk or bike to work and school, increasing availability of recreational centers and parks, making physical education in schools compulsory,

reducing television, videotape, and videogame use and providing incentives to community groups to develop innovative strategies to make physical activity fun and a critical part of daily life.

Lack of physical activity is not the sole cause of the current obesity epidemic. The number of calories consumed by Americans has increased over the past several decades, significantly contributing to increases in weight. Behavioral and environmental changes in the American way of life as well as media influences and alterations in the diet of people in the United States are all factors that may contribute to the 12 percent increase in the average daily caloric intake (roughly 300 more calories) per person between 1985 and 2000.²⁴ Ninety-four percent of this increase stems from higher consumption of refined grains (46 percent increase), added sugars (23 percent increase), and added fats (24 percent increase).²⁴ A contributing factor to this excess caloric intake by Americans is the increased availability of highly processed foods that have resulted from a dramatic transformation in food production in the United States. Companies have used new technologies to produce a variety of processed and packaged foods and beverages.^{1,25} Additionally, the food industry spends approximately \$26 billion annually on advertising to market these products to the public.^{1,26} Increased consumption of food products has also occurred as a result of the proliferation of restaurants and “fast-food” eating venues in the United States. Over the past two decades, the number of Americans who dine out increased by two-thirds, and away-from-home foods provided a record 34 percent of total caloric intake in 1995, compared to 18 percent in 1977-78.²⁷

The simple fact is that Americans consume too many calories as compared to their activity level. Some public health interventions to help decrease calorie consumption include reducing portion sizes in homes, workplaces and various eating establishments and more prominently labeling the calorie and nutrient content of foods sold and consumed in stores, restaurants, movie theatres and other venues to make the public more calorie- and food-content conscious. Other strategies include encouraging the establishment of healthy “fast-food” restaurant chains and including more healthful food choices at existing venues, fostering healthy eating messages and participation in physical activity in the media, financial incentives, encouraging the sale of nutritious snacks on school campuses and ensuring the nutritional content of school food programs.²⁸ Many communities have engaged in serious debates about whether to limit or ban vending machines in schools. However, profits from school vending machine sales of soft drinks and snack foods can contribute up to \$100,000 per year to school budgets.²⁹ This money is often used to fund sports and physical education equipment, drama and arts programs, foreign-language education and computers and technological equipment. Therefore, alternate sources of revenue would need to be found to replace vending-machine sales of these products. Another strategy would be to replace these products with nutritious snacks, shifting student consumption toward healthier choices.

The public’s knowledge and attitudes about nutrition and its influence on health have been shown to play a major role in affecting what foods Americans consume today.²⁶ As new information about the re-

lationship between diet and health is discovered, it is relayed to consumers through government education programs, media campaigns, nutrition fact labels, and product health claims.²⁶ For example, one study found that increased amounts of publicly available information linking dietary lipids to heart disease has been associated with decreased consumption of low-fat milk, poultry, and fish.²⁶ It is estimated that a health promotion campaign on obesity prevention, for example, that would reach approximately 200,000 people, would cost about the same amount of money as one coronary-bypass operation.³⁰ A recent report from the “Hearts N’ Parks” initiative, a community education program supported by the National Heart, Lung, and Blood Institute (NHLBI) in collaboration with the National Recreation and Parks Association, found that children, adolescents and adults who participated in the initiative reported adopting healthier behaviors such as choosing heart healthy foods more often. In addition, adults said they boosted their level of regular physical activity after the program.³¹

However, the abundance of nutritional information available today can also overwhelm and confuse some consumers, causing them to disregard critical health and nutrition guidance.²⁶ These consumers may purposefully ignore healthy eating guidelines in favor of maximizing their personal satisfaction through consumption of enjoyable, yet unhealthy foods.²⁶ Additionally, while Americans might know a link exists between health and diet, most do not believe obesity to be a serious health threat and are not in favor of treating obesity as a disability.³² Misperceptions about the causes of obesity appear to be responsible for these attitudes. A recent study

found that 65 percent of people surveyed believe obesity results from individuals' lack of willpower to diet and exercise, rather than from environmental or structural factors.³² Demographic factors such as age, gender, ethnicity and socio-economic status are also associated with acquiring and using health information. For example, the prevalence of obesity is highest among people with fewer years of education, and in both men and women over the age of 60.^{3,4} Therefore, information alone on the relationship between diet and health has not been sufficient to decrease the rates of obesity and overweight in the United States. In fact, obesity continues to rise, despite a significant increase in the availability of nutritional information.

Clearly, more must be done to send clear, accurate, and reliable messages to the public about the links between healthy eating, physical activity, and disease prevention, as well as the dangers of obesity and lack of exercise. The Dietary Guidelines for Americans, currently under revision for release in 2005, is the authoritative source of science-based nutritional guidance by the Federal government and forms the cornerstone of Federal nutrition policy.³³ Culturally, gender- and age-appropriate health-education campaigns in schools and communities based on behavior-change research findings can help correct gaps in the public's knowledge. Health messages widely disseminated in the entertainment and news media may also help correct widespread misperceptions that contribute to obesity.¹ The types of media advertising approaches used successfully by the food industry to sell products should be applied to marketing healthy behaviors, conveying the message that small positive changes in eating behavior and physical activity can

result in enormous health benefits, as well as be enjoyable.

Education is also essential for health-care providers, and disease prevention must be a critical part of their training. Health-care professionals should promote healthy eating behavior and physical activity with their patients and be prepared to counsel them on effective preventive and treatment interventions for obesity. Clinical-practice evidence-based guidelines and information regarding weight-loss programs are available for health-care professionals and individuals seeking to reduce their weight and become more physically active. To this effect, comprehensive and reliable information on nutrition and physical activity can be found on the Internet at www.healthierus.gov, www.nutrition.gov, www.fitness.gov, and http://www.nhlbi.nih.gov/guidelines/obesity/ob_home.htm.

Additionally, research and evaluation are important ingredients of a national strategy to decrease overweight and obesity. More research is needed in the public and private sectors on the genetic, biological, behavioral, environmental and social factors that contribute to overweight and obesity, and protect against obesity-related illnesses, as well as research on racial/ethnic/gender disparities. The effectiveness of individual and community-based behavioral prevention strategies should be tested and evaluated, and studies of treatment interventions over the short- and long-term, including behavioral therapies and medications for obesity and overweight, are also needed. Popular diets used by millions of Americans (e.g., high-protein, low-fat and high-carbohydrate) should be evaluated for their safety and short- and long-term effectiveness.

Conclusion

Attention to obesity in the past has focused primarily on individual biology and behavior alone, a strategy that has clearly not been effective, given the doubling of obesity rates since 1980.^{1,9} In 2001, more than half of Americans attempted weight-loss or maintenance through dieting and spent over \$33 billion on products and services.^{1,34,35} Diet success rates vary, but in controlled settings, participants who remain in weight-loss programs lose approximately 10 percent of their weight, but one-third to two-thirds of that weight is regained within one year, and almost all of it within five years.³⁶ Given that many different factors contribute to overweight and lack of physical activity, obesity prevention, like smoking reduction, requires a multi-faceted public health approach not only challenging individuals to change their health-related behaviors, but also eliminating socio-cultural, structural, and environmental barriers to healthy food choices and active lifestyles.

A paradigm shift from a focus on treatment of disease to prevention and health promotion is needed to reduce obesity's toll on the health of people worldwide. To this effect, the Bush Administration has launched the *HealthierUS* campaign, which challenges Americans to increase their daily physical activity, consume a nutritionally sound diet, obtain preventive screenings and make healthy lifestyle choices.³⁷ The U.S. Department of Health and Human Services (HHS) response to this directive is known as the *Steps to a HealthierUS* initiative, directed by Secretary of Health and Human Services Tommy G. Thompson. At the heart of the initiative's framework are both personal

responsibility for the choices Americans make, and social responsibility to ensure policymakers support programs that foster healthy behaviors and disease prevention. Steps outlined in this program encourage individuals to promote health and wellness initiatives at school, work sites and in faith-based organizations; enact policies that promote healthy environments; ensure access to a full range of quality health services; implement programs that focus on eliminating racial, ethnic and socioeconomic-based health disparities; and educate the public effectively about their health.³⁸ To foster these goals, recently, the U.S. Department of Health and Human Services awarded \$13.7 million to support community partnerships that will implement science-based disease prevention and health promotion interventions.³⁹

To make significant progress in the battle against obesity, commitment, collaboration and leadership across the public and private sectors is needed. Individuals, families, communities, schools, universities, worksites, health care, media, industry, non-governmental organizations, policy-makers and the government at the local, state, national and global level all have important roles to play. This means working together to emphasize the power of prevention by developing and implementing obesity prevention interventions that are sensitive to age, gender and race/ethnicity issues over the lifespan. These actions, combined with implementation of the public health interventions described in this article, are important ingredients in a recipe for a healthier future for our Nation.



* *The views expressed are the views of the authors and do not necessarily represent the views of the U.S. Department of Health and Human Services.*

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