



**Testimony before the
Subcommittee on Health
Committee on Energy and Commerce
U.S. House of Representatives**

Innovative Childhood Obesity Practices

William H. Dietz, MD, PhD

**Director, Division of Nutrition, Physical Activity, and Obesity
National Center for Chronic Disease Prevention
and Health Promotion
Centers for Disease Control and Prevention
U.S. Department of Health and Human Services**

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Introduction

Chairman Pallone and members of the Subcommittee, thank you for the opportunity to provide this statement for the record for today's hearing on innovative practices to prevent childhood obesity. I am Dr. Bill Dietz, Director, Division of Nutrition, Physical Activity, and Obesity, located in CDC's National Center for Chronic Disease Prevention and Health Promotion. My statement provides you with an overview of the childhood obesity epidemic and examples of innovative approaches to combat this epidemic.

Background

John F. Kennedy once wrote, "Children are the world's most valuable resource and its best hope for the future."¹ He went on to remark on the "tragedy of millions of children lacking . . . proper nutrition" and "subjected to the handicaps and uncertainties of a low-income, substandard environment." Today, improper nutrition, along with physical inactivity and television time, are underlying factors for the approximately 12.5 million² cases of childhood obesity. The built environment—those places where children live, learn, and play—is frequently substandard, reducing children's opportunities to access available, affordable healthy foods and beverages as well as safe places to be active. This is especially the case for children from low-income or racial and ethnic minority families.

¹ Letter from John F. Kennedy to UNICEF, July 1945,

www.jfklibrary.org/Historical+Resources/Archives/Reference+Desk/UNICEF+Appeal.htm

² In 2006, there were 73.7 million U.S. children and the prevalence of childhood obesity was approximately 17 percent, Federal Interagency Forum on Child and Family Statistics,

http://www.childstats.gov/AMERICASCHILDREN/press_release.asp and the Centers for Disease Control and Prevention, <http://www.cdc.gov/HealthyYouth/obesity/index.htm>

At every stage of life, eating a nutritious, balanced diet and staying physically active are essential for health and well-being. This is especially true for children and adolescents who are developing the habits they will likely maintain throughout their lifetimes. CDC is monitoring national trends, developing policy and environmental strategies, and implementing innovative practices related to six target areas—increasing fruit and vegetable consumption, physical activity, and the initiation and duration of breastfeeding, and decreasing television viewing, consumption of energy dense, low nutritional value foods, and consumption of sugar-sweetened beverages. Through these activities CDC is striving to create supportive, healthful environments for children and their families to experience positive health outcomes throughout their lives.

Childhood obesity is an epidemic in the United States, one that is negatively impacting the physical and emotional health of our children, their families, and society as a whole. Obesity in children is defined using the Body Mass Index (BMI), a calculation of a child's height and weight as adjusted for gender and age based on CDC's Growth Charts for the United States. A child is considered overweight if his or her BMI is between the 85th and 95th percentiles, and obese if his or her BMI is greater than or equal to the 95th percentile.

The prevalence of obesity among American youth increased significantly between the 1980's and the present decade. Between 1976 and 1980, approximately 5 percent of youth 2 to 19 years

of age were obese.³ In 2006, the rate had increased to 16.3 percent. Obesity among children aged 2 to 5 years doubled, increasing from 5 percent in 1980 to 12.4 percent in 2006; among children 6 to 11 it doubled, increasing from 6.5 percent to 17 percent; and it tripled among adolescents aged 12 to 19, increasing from 5 percent to 17.6 percent.⁴ 31.9 percent of children and adolescents aged 2 through 19 years were found to be overweight or obese, with BMI at or greater than 85 percent.⁵ Furthermore, 11.3 percent of children and adolescents aged 2 through 19 years were found to be severely obese, that is, their BMI was above the 97th percentile.⁶ CDC's Youth Risk Behavior Survey also records data about obesity among 9th through 12th graders. The percentage of 9th through 12th graders who were obese increased from 1999 (10.7%) to 2007 (13.0%); from 2005 to 2007, there was no significant change.

There are disparities by race, ethnicity, and socioeconomic status in the prevalence of childhood obesity. In 2008, 14.6 percent of low-income, preschool-aged children were obese⁷ compared to approximately 10 percent of those from moderate- to high-income families.⁸ Among males aged 12 to 19, 22.1 percent of Mexican American were obese, 18.5 percent of Non-Hispanic blacks were obese, and 17.3 percent of Non-Hispanic whites were obese. Among females aged 12 to 19

3 Obesity Prevalence, Centers for Disease Control and Prevention, Division of Nutrition, Physical Activity and Obesity, (children 2-5 years, 5 percent, children 6-11 years, 6.5 percent, children 12-19 years, 5 percent).

<http://www.cdc.gov/nccdphp/dnpa/obesity/childhood/prevalence.htm>, last visited March 20, 2009.

4 Ogden CL, Carroll MD, Flegal KM. High Body Mass Index for Age among US Children and Adolescents, 2003-2006. *JAMA*. 2008;299(20):2401-2405.

5 Ogden CL, MD Carroll, KM Flegal. High Body Mass Index for Age among US Children and Adolescents, 2003 – 2006. *JAMA*. 2008;299(20):2401-2405.

6 Ogden CL, MD Carroll, KM Flegal. High Body Mass Index for Age among US Children and Adolescents, 2003 – 2006. *JAMA*. 2008;299(20):2401-2405.

7 CDC. [Obesity Prevalence among Low-Income, Preschool-Aged Children](#) --- United States, 1998-2008 [pdf 1M] *Morbidity & Mortality Weekly Report* 2009; 58(28):769-773.

8 Polhamus B, Thompson D, Dalenius K, Borland E, Smith B, Grummer-Strawn L. *Pediatric Nutrition Surveillance 2004 Report*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention;

years, obesity prevalence was higher among non-Hispanic Blacks (27.7 percent) and Mexican Americans (19.9 percent) compared to non-Hispanic whites (14.5 percent).⁹

One recent observed trend in national data is an apparent leveling (no statistically significant increase or decrease) in obesity rates for boys and girls 2-19 years of age, and among U.S. children under 5 years of age participating in the Women, Infants and Children (WIC) Supplemental Nutrition Program¹⁰ and a plateau among the nation's children who are classified as overweight. Although promising, this plateau is not associated with a decrease in obesity rates among the nation's children; 16 percent of children aged 2 to 19 remain obese.

Childhood obesity can become a chronic condition affecting the individual and his or her family throughout his or her lifetime. Overweight children and adolescents are more likely to be overweight or obese as adults. One study found that after age 6, obese children have a greater than 50 percent chance of becoming obese adults, regardless of parental obesity status.¹¹ In another study, obese adults who experienced childhood obesity before the age of 8 were more severely obese (had higher adult BMI) than individuals who became obese as teenagers or adults.¹² Adults who were obese as children may have earlier onset of co-morbidities (e.g., diabetes, cardiovascular disease, some cancers) and prolonged health effects from these co-

2006.

9 Ogden CL, Flegal KM, Carroll MD, Johnson CL. Prevalence and trends in overweight among U.S. children and adolescents, 1999–2000. *JAMA* 2002;288:1728–1732.

10 Polhamus B, Dalenius K, Borland E, Mackintosh H, Smith B, Grummer-Strawn L. *Pediatric Nutrition Surveillance 2007 Report*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2009.

11 Whitaker RC, Wright JA, Pepe MS, Seidel KD, Dietz WH. Predicting Obesity in young adulthood from childhood and parental obesity. *N Engl J Med* 1997;337(13): 869-73.

12 Relationship of Childhood Obesity to Coronary Heart Disease Risk Factors in Adulthood: The Bogaluse Heart

morbidities and other conditions (e.g., arthritis, reproductive health complications, memory loss).¹³ A 2007 study reported that 70 percent of obese young people already had at least one additional risk factor for cardiovascular disease, while 39 percent had at least two additional risk factors.¹⁴ And consider Type 2 Diabetes Mellitus (T2DM), historically referred to as ‘adult-onset’ diabetes. Type 2 Diabetes Mellitus was virtually unknown in children and adolescents 20 years ago; now although the prevalence remains low, children and adolescents account for almost 50 percent of new cases of T2DM in some communities.¹⁵

Economics of Obesity: Implications for Expenditures

Preventing childhood obesity has significance not only for individuals’ health but also for the U.S. health care system. The care and treatment of obesity and its co-morbidities over the lifespan can be costly. Data from the 1998 and 2006 Medical Expenditure Panel Surveys (MEPS) revealed that obesity increased medical costs by 37 percent in 1998 and 2006, regardless of the payer source; indeed, “across all payers, obese people had medical spending that was \$1,429 greater than spending for normal-weight people in 2006;”¹⁶ in 1998, that cost was \$1,145 greater. These data showed that, among Medicare-paid claims, non-inpatient services and pharmaceuticals were the primary drivers of expenditures with costs exceeding \$600 per year per obese beneficiary compared to normal-weight persons; among Medicaid claims,

Study. *Pediatrics*, 2001;108(3): 712-718.

13 Ferraro, K.S., R.J. Thorpe Jr., and J.A. Wilkinson. 2003. The Life Course of Severe Obesity: Does Childhood Overweight Matter? *Journals of Gerontology, Series B, Psychological Sciences and Social Sciences* 58(2):S110–19.

14 Freedman DS, Mei Z, Srinivasan SR, Berenson GS, Dietz WH. Cardiovascular risk factors and excess adiposity among overweight children and adolescents: The Bogalusa Heart Study. *J Pediatr*. 2007 Jan; 150(1):12-17.e2.

15 American Diabetes Association (ADA). 2000. Type 2 Diabetes in Children and Adolescents. *Pediatrics* 105:671–80.

16 Finkelstein EA, Trogon JG, Cohen JW, Dietz WH. Annual Medical Spending Attributable to Obesity: Payer

prescription drugs were associated with a \$230 annual increase in expenditures for obese beneficiaries compared to normal-weight beneficiaries; and, among private payers, the annual increase was highest, accounting for a more than 80 percent difference between obese and normal-weight beneficiaries for prescription and non-inpatient services.¹⁷ However, there were several limitations in developing these estimates and the analysis does not directly allow for apportioning spending across specific diseases, as some spending is attributable to other co-occurring diseases and may not be singularly related to obesity. An estimated \$147 billion was spent in 2006 on obesity-related medical care expenditures, or approximately 9.1 percent of total annual medical expenditures.¹⁸ In 1998, obesity accounted for 6.5 percent of annual medical expenditures. Consequently, per capita spending did not change significantly between 1998 and 2006, but rather, the overall cost of treating obesity increased. This increase could be related to the greater prevalence of obesity among U.S. adults, more than 35% of whom are obese.¹⁹

Preventing chronic diseases, mediating health consequences, and reversing the current obesity epidemic are essential to making our health system work both for the reduction in health care expenditures and the achievement of positive health outcomes, thereby reducing the need for expensive secondary and tertiary care.

and Service Specific Estimates. *Health Affairs*.2009; 28(5)w822-w831.

17 Id.

18 Finkelstein EA, Trogon JG, Cohen JW, Dietz WH. Annual Medical Spending Attributable to Obesity: Payer and Service Specific Estimates. *Health Affairs*.2009; 28(5)w822-w831.

19 CDC, National Center for Health Statistics. Prevalence of overweight, obesity and extreme obesity among adults: United States, trends 1976-1980 through 2005-2006. last visited December 9, 2009.

Key Issues in Childhood Obesity Prevention

Recent tracking data indicate that far too many children and their families do not have proper nutrition and physical activity as part of their daily lives. For example, the *Physical Activity Guidelines for Americans* recently released by the Department of Health and Human Services recommends that all young people ages 6 to 19 engage in 60 minutes of moderate to vigorous activity daily.²⁰ Unfortunately, more than 82 percent of our young people do *not* meet this recommendation.²¹ One quarter of adolescents (24.9 percent) did not participate in 60 or more minutes of physical activity on any day.²² Further, the 2005 *Dietary Guidelines for Americans* encourages all Americans to daily consume fruits and vegetables in amounts sufficient to meet their caloric needs based on age, height, weight, gender, and level of physical activity. However, between 1999 and 2007, the percentage of U.S. youth in grades 9 through 12 who reported eating fruits and vegetables five or more times per day declined from 23.9 to 21.4 percent.²¹

Studies reveal additional confounding factors contributing to childhood obesity. Television viewing has contributed to sedentary lifestyles among our youth. NIH reported that, “Almost half of children aged 8-16 years watch three to five hours of television a day. Kids who watch the most hours of television have the highest incidence of obesity.”²² A 2002 study showed that more than 40 percent of low-income, preschool-aged children had a television in their rooms,

http://www.cdc.gov/nchs/data/hestat/overweight/overweight_adult.htm

20 2008 Physical Activity Guidelines for Americans, at <http://www.health.gov/PAGuidelines/>, last visited March 20, 2009.

21 CDC. [Youth Risk Behavior Surveillance—United States, 2007](#). *Morbidity & Mortality Weekly Report* 2008;57(SS-05):1–131.

22 National Institutes on Health. Word on Health: Childhood Obesity on the Rise. June 2002.

(<http://www.nih.gov/news/WordonHealth/jun2002/childhoodobesity.htm>) last visited December 9, 2009.

and they spent 4 hours or more daily watching television.²³ The impact of television on childhood obesity is likely mediated by the food advertisements directed at children, and the consumption of foods advertised on television. Several early life factors also contribute to childhood obesity. Maternal pre-pregnancy obesity is associated with several poor maternal health outcomes and has recently been linked to perinatal mortality and childhood obesity. Excess weight gain during pregnancy is associated with childhood obesity and, though the relationship is not clear, there is evidence to suggest that obese mothers are less likely to breastfeed and, separately, that children of obese mothers are more likely to become obese. Breastfeeding reduces the risk of early childhood obesity. Gestational diabetes also is associated with a greater incidence of childhood obesity,²⁴ as is maternal smoking during pregnancy.²⁵

The fact that our nation's youth do not meet physical activity and nutrition recommendations illustrates the need to develop public policies that create and support environments that allow for regular and routine physical activity and access to healthful foods for our youth. CDC has identified strategies to improve performance on these indicators. What is less clear, however, is how to address those confounding causes which require parental interventions. There are few proven policy and environmental supports related to the familial sphere. Media campaigns or other core prevention activities could offer some options for addressing this issue. Some employers have leveraged workplace initiatives to assist parents in modeling healthy behaviors

23 Dennison BA, Erb TA, Jenkins PL. Television Viewing and Television in Bedroom Association with Overweight Risk among Low-Income Preschool Children. *Pediatrics* 2002;109(6):1028-1035.

24 Lam MM, Dabelea D, Yin X, Ogden LG, Klingensmith GJ, Rewers M, Norris JM. Early-Life Predictors of Higher Body Mass Index in Healthy Children. *Annals of Nutrition and Metabolism* 2009; 56(1):16-22.

25 Mamun AA, Lawlor DA, Alati R, O'Callaghan MJ, Williams GM and Najman, JM. Does Maternal Smoking during Pregnancy Have a Direct Effect on Future Offspring Obesity? Evidence from a Prospective Birth Cohort

at home. In addition, recently implemented Healthcare Effectiveness Data and Information Sets (HEDIS) measures requiring physicians to conduct weight assessments and provide counseling for nutrition and physical activity for children and adolescents²⁶ offers, as a by-product, the opportunity to link medical care providers with community services. Armed with lists of schools allowing after-hours use of athletic facilities, lists of local farmer's markets, and lists of nutrient-rich foods, for example, providers can share resources with parents to create healthy home environments.

Innovative Practices

Successful efforts to combat childhood obesity require a multi-pronged approach aimed at improving population-level indicators of health. These efforts also require the involvement of not just CDC and the federal government, but also states, localities, and our national and local partner organizations. Coordinating our efforts across sectors, including education, agriculture, and transportation, and leveraging our resources to affect policy and environmental changes is necessary if we want to see obesity trends decrease. One such partnership is between CDC, the United States Department of Agriculture, and the United States Department of Education in a joint project called *Making It Happen! School Nutrition Success Stories*. The report from this partnership describes the work of 32 grade K-12 schools and school districts from across the United States to implement innovative strategies to improve the nutritional quality of foods and beverages sold outside of federal meal programs. Another example is CDC's collaboration with the U.S. Department of Transportation, the American Public Health Association, and

Study. American Journal of Epidemiology, 2006: 64(4);317-325.

26 National Commission on Quality Assurance, HEDIS 2010 Measures,

Transportation for America on a project focusing on the nexus between transportation and health, especially as it relates to obesity prevention.

Many cities and localities have started their own childhood obesity initiatives, including New York City's Department of Health and Mental Hygiene. The city developed and implemented a regulation that specifically improves the nutritional and physical activity habits of children in New York's childcare programs. The regulation prohibits the availability of sugar-sweetened beverages; permits only 6 oz. of 100 percent juice per full-day session for children aged 8 months or older; permits children aged 1 to 2 years to have whole milk and then limits milk to 1 percent fat or less for children 2 years of age or older; requires water to be available and accessible to children throughout the day and served with meals; requires children aged 1 year and older to participate in 60 minutes of physical activity per day and children aged 3 years or older to participate in 30 to 60 minutes of structured physical activity per day; restricts television viewing for children under 2 years of age; and limits television viewing by children 2 years of age or older to no more than 60 minutes per day of educational programming or programs that actively engage children in movement.

Another example can be found in Florida, where the Pinellas County Childcare Licensing Board requires a minimum of 30 minutes of physical activity, 5 days per week, for all children as a condition of childcare licensure. And in 2008, the state of Florida passed a law requiring each school district to provide 150 minutes per week of physical education for students in grades K to

5, and for students in the 6th grade when the school has one or more elementary grades.

Beginning with the 2009-2010 school year, the equivalent of one class period per day of physical education for one semester of **each** year is required for students in grades 6 through 8. The effect of these policies is a coordinated effort across jurisdictions and sectors to increase daily physical activity for all children from pre-school through the 6th grade. As a result, many children in Pinellas County now meet the national recommendation of 60 minutes of physical activity daily.

Mississippi has worked with CDC and other partners to strengthen the state's efforts to improve the health of its youth through school health initiatives. Sixty-five Mississippi school districts have replaced deep-fat fryers with combination oven-steamers, decreasing the amount of high-calorie, high-fat foods served in schools. In addition, in just two years, Mississippi reduced the percentage of secondary schools that allowed students to purchase soda or fruit drinks (other than 100 percent juice) from 78 percent in 2006 to 25 percent in 2008.

In Pittsburgh, Pennsylvania, the YMCA of the USA's Pioneering Healthier Communities, with support from CDC, has given children and families with low incomes access to low-cost fruits and vegetables. Its leadership team partnered with Good Apples, the world's first full-scale online produce retailer, which sells high-quality fruits and vegetables for up to 40 percent less than supermarket prices. Five markets that buy produce from Good Apples have been established in YMCA after-school programs that serve under-resourced communities. As a

result, 5,500 children from diverse backgrounds and more than 1,000 teenagers from families with low incomes have access to healthy foods each week.

Next Steps: Informing Programmatic Efforts

HHS is implementing the Communities Putting Prevention to Work (CPPW) program as part of the American Recovery and Reinvestment Act. Through CPPW, CDC will fund communities, states, and territories to advance nutrition, physical activity, and obesity-related policy and environmental strategies with the goal of reducing obesity by up to 2% for adult and youth ages 2-18, thus reversing long term trends.

As they move forward in implementing the program, CPPW grantees have the CDC resource *Recommended Community Strategies and Measurements to Prevent Obesity in the United States* to guide their efforts. This report contains 24 recommended obesity prevention strategies focusing on environmental and policy level change initiatives that can be implemented by local governments and school districts to promote healthy eating and active living. In addition, to assist local governments, states, and policy makers in implementing the obesity prevention strategies, a detailed Implementation and Measurement Guide is also available. The guide includes measurement data protocols, a listing of useful resources, and examples of communities that successfully implemented each obesity prevention strategy. These evidence-based interventions provide a rich opportunity to conduct surveillance of state and community investments in prevention practices and to evaluate the efficacy and impact of those practices. .

These important strategy and measurement resources were released at CDC's inaugural conference on obesity prevention and control, called *Weight of the Nation*, in July 2009. With over 1,000 people in attendance, the conference provided a forum to highlight progress in the prevention and control of obesity through policy and environmental strategies framed around four intervention settings: community, medical care, school, and workplace.

Since *Weight of the Nation*, CDC continues to provide technical assistance to states, local governments, and communities on nutrition, physical activity, and obesity-related policy and environmental strategies to reduce population-level obesity rates. Examples of strategies that have the potential to decrease the prevalence of youth obesity include:

- o Seeking to eliminate so-called "food deserts" in urban and underserved areas where there is little or no access to healthy foods;
- o Expanding public transportation services and improve road conditions to allow for non-vehicle transit;
- o Expanding physical activity opportunities;
- o Improving and increasing access to healthy foods in schools and communities; and
- o Exploring ways to minimize the negative impact on young people's health of food and beverage marketing.

Since 1979, the Healthy People planning process has set and monitored science-based 10-year national objectives for promoting health and preventing disease. These national health objectives meet a broad range of health needs, encourage collaboration across sectors, guide

individuals toward making informed health decisions, and measure the impact of the government's prevention activities. The development process strives to maximize transparency, public input, and stakeholder dialogue to ensure that Healthy People is relevant to diverse public health needs and seizes opportunities to achieve its goals. Drawing on the expertise of a Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020, a Federal Interagency Workgroup, and structured public input, Healthy People 2020 will provide a framework to address risk factors and determinants of health and the diseases and disorders that affect our communities in the decade ahead. Proposed and developmental Healthy People 2020 objectives, including objectives for nutrition and weight status and for physical activity and fitness, are available for public comment through December 31, 2009. Final Healthy People 2020 objectives will be launched in late 2010.

Conclusion

No single cause or factor has been identified for the epidemic of obesity among children and adolescents. Indeed, many factors have contributed to the unfavorable trends in physical activity and nutrition that have fueled the obesity epidemic—meaning that multiple strategies are required to reverse the epidemic.

We have learned a great deal about effective strategies for promoting physical activity and healthy eating among young people. Our challenge now is to implement what we know through the active support and involvement of all sectors of society at the community, state, and national levels.

CDC is committed to doing all that we can to help our young people enjoy good health, both now and throughout their lives. I thank you for your interest and the opportunity to share information about the childhood obesity epidemic. I would be happy to answer any questions.

Thank you.