ISSUE REPORT

F as in Fat:

HOW OBESITY POLICIES ARE FAILING IN AMERICA 2008







Trust for America's Health
WWW.HEALTHYAMERICANS.ORG

Robert Wood Johnson Foundation

AUGUST 2008

PREVENTING EPIDEMICS.
PROTECTING PEOPLE.

TRUST FOR AMERICA'S HEALTH IS A NON-PROFIT, NON-PARTISAN ORGANIZATION DEDICATED TO SAVING LIVES BY PROTECTING THE HEALTH OF EVERY COMMUNITY AND WORKING TO MAKE DISEASE PREVENTION A NATIONAL PRIORITY.

The Robert Wood Johnson Foundation focuses on the pressing health and health care issues facing our country. As the nation's largest philanthropy devoted exclusively to improving the health and health care of all Americans, the Foundation works with a diverse group of organizations and individuals to identify solutions and achieve comprehensive, meaningful and timely change. For more than 35 years the Foundation has brought experience, commitment, and a rigorous, balanced approach to the problems that affect the health and health care of those it serves. Helping Americans lead healthier lives and get the care they need-the Foundation expects to make a difference in our lifetime.
For more information, visit www.rwjf.org.

REPORT AUTHORS

Jeffrey Levi, PhD.
Executive Director
Trust for America's Health
and
Associate Professor in the Department of Health Policy
The George Washington University School of Public Health and Health Services

Serena Vinter, MHS
Lead Author and Senior Research Associate
Trust for America's Health

Rebecca St. Laurent, JD
Health Policy Research Assistant
Trust for America's Health

Laura M. Segal, MA
Director of Public Affairs
Trust for America's Health

PEER REVIEWERS

TFAH thanks the reviewers for their time, expertise, and insights. The opinions expressed in this report do not necessarily represent the views of these individuals or their organizations.

Marcus Plescia, M.D.
Chief, Chronic Disease and Injury Section
North Carolina Division of Public Health

David P. Hoffman, M.Ed.
Director, Bureau of Chronic Disease Services
New York State Department of Health

Michael Eriksen, Sc.D.
Director and Professor
Institute of Public Health, Georgia State University

TABLE OF CONTENTS

Introduction

Obesity is one of the most serious health problems in the United States today. Adult obesity rates have doubled since 1980, from 15 percent to 30 percent.[1] Two-thirds of adults are now either overweight or obese.[2] Childhood obesity rates have nearly tripled since 1980, from 6.5 percent to 16.3 percent.[3,4] Additionally, the obesity epidemic is taking a toll on the U.S. economy by adding billions of additional dollars in health care costs and hurting our country's ability to compete in the global economy. It is clear that obesity is impacting the entire country.

Rising obesity rates have significant health consequences:

- Adult rates for type 2 diabetes have grown from 5.2 percent in 1980 to more than 8 percent now.[5] Approximately 20 million Americans have type 2 diabetes, and another 54 million more have pre-diabetes, putting them at high risk for developing diabetes.[6]
- After years of declines in heart disease and hypertension due to the development of new medical treatments and drugs, these health problems are experiencing a resurgence. One in 4 Americans has some form of heart disease, and one in 3 Americans has high blood pressure.[7]
- Obesity and overweight are contributing factors to over 20 chronic diseases, including some cancers, arthritis, and even Alzheimer's disease and dementia.[8, 9, 10]
- Increasing evidence shows that maternal obesity adds major complications during pregnancy, putting babies at increased risk for pre-term birth and infant mortality.[11]
- Obese children and teenagers are developing diseases that were formerly only seen in adults. For instance, approximately 176,500 individuals under the age of 20 have type 2 diabetes, and 2 million adolescents aged 12-19 have pre-diabetes.[12] Obese and overweight children are more likely to become overweight and obese adults and are on a track for poor health throughout their adult lives.[13,14,15] Overall, this generation of children could be the first to have shorter, less healthy lives than their parents.

Obesity also has created a major strain on the health care system. More than a quarter of the nation's health care costs are related to obesity and physical inactivity. Direct health care costs of obesity are estimated to be more than $61 billion annually in the United States, while the health care costs associated with physical inactivity topped $76 billion in 2000.[16] Our workforce has become less healthy and productive, and businesses are struggling with the increased costs of health insurance coverage.

F AS IN FAT 2008

This is the fifth annual edition of *F as in Fat: How Obesity Policies Are Failing in America*, which tracks trends in obesity-related rates and policies. This report finds that much progress has been made during the past 5 years in bringing attention to the obesity problem and in better understanding the reasons for the rise in obesity rates. In addition, many communities and states have been taking action with promising programs to make physical activity and good nutrition more accessible to more Americans.

However, this report also concludes that until these promising programs are widely adopted and there is a steady stream of funding to sustain them, only limited progress will be made. Overall, our country is failing to address the obesity epidemic in proportion to the threat that it poses. America's future depends on the health of our children, but we're failing them by not treating the obesity epidemic with the urgency it deserves.

In the past year, there has been one reason for cautious optimism. According to the latest data from the U.S. Centers for Disease Control and Prevention's National Health and Nutrition Examination Survey (NHANES), after years of increases, childhood and adolescent obesity rates remained level between 2003-2004 and 2005-2006.[17] It is too early to determine if this is a result of obesity-prevention programs, but it does provide encouragement.

The trends for adults continue to be even more complicated. This year's *F as in Fat: How Obesity Policies Are Failing in America* analysis finds that adult obesity rates climbed in 37 states. Rates did not decline in any state. Experts estimate that if we keep on the current course, 75 percent of Americans will be overweight or obese by 2015.[18]

Many experts believe that America has been slow to take action to deal with obesity because it has traditionally been seen as an issue of personal responsibility. In this view individuals make decisions about what to eat and how active to be, and they should bear the burden and blame alone if they make unhealthy choices.

But it is clear now that, while personal responsibility is an important part of the equation, there are many factors beyond individual control that have contributed to the rising obesity rates. Some of the most significant factors include the high cost of healthy foods, the location of grocery stores, access to safe places to exercise, and the availability of preventive health care services. We need to find ways to make healthy choices easy choices. And just as smoking has become less culturally acceptable, we need to shift cultural norms away from unhealthy values like oversized portions, the popularization of foods with minimum nutritional quality, and the overuse of TV and video games, which encourage physical inactivity.

Addressing the obesity crisis must be a shared responsibility. This report concludes with a recommendation to create a ***National Strategy to Combat Obesity*** that will involve individuals and families, communities, schools, employers, businesses, insurers, and government to find ways to address the epidemic. This strategy sets national goals, starting with a goal of reversing the trend of childhood obesity by 2015.

F AS IN FAT 2008: KEY FINDINGS

Obesity Rates and Related Trends

- Adult obesity rates continued to rise in 37 states. Rates did not decrease in any state. Rates rose for a second year in a row in 24 states, and rose for a third year in a row in 19 states. Mississippi had the highest rate -- 31.7 percent, Colorado had the lowest rate --18.4 percent.
- More than 20 percent of adults are obese in every state except Colorado. However, the rate in Colorado did increase from 17.6 to 18.4 percent. More than 25 percent of adults are obese in 28 states. Last year, only 19 states had rates above 25 percent. And, rates now exceed 30 percent in 3 states -- Alabama, Mississippi, and West Virginia. Last year, only Mississippi exceeded 30 percent. In 1991, no state had an obesity rate higher than 20 percent. In 1980, the national average of obese adults was 15 percent.
- Obesity and obesity-related disease rates remain the highest in Southern states. Nine of the top 10 most obese states were in the South. In addition, all 10 states with the highest rates of diabetes and hypertension, 9 of the 10 states with the highest rates of physical inactivity, and 8 of the 10 states with the highest rates of poverty are in the South. Northeastern and Western states continued to have the lowest obesity rates.
- Type 2 diabetes rates rose in 26 states. In 4 states, more than 10 percent of adults now have type 2 diabetes.
- According to the U.S. Food and Drug Administration (FDA), an estimated 50 million Americans go on diets each year, but fewer than 5 percent manage to maintain any long-term weight loss.[19]

State Responsibilities and Policies

- Currently, 40 states have plans in place with specific strategies and goals to lower the prevalence of overweight, obesity and obesity-related chronic diseases in each state. Two states and D.C. have childhood obesity plans, and at least 8 more have drafts of plans in the works, which they expect to make available to the public over the next year or 2.
- All 50 states and D.C. have some form of legislation related to physical education and/or physical activity in schools, however only 13 states were found to have enforceability language. Of those states, 4 included sanctions or penalties within their language, and 10 included collection and reporting of information regarding performance language, with one state containing both types of language.
- Of the 18 states that have school meal requirements exceeding the USDA standards, only 7 have specific enforceability language, with only one including sanctions or penalties for noncompliance.
- Ten states did not address nutritional assessment and counseling reimbursement for children with overweight and obesity as part of Medicaid's Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefits. In these 10 states, neither did the EPSDT provider manual specifically mention whether Medicaid would pay for these services nor were Current Procedural Terminology (CPT) codes listed to bill for these services.[20] In these states, it only can be assumed that these services are not likely to be reimbursed.
- Only 11 states provide strong evidence that they will reimburse for nutritional and behavioral therapy in children with overweight and obesity as part of Medicaid's Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefits, meaning the EPSDT provider manual specifies that the state will pay for nutritional assessment and counseling and Current Procedural Terminology (CPT) codes are listed to bill for these services.

F AS IN FAT 2008: KEY FINDINGS

- Only 2 states' Medicaid manuals provided guideline references for treatment of obesity in adults.
- Twenty-six states explicitly cover nutritional assessment and consultation for obese adults under Medicaid, while 20 explicitly do not.
  - ▲ Drug therapy to treat obesity is the least frequently covered and discussed treatment category in Medicaid; only 10 states cover it while 33 make no mention of it within their provider manuals.
  - ▲ Bariatric surgery is covered by 45 state Medicaid plans.
- On the group insurance market, 35 states expressly allow "health status" or "obesity" to be used as a factor for rate adjustments in the small group market. The majority used "health status" as an adjustment factor.
  - ▲ Only 9 states prohibit the use of health status or obesity as a factor for rate adjustments in the small group market. These states used community or adjusted community rating.
- Only 5 states provide for coverage of one or more treatments for obesity in both the small group and individual insurance markets. The vast majority of states do not provide any coverage of obesity related treatments and the few that do cover only those treatments for morbid obesity do so as long as individuals adhere to the caveats imposed in the coverage requirement.

Obesity Related Laws

	Number of States That Had This Law as of June 30, 2008	Number of States That Added This Law Since July 1, 2007	Number of States That Had This Law in July 2004
Sets nutritional standards for school lunches, breakfasts, and snacks that are stricter than the existing USDA requirements.	18	1	2
Sets nutritional standards for competitive foods sold a la carte, in vending machines, in school stores, or in bake sales in schools.	25	3	4
Sets limits when and where competitive foods may be sold beyond federal requirements.	27	1	23
Sets physical education requirements.	50 + D.C.	0	50 + D.C.
BMI or health information collected.	17	1	0
Sets health education requirements.	48	0	44
Taxes some foods or soft drinks that are of low nutritional value.	17 + D.C.	0	17 + D.C.
Limits obesity-related liability.	24	0	11

Federal Responsibilities and Policies

- The U.S. Department of Agriculture (USDA) school meal program has yet to adopt the recommendations from the national 2005 Dietary Guidelines. An estimated 39 million children receive meals through USDA school meal programs, often multiple meals (breakfast, lunch, and possibly a snack) on weekdays.
- In the past year, USDA made significant changes to the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), adding fruits, vegetables, and whole grains to the list of grocery items covered. This was the program's first major overhaul since 1974.
- The House and Senate overrode President Bush's veto to pass into law the Food, Conservation, and Energy Act of 2008. This legislation reauthorizes farm and nutrition programs for the next 5 years. It includes an additional $10.36 billion over current spending levels for nutrition programs.

Obesity Rates and Related Trends

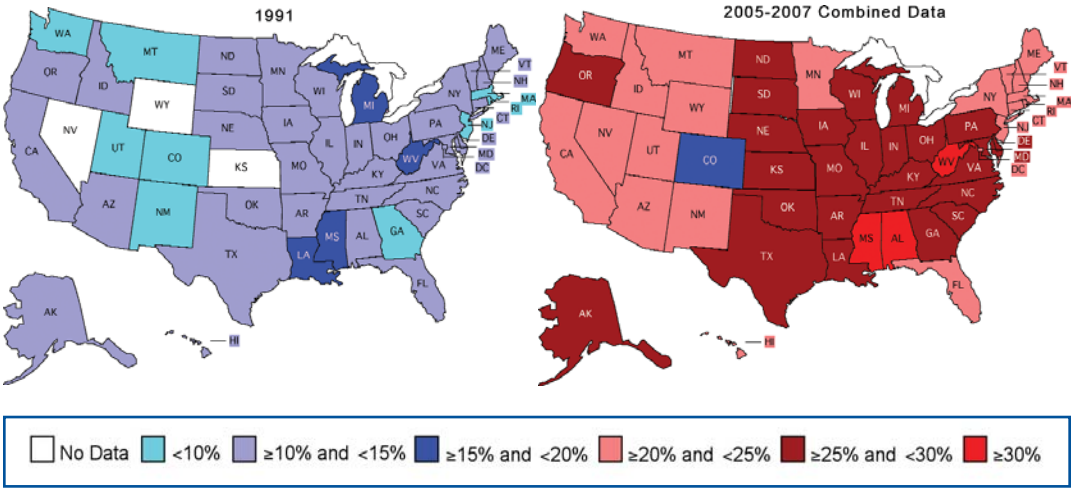
SECTION 1

Two-thirds of American adults are either overweight or obese.[21] Adult obesity rates have grown from 15 percent in 1980 to nearly 33 percent in 2003-04 based on a national survey.[22]

OBESITY TRENDS* AMONG U.S. ADULTS

BRFSS, 1991 and 2005-2007 Combined Data

(*BMI >30, or about 30 lbs overweight for 5' 4" person)



Source: Behavioral Risk Factor Surveillance System, CDC.

A. ADULT OBESITY AND OVERWEIGHT RATES

Rates of obesity continued to rise across the country during the past year. Thirty-seven states saw an increase in obesity, and 24 of these states experienced an increase for the second year in a row. Nineteen states experienced an increase for the third straight year. Obesity rates did not decrease in a single state.

Last year Mississippi was the only state with obesity rates over 30 percent, but this year Mississippi, still ranked most obese at 31.7 percent, has been joined by West Virginia and Alabama -- 30.6 percent and 30.1 percent respectively. Mississippi also has the highest rate of physical inactivity and hypertension, and tied for the second highest rate of diabetes. Alabama and West Virginia also ranked in the top 10 for highest rates of physical inactivity, hypertension and diabetes.

Now, only 22 states have rates of obesity less than 25 percent, compared with 31 from last year -- losing 9 states to the 25-percent-or-greater category. In Colorado, the leanest and only state under 20 percent, rates of obesity increased from 17.6 percent to 18.4 percent.

The U.S. Department of Health and Human Services (HHS) set a national goal to reduce adult obesity rates to 15 percent in every state by the year 2010. Currently, all states and the District of Columbia exceed 15 percent.

CHART ON OBESITY AND OVERWEIGHT RATES

ADULTS

States	Obesity			Overweight & Obesity	Diabetes		Physical Inactivity	
	2005-2007 3 Yr. Ave. Percentage (95% Conf Interval)	Ranking	Percentage Point Change 2004-2006 to 2005-2007	2005-2007 3 Yr. Ave. Percentage (95% Conf Interval)	2005-2007 3 Yr. Ave. Percentage (95% Conf Interval)	Ranking	2005-2007 3 Yr. Ave. Percentage (95% Conf Interval)	Ranking
Alabama	30.1% (+/- 1.2)	3	0.7	65.4% (+/- 1.3)	10.0% (+/- 0.6)*	4	29.6% (+/- 1.1)	6
Alaska	27.3% (+/- 1.5)	14	1.5	64.5% (+/- 1.7)	5.5% (+/- 0.7)*	50	20.9% (+/- 1.4)	39
Arizona	23.3% (+/- 1.5)*	38	1.6*	59.5% (+/- 1.7)*	8.1% (+/- 0.8)**	19	22.4% (+/- 1.4)	30
Arkansas	28.1% (+/- 0.9)*	8	1.1*	64.7% (+/- 1.0)*	8.5% (+/- 0.5)*	14	29.1% (+/- 0.9)	7
California	23.1% (+/- 0.9)	41	0.4	59.4% (+/- 1.0)	7.6% (+/- 0.5)	27	23.3% (+/- 0.9)	23
Colorado	18.4% (+/- 0.7)*	51	0.8**	55.0% (+/- 0.9)*	5.1% (+/- 0.3)*	51	17.3% (+/- 0.6)	50
Connecticut	20.8% (+/- 0.8)*	49	0.7***	58.7% (+/- 1.0)*	6.8% (+/- 0.4)*	38	20.2% (+/- 0.8)	42
Delaware	25.9% (+/- 1.2)*	21	2.4***	63.9% (+/- 1.3)*	8.4% (+/- 0.6)*	15	22.3% (+/- 1.0)	31
D.C.	22.1% (+/- 1.0)	43	-0.1	55.0% (+/- 1.3)	7.7% (+/- 0.6)	24	21.9% (+/- 1.0)	34
Florida	23.3% (+/- 0.7)	38	0.4	60.8% (+/- 0.8)*	8.7% (+/- 0.4)	12	25.8% (+/- 0.7)	12
Georgia	27.5% (+/- 1.2)*	11	1.3*	63.3% (+/- 1.0)*	9.2% (+/- 0.5)**	9	25.5% (+/- 0.9)	14
Hawaii	20.7% (+/- 0.8)	50	0.5	55.3% (+/- 1.0)*	7.7% (+/- 0.5)	24	18.9% (+/- 0.8)	46
Idaho	24.6% (+/- 0.9)*	31	1.4*	61.4% (+/- 1.1)*	7.2% (+/- 0.5)*	33	20.6% (+/- 0.8)	40
Illinois	25.3% (+/- 0.9)*	26	0.9*	61.8% (+/- 1.1)*	8.3% (+/- 0.5)*	17	23.7% (+/- 0.9)	22
Indiana	27.5% (+/- 0.9)	11	0.6	62.8% (+/- 1.0)	8.3% (+/- 0.5)	17	25.5% (+/- 0.8)	14
Iowa	26.3% (+/- 0.9)*	19	1.4*	63.4% (+/- 1.0)*	7.0% (+/- 0.5)	35	23.0% (+/- 0.8)	25
Kansas	25.8% (+/- 0.7)*	23	1.5**	62.3% (+/- 0.8)*	7.2% (+/- 0.4)**	33	23.3% (+/- 0.7)	23
Kentucky	28.4% (+/- 1.0)*	7	1.0***	66.8% (+/- 1.1)*	9.6% (+/- 0.6)**	7	30.7% (+/- 1.0)	4
Louisiana	29.5% (+/- 1.0)*	4	1.3*	64.2% (+/- 1.1)*	9.5% (+/- 0.5)*	8	31.4% (+/- 1.0)	2
Maine	23.7% (+/- 0.9)	34	0.6	60.8% (+/- 1.1)	7.4% (+/- 0.5)	30	21.1% (+/- 0.9)	38
Maryland	25.2% (+/- 0.8)*	27	0.8***	61.5% (+/- 0.9)*	7.8% (+/- 0.4)*	23	23.0% (+/- 0.8)	25
Massachusetts	20.9% (+/- 0.6)*	48	1.1***	56.8% (+/- 0.8)*	6.7% (+/- 0.3)*	41	21.8% (+/- 0.6)	35
Michigan	27.7% (+/- 0.8)*	10	0.9**	63.9% (+/- 0.9)*	8.6% (+/- 0.4)*	13	22.0% (+/- 0.7)	33
Minnesota	24.8% (+/- 1.0)*	30	1.1*	61.9% (+/- 1.2)	5.7% (+/- 0.5)	48	15.7% (+/- 0.9)	51
Mississippi	31.7% (+/- 1.0)*	1	1.1***	67.4% (+/- 1.0)*	10.6% (+/- 0.5)*	2	31.8% (+/- 0.9)	1
Missouri	27.4% (+/- 1.1)*	13	1.1***	63.3% (+/- 1.3)	7.7% (+/- 0.5)	24	24.7% (+/- 1.1)	18
Montana	21.7% (+/- 0.8)*	45	1.0*	59.6% (+/- 1.1)*	6.2% (+/- 0.4)	47	20.4% (+/- 0.9)	41
Nebraska	26.5% (+/- 0.9)*	18	1.1***	63.9% (+/- 1.1)*	7.3% (+/- 0.4)**	32	22.3% (+/- 0.8)	31
Nevada	23.6% (+/- 1.3)	35	1.2	61.8% (+/- 1.5)	7.6% (+/- 0.7)	27	26.1% (+/- 1.3)	11
New Hampshire	23.6% (+/- 0.8)*	35	1.2***	60.8% (+/- 1.0)*	7.0% (+/- 0.4)	35	20.1% (+/- 0.7)	43
New Jersey	22.9% (+/- 0.7)*	42	0.7***	60.5% (+/- 0.9)*	8.1% (+/- 0.4)*	19	27.4% (+/- 0.7)	10
New Mexico	23.3% (+/- 0.9)*	38	1.2***	60.3% (+/- 1.0)*	7.5% (+/- 0.5)**	29	22.5% (+/- 0.8)	28
New York	23.5% (+/- 0.8)*	37	1.2*	60.0% (+/- 1.0)*	8.0% (+/- 0.5)	21	25.8% (+/- 0.8) ^	12
North Carolina	27.1% (+/- 0.6)*	16	1.5***	63.4% (+/- 0.7)*	8.9% (+/- 0.3)	10	24.6% (+/- 0.6)	20
North Dakota	25.9% (+/- 1.0)	21	0.8	64.5% (+/- 1.1)	6.5% (+/- 0.5)	43	22.5% (+/- 0.9)	28
Ohio	26.9% (+/- 1.1)	17	0.9	63.3% (+/- 1.2)	8.0% (+/- 0.5)*	21	24.8% (+/- 1.0)	17
Oklahoma	28.1% (+/-0.8)*	8	1.3***	64.2% (+/- 0.9)*	9.7% (+/- 0.5)**	6	30.0% (+/- 0.8)*	5
Oregon	25.0% (+/- 0.8)*	29	1.7***	60.8% (+/- 1.0)*	6.8% (+/- 0.4)	38	17.4% (+/- 0.7)	48
Pennsylvania	25.7% (+/- 0.8)*	24	1.2*	61.9% (+/- 1.0)	8.4% (+/- 0.5)	15	24.0% (+/- 0.8)	21
Rhode Island	21.4% (+/- 1.0)*	46	0.9***	60.4% (+/- 1.2)*	7.0% (+/- 0.5)	35	24.7% (+/- 1.0)	18
South Carolina	29.2% (+/- 0.8)*	5	1.3***	65.1% (+/- 0.8)*	9.8% (+/- 0.5)	5	25.1% (+/- 0.7)	16
South Dakota	26.1% (+/- 0.9)*	20	1.2***	64.2% (+/- 1.0)*	6.5% (+/- 0.4)	43	23.0% (+/- 0.8)*	25
Tennessee	29.0% (+/- 1.2)*	6	1.2**	65.0% (+/- 1.3)*	10.6% (+/- 0.7)*	2	31.1% (+/- 1.1)	3
Texas	27.2% (+/- 0.9)*	15	0.9*	64.1% (+/- 1.0)*	8.8% (+/- 0.5)*	11	28.1% (+/- 0.9)	8
Utah	21.8% (+/- 0.9)	44	0.7	56.4% (+/- 1.2)	5.7% (+/- 0.4)	48	19.1% (+/- 0.8)*	44
Vermont	21.1% (+/- 0.7)*	47	1.1*	56.9% (+/- 0.9)*	6.3% (+/- 0.4)*	46	18.5% (+/- 0.7)	47
Virginia	25.2% (+/- 1.1)	27	0.7	61.6% (+/- 1.3)	7.4% (+/- 0.5)	30	21.6% (+/- 0.9)	37
Washington	24.5% (+/- 0.5)*	32	1.2***	60.7% (+/- 0.6)*	6.8% (+/- 0.3)*	38	17.4% (+/- 0.4)	48
West Virginia	30.6% (+/- 1.1)*	2	0.9**	66.8% (+/- 1.1)*	11.1% (+/- 0.6)	1	27.5% (+/- 1.0)*	9
Wisconsin	25.5% (+/- 1.0)	25	0.7	62.4% (+/- 1.1)	6.4% (+/- 0.4)	45	19.1% (+/- 0.8)	44
Wyoming	24.0% (+/- 0.8)*	33	1.2***	61.7% (+/- 1.0)*	6.6% (+/- 0.5)	42	21.8% (+/- 0.8)	35

Source: Behavior Risk Factor Surveillance System (BRFSS), CDC. To "stabilize" BRFSS data in order to rank states, TFAH combined 3 years of data (See Appendix A for more information on the methodology used for the rankings.). * & Red indicates a statistically significant change ($P < 0.05$) from 2004-2006 to 2005-2007 (for Hypertension figures - only collected every 2 years - from 2001-2005 to 2003-2007). **State increased significantly in the past 2 years. ***State increased significantly in the past 3 years. ^ Statistically significant DECREASE.

AND OVERWEIGHT RATES AND RELATED HEALTH INDICATORS IN THE STATES

CHILDREN AND ADOLESCENTS

Hypertension		Poverty	2007 YRBS			2006 PedNSS	2003-2004 National Survey of Children's Health		
2003-2007 3 Yr. Ave. Percentage (95% Conf Interval)	Ranking	2004-2006 3 Yr. Ave. Percentage (90% Conf Interval)	Percentage of Obese High School Students (95% Conf Interval)	Percentage of Overweight High School Students (95% Conf Interval)	Percentage High School Students Not Meeting Recommended Physical Activity Level	Percentage Obese Low-Income Children Ages 2-5	Percentage Obese Ages 10-17	Ranking	Percentage Participating in Physical Activity ≥ 20 mins Days a Week or More 3 Ages 10-17
33.5% (+/- 1.0)	2	16.0% (+/- 1.5)	N/A	N/A	N/A	13.70%	16.70%	11	77.60%
23.9% (+/- 1.4)*	48	9.3% (+/- 1.3)	11.1% (+/-2.2)	16.2% (+/- 2.7)	57.50%	N/A	11.10%	44	75.50%
24.2% (+/- 1.2)	46	14.7% (+/- 1.4)	11.7% (+/- 2.5)	14.2% (+/- 2.3)	68.00%	13.50%	12.20%	38	72.70%
31.5% (+/- 0.9)*	5	15.6% (+/- 1.6)	13.9% (+/- 2.5)	15.8% (+/- 2.3)	58.00%	13.20%	16.40%	12	71.90%
27.2% (+/- 0.9)**	24	12.9% (+/- 0.5)	N/A	N/A	N/A	17.00%	13.20%	32	74.90%
21.7% (+/- 0.7)	50	10.4% (+/- 1.4)	N/A	N/A	N/A	9.60%	9.90%	49	70.40%
25.7% (+/- 0.8)**	35	9.1% (+/- 1.3)	12.3% (+/-1.6)	13.3% (+/- 1.9)	54.90%	16.20%	12.30%	37	68.50%
29.2% (+/- 1.1)*	13	9.2% (+/- 1.3)	13.3% (+/- 1.6)	17.5% (+/- 1.7)	59.60%	N/A	14.80%	19	65.70%
27.9% (+/- 1.2)	20	18.8% (+/- 2.0)	17.7% (+/- 2.0)	17.8% (+/- 2.1)	69.80%	15.40%	22.80%	1	62.10%
29.3% (+/- 0.9)*	12	11.4% (+/- 0.7)	11.2% (+/- 1.4)	15.2% (+/- 1.3)	61.60%	13.90%	14.40%	21	68.90%
29.4% (+/- 0.8)*	11	13.3% (+/- 1.0)	13.8% (+/- 2.0)	18.2% (+/- 2.1)	56.20%	14.50%	16.40%	12	69.10%
26.1% (+/- 0.9)*	30	8.8% (+/- 1.2)	15.6% (+/- 2.9)	14.3% (+/- 2.7)	65.70%	N/A	13.30%	29	75.20%
25.4% (+/- 0.9)*	39	9.8% (+/- 1.3)	11.1% (+/- 1.7)	11.7% (+/- 2.6)	53.20%	12.40%	10.10%	47	70.50%
26.7% (+/- 0.9)*	28	11.5% (+/- 0.8)	12.9% (+/- 2.1)	15.7% (+/- 2.0)	56.50%	14.40%	15.80%	14	71.10%
28.1% (+/-0.8)*	19	11.6% (+/- 1.2)	13.8% (+/-2.0)	15.3% (+/- 1.8)	56.30%	14.00%	15.60%	15	70.70%
26.3% (+/- 0.8)	29	10.8% (+/- 1.4)	11.3% (+/- 3.1)	13.5% (+/- 2.2)	50.10%	14.60%	12.50%	35	74.80%
25.6% (+/- 0.7)**	36	12.2% (+/- 1.5)	11.1% (+/- 2.0)	14.4% (+/- 2.2_	54.90%	13.80%	14.00%	24	76.60%
30.1% (+/- 0.9)	9	16.5% (+/- 1.6)	15.6% (+/- 1.7)	16.4% (+/- 1.6)	67.10%	17.40%	20.60%	3	68.40%
30.9% (+/- 1.0)**	7	17.4% (+/- 1.7)	N/A	N/A	N/A	N/A	17.20%	9	75.20%
27.6% (+/- 1.0)*	22	11.5% (+/- 1.5)	12.8% (+/- 2.7)	13.1% (+/- 2.4)	56.90%	N/A	12.70%	34	67.30%
27.7% (+/- 0.8)*	21	9.3% (+/- 1.1)	10.9% (+/- 2.4)	15.2% (+/- 2.8)	69.40%	14.80%	13.30%	29	61.70%
25.8% (+/- 0.6)**	33	10.5% (+/- 1.1)	11.1% (+/- 1.6)	14.6% (+/- 2.0)	59.00%	16.70%	13.60%	27	67.60%
28.7% (+/- 0.8)**	16	12.9% (+/- 1.0)	12.4% (+/- 2.0)	16.5% (+/- 2.0)	56.00%	13.30%	14.50%	20	69.60%
22.6% (+/- 0.9)	49	7.7% (+/- 1.1)	N/A	N/A	N/A	13.10%	10.10%	47	72.80%
34.5% (+/- 0.9)*	1	19.8% (+/- 1.7)	17.9% (+/- 2.5)	17.9% (+/- 1.9)	63.90%	N/A	17.80%	8	69.40%
29.1% (+/- 1.1)**	15	11.7% (+/- 1.2)	12.0% (+/- 3.0)	14.3% (+/- 1.5)	56.50%	13.60%	15.60%	15	72.10%
24.5% (+/- 0.9)	45	13.8% (+/- 1.5)	10.1% (+/- 1.1)	13.3% (+/- 1.3)	55.10%	12.10%	11.10%	44	76.40%
25.5% (+/- 0.8)**	37	9.7% (+/- 1.3)	N/A	N/A	N/A	13.10%	11.90%	41	74.20%
26.0% (+/- 1.2)	31	10.4% (+/- 1.4)	11.0% (+/- 2.3)	14.5% (+/- 1.9)	53.80%	14.00%	12.40%	36	72.60%
24.9% (+/- 0.7)*	43	5.5% (+/- 1.0)	11.7% (+/- 2.0)	14.4% (+/-2.0)	53.10%	15.90%	12.90%	33	68.10%
27.2% (+/- 0.7)*	24	7.9% (+/- 0.8)	N/A	N/A	N/A	18.10%	13.70%	26	66.80%
24.0% (+/- 0.8)**	47	17.1% (+/- 1.8)	10.9% (+/- 2.0)	13.5% (+/- 2.1)	56.40%	11.50%	16.80%	10	69.90%
27.0% (+/- 0.8)	26	14.5% (+/- 0.8)	10.9% (+/- 1.1)	16.3% (+/- 1.3)	62.00%	15.30%	15.30%	18	68.20%
29.8% (+/- 0.7)**	10	13.8% (+/- 1.1)	12.8% (+/- 2.4)	17.1% (+/- 1.9)	55.70%	15.40%	19.30%	5	74.40%
25.1% (+/- 0.9)*	42	10.8% (+/- 1.4)	10.0% (+/- 1.9)	13.7% (+/- 3.3)	52.20%	N/A	12.10%	39	75.40%
28.2% (+/- 0.9)*	17	12.0% (+/- 0.9)	12.4% (+/- 2.2)	15.0% (+/-3.3)	55.30%	11.70%	14.20%	22	69.90%
30.7% (+/- 0.7)**	8	13.9% (+/- 1.5)	14.7% (+/- 1.9)	15.2% (+/- 1.9)	50.40%	N/A	15.40%	17	73.30%
25.5% (+/- 0.8)*	37	11.9% (+/- 1.5)	N/A	N/A	N/A	14.30%	14.10%	23	77.00%
28.2% (+/- 0.8)	17	11.3% (+/- 0.8)	N/A	N/A	N/A	11.10%	13.30%	29	67.90%
29.2% (+/- 1.0)**	13	11.3% (+/- 1.5)	10.7% (+/- 2.2)	16.2% (+/- 1.8)	58.10%	16.50%	11.90%	41	63.80%
31.3% (+/- 0.7)**	6	13.7% (+/- 1.5)	14.4% (+/- 2.9)	17.1% (+/- 2.3)	62.00%	13.70%	18.90%	7	67.50%
25.8% (+/- 0.7)*	33	12.0% (+/- 1.3)	9.1% (+/- 2.6)	14.5% (+/- 2.1)	56.00%	14.30%	12.10%	39	73.20%
32.1% (+/- 1.1)*	4	15.2% (+/- 1.3)	16.9% (+/- 2.0)	18.1% (+/- 2.1)	58.00%	13.10%	20.00%	4	65.10%
26.9% (+/- 0.7)*	27	16.4% (+/- 0.8)	15.9% (+/- 2.1)	15.6% (+/- 2.0)	54.80%	15.60%	19.10%	6	73.90%
20.3% (+/- 0.8)	51	9.5% (+/- 1.2)	8.7% (+/- 3.8)	11.7% (+/- 2.5)	52.50%	N/A	8.50%	51	71.70%
24.6% (+/- 0.8)**	44	7.7% (+/- 1.3)	11.8% (+/-3.3)	14.5% (+/- 2.8)	52.00%	12.90%	11.30%	43	73.50%
27.3% (+/- 1.0)**	23	9.1% (+/- 1.0)	N/A	N/A	N/A	17.00%	13.80%	25	72.50%
25.4% (+/- 0.4)*	39	9.9% (+/- 1.1)	N/A	N/A	N/A	14.20%	10.80%	46	72.90%
33.2% (+/- 1.0)	3	15.0% (+/- 1.5)	14.7% (+/- 2.4)	17.0% (+/- 3.2)	57.20%	12.70%	20.90%	2	77.10%
25.9% (+/- 0.9)*	32	10.9% (+/- 1.2)	11.1% (+/- 1.6)	14.0% (+/- 1.4)	61.70%	13.00%	13.50%	28	75.10%
25.2% (+/- 0.8)*	41	10.2% (+/- 1.4)	9.3% (+/-1.5)	11.4% (+/- 1.4)	51.80%	N/A	8.70%	50	76.80%

Source: U.S. Census Bureau, Current Population Survey, 2005 to 2007 Annual Social and Economic Supplements. <http://www.census.gov/hhes/www/poverty/poverty06/state.html>

Source: Youth Risk Behavior Survey (YRBS) 2007, CDC. YRBS data are collected every 2 years. Percentages are as reported on the CDC website and can be found at <http://www.cdc.gov/HealthyYouth/yrbs/index.htm>. Note that previous YRBS reports used the term "overweight" to describe youth with a BMI at or above the 95th percentile for age and sex and "at risk for overweight" for those with a BMI at or above the 85th percentile, but below the 95th percentile. However, this report uses the terms "obese" and "overweight" based on the 2007 recommendations from the Expert Committee on the Assessment, Prevention, and Treatment of Child and Adolescent Overweight and Obesity convened by the American Medical Association. Students "not meeting recommended levels of physical activity" is the difference between 100 percent and the percentage of students "who met recommended levels of physical activity." • Source: 2006 National PedNSS Tables, number 6D, available at: <http://www.cdc.gov/pednss/pednss_tables/pdf/national_table6.pdf>.Source: National Survey of Children's Health, 2003. Overweight and Physical Activity Among Children: A Portrait of States and the Nation 2005, Health Resources and Services Administration, Maternal and Child Health Bureau.

Southern states continue to fill the top 10 most obese states in the country, with the exception of Michigan. Mississippi, West Virginia and Alabama stayed in the same positions as last year.

States with the Highest Obesity Rates		
Rank	**State**	**Percentage of Adult Obesity** (Based on 2005-2007 Combined Data, Including Confidence Intervals)
1	Mississippi	31.7% (+/- 1.0)
2	West Virginia	30.6% (+/- 1.1)
3	Alabama	30.1% (+/- 1.2)
4	Louisiana	29.5% (+/- 1.0)
5	South Carolina	29.2% (+/-0.8)
6	Tennessee	29.0% (+/-1.2)
7	Kentucky	28.4% (+/- 1.0)
8 (tie)	Oklahoma	28.1% (+/- 0.8)
8 (tie)	Arkansas	28.1% (+/- 0.9)
10	Michigan	27.7% (+/- 0.8)

Northeastern and Western states continue to dominate the states with the lowest rates of obesity, this year D.C. and New Jersey replaced Arizona and New Mexico.

States With the Lowest Obesity Rates		
Rank	**State**	**Percentage of Adult Obesity** (Based on 2005-2007 Combined Data, Including Confidence Intervals)
51	Colorado	18.4% (+/- 0.7)
50	Hawaii	20.7% (+/- 0.8)
49	Connecticut	20.8% (+/- 0.8)
48	Massachusetts	20.9% (+/- 0.6)
47	Vermont	21.1% (+/-0.7)
46	Rhode Island	21.4% (+/-1.0)
45	Montana	21.7% (+/- 0.8)
44	Utah	21.8% (+/- 0.9)
43	District of Columbia	22.1% (+/- 1.0)
42	New Jersey	22.9% (+/- 0.7)

Rates and Rankings Methodology

The rates and rankings in the tables are based on comparisons of 2004-2006 to 2005-2007 Behavioral Risk Factor Surveillance System (BRFSS) data. TFAH uses 3 years of BRFSS data in order to stabilize the data by using large enough sample sizes for comparisons among states and over time based on advice of officials from the U.S. Centers for Disease Control and Prevention (CDC). In order for a state rate to be considered to have an increase, the change must reach a level of what experts consider to be statistically significant ($p<0.05$) for the particular sample size of that state.

The District of Columbia is included in the state rankings, since CDC funds D.C. to conduct a survey in an equivalent way to the states.

The data are based on telephone surveys conducted by state health departments with assistance from CDC where individuals self-report their weight and height. Researchers then use these statistics to calculate body mass index (BMI) to determine obesity or overweight. Since the survey is based on self-reporting, experts feel the rates are likely to be slightly underreported, since individuals tend to underreport their weight and over report their height.

More information about the methodology of the rankings is available in Appendix A.

DEFINITIONS OF OBESITY AND OVERWEIGHT

Obesity is defined as an excessively high amount of body fat or adipose tissue in relation to lean body mass.[23,24] Overweight refers to increased body weight in relation to height, which is then compared to a standard of acceptable weight.[25] Body mass index, or BMI, is a common measure expressing the relationship (or ratio) of weight-to-height. The equation is:

$$\text{BMI} = \frac{\text{(Weight in pounds)}}{\text{(Height in inches) x (Height in inches)}} \times 703$$

Adults with a BMI of 25 to 29.9 are considered overweight, while individuals with a BMI of 30 or more are considered obese. The National Institutes of Health (NIH) adopted a lower optimal weight threshold in June 1998. Previously, the federal government defined overweight as a BMI of 28 for men and 27 for women.

Until recently children and youth at or above the 95th percentile were defined as "overweight", while children at or above the 85th percentile but below the 95th percentile were defined as "at risk of overweight". However, in 2007, an expert committee recommended using the same cut points but changing the terminology by replacing "overweight" with "obese" and "at risk of overweight" with "overweight". The committee also added an additional cut point -- BMI at or above the 99th percentile -- to define "severe obesity."[26]

There are some issues and disputes surrounding the use of BMI as the primary measure for obesity, including:

- BMI does not distinguish between fat and muscle, and individuals with a significant amount of lean muscle will have higher BMIs which do not indicate an unhealthy level of fat.
- Research has shown that those of African and/or Polynesian ancestry may have less body fat and leaner muscle mass, suggesting higher baseline BMIs for overweight and obesity.[27]
- Research has also found that there may be other race or ethnicity issues in BMI measurements. A June 2005 study found that current BMI thresholds "significantly underestimate health risks in many non-Europeans."[28] Asian and Aboriginal groups, despite "healthy" BMIs, had high risk of "weight related health problems."[29] Several years ago, it was suggested to the World Health Organization (WHO) that BMI levels be dropped to 23 and 25 for overweight and obesity, respectively, among Asian populations, but no such changes have occurred.
- Recent studies have shown that for adults, waist circumference is another, and perhaps better, way to determine more about the health of an individual.[30] A study conducted in 1998 and recently reported on by the Harvard Medical School showed that women with a healthy-weight BMI are more likely to suffer from coronary disease if their waist circumference is too high.[31] The problem that doctors have encountered is finding a formula for waist circumference, because the numbers based on averages do not take height into account. The International Journal of Obesity recently reported that the waist-to-height ratio might be a better indicator of health. Using this measure, an adult's waist circumference should be less than half of his or her height.[32]

Examining BMI levels, however, is still considered useful by a number of researchers for examining trends and patterns of overweight and obesity.

The strengths of the BMI measure include:

- Correlates with body fat;
- Easy to measure;
- Noninvasive;
- Less expensive than other more invasive techniques;
- Good sensitivity and specificity;
- Most recommended measure;
- There is U.S. reference data so it can be used to track trends;
- Child BMI correlates with adult adiposity[33]; and
- Correlates with cardiovascular risk factors and long-term mortality.[34,35]

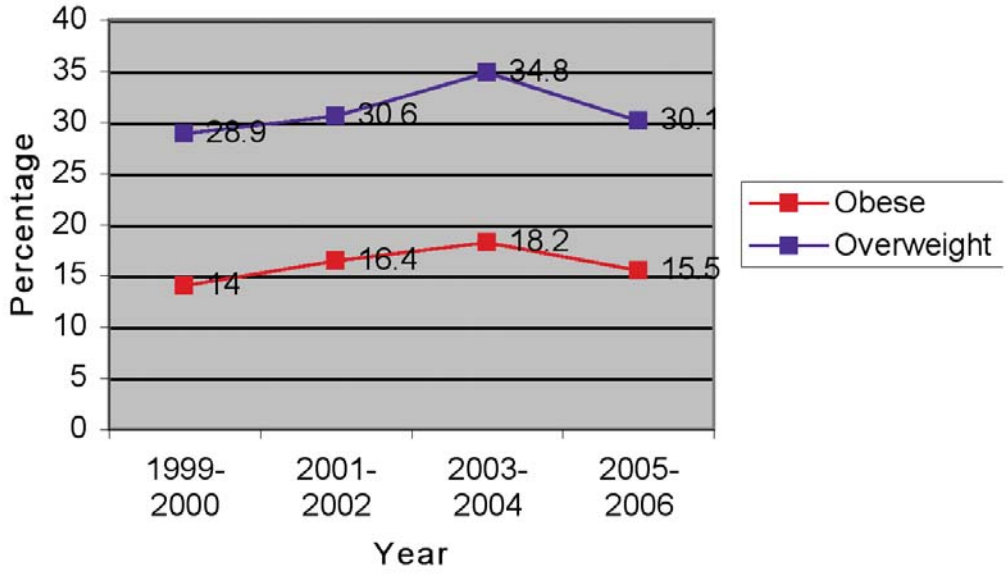
Many experts, however, recommend assessing an individual's health using factors in addition to BMI, such as waist size, waist-to-hip ratio, blood pressure, cholesterol level, and blood sugar.[36] Recently, an expert panel consisting of 15 health organizations recommended that physicians and allied healthcare providers perform, at a minimum, a yearly assessment of weight status in all children, and that this assessment should include calculation of height, weight, and BMI for age and plotting those measures on a standard growth chart.[37]

B. CHILDHOOD AND YOUTH OBESITY AND OVERWEIGHT RATES

1. Study of Children and Adolescents Age 2 to 19 Years Old

According to a recent analysis of data from the National Health and Nutrition Examination Survey (NHANES), the number of U.S. children who are overweight or obese may have peaked, after years of steady increases. Researchers at CDC report that there was no statistically significant change in the number of children and adolescents (aged 2 to 19) with high BMI for age between 2003-2004 and 2005-2006.[38]

Percentage of Children Age 2-19 Classified as Overweight or Obese, and Obese



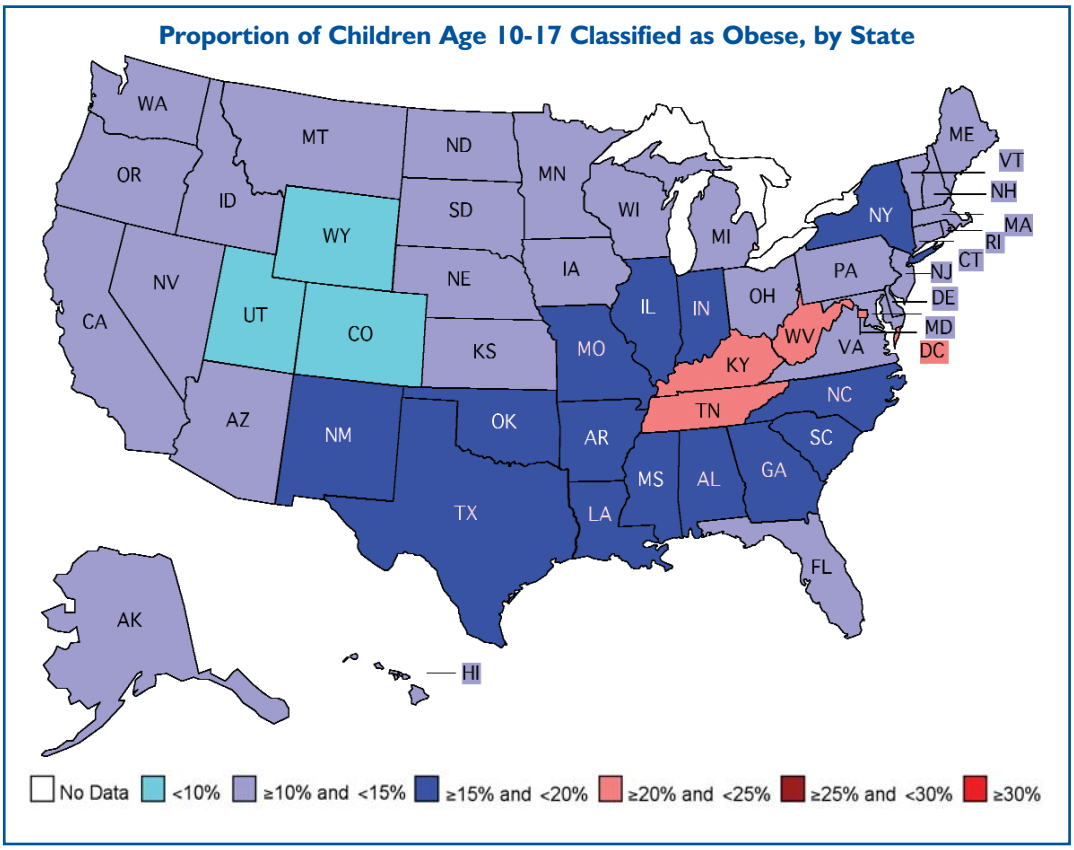
Source: National Health and Nutrition Examination Survey data

This is the first time the rates have not increased in over 25 years. Scientists and public health officials, however, are unsure if the data reflect the effectiveness of recent public health campaigns to raise awareness about obesity and increased physical activity and healthy eating among children and adolescents, or if this a statistical abnormality.[39]

Even if childhood obesity rates have peaked, the number of children with unhealthy BMIs remains far too high and the public health toll of childhood obesity will continue to grow as the problems related to overweight and obesity in children show up later in life.

Scientists expect to know more when the 2007-2008 NHANES data are analyzed. The 2005-2006 National Survey on Children's Health, a large national survey with state-specific data, is also due out in late 2008 and may offer another perspective on childhood obesity rates.

2. Study of 10- to 17-Year Olds



Source: National Survey on Children's Health, 2003.

According to a 2003-2004 National Survey of Children's Health (NSCH), childhood obesity rates for children age 10-17, defined as BMI greater than 95th percentile BMI for age group, ranged from a low of 8.5 percent in Utah to 22.8 percent in D.C. Eight of the 10 states with the highest rates of obese children are in the South. The NSCH study is based on a survey of parents in each state.

States with Highest Rates of Obese 10- to 17-Year Olds

Ranking	States	Percentage of Obese 10- to 17-Year Olds
1	D.C.	22.8%
2	West Virginia	20.9%
3	Kentucky	20.6%
4	Tennessee	20.0%
5	North Carolina	19.3%
6	Texas	19.1%
7	South Carolina	18.9%
8	Mississippi	17.8%
9	Louisiana	17.2%
10	New Mexico	16.8%

Six of the states with the lowest rates of obese 10- to 17-year olds are in the West.

States With Lowest Rates of Obese 10- to 17-Year Olds		
Ranking	**States**	**Percentage of Obese 10- to 17-Year Olds**
51	Utah	8.5%
50	Wyoming	8.7%
49	Colorado	9.9%
47 (tie)	Idaho	10.1%
47 (tie)	Minnesota	10.1%
46	Washington	10.8%
44 (tie)	Alaska	11.1%
44 (tie)	Montana	11.1%
43	Vermont	11.3%
41 (tie)	Nebraska	11.9%
41 (tie)	Rhode Island	11.9%

Methodology of the National Survey of Children's Health

NSCH was fielded using the State and Local Area Integrated Telephone Survey (SLAITS) method, and conducted by the National Center for Health Statistics using the same random digit dialing sampling frame as the National Immunization Survey.[40] Data were collected from the parent or guardian "who was most knowledgeable about the health and health care of children under 18 years of age" in the household from January 2003 to July 2004.

Overall, 102,353 interviews were completed with a response rate ranging from nearly 50 percent to nearly 65 percent, depending on the state. Data were weighted according to a variety of socio-economic measures to ensure an accurate picture of the population. State-level estimates have a margin of error of up to 3 percent, and "small differences between survey estimates may be due to random survey error," rather than actual differences in measurement.

3. Survey of High School Students

According to the 2007 national Youth Risk Behavior Survey (YRBS), a survey of U.S. high school students, 13 percent of students are obese and 15.8 percent of students are overweight.[41] Although these numbers were virtually unchanged since the 2005 national YRBS, the latest biennial survey did reveal an upward trend from 1999 to 2007 in the prevalence of students nationwide who were obese (10.7 percent to 13.0 percent) and who were overweight (14.4 percent to 15.8 percent).

In 2007, YRBS data from 39 states indicated that obesity rates among high school students ranged from a low of 8.7 percent in Utah to a high of 17.9 percent in Mississippi, with a median obesity rate of 12 percent. Overweight rates among high school students ranged from a low of 11.4 percent in Wyoming to a high of 18.2 percent in Georgia, with a median overweight rate of 15.0 percent. Thirty-nine states and D.C. participated in the survey

Percentage of Obese and Overweight U.S. High School Students by Sex		
	Obese	**Overweight**
Female	9.6%	15.1%
Male	16.3%	16.4%
Total	13.0%	15.8%

Percentage of Obese and Overweight U.S. High School Students by Race/Ethnicity		
	Obese	Overweight
White*	10.8%	14.3%
Black*	18.3%	19.0%
Hispanic	16.6%	18.1%
Total	13.0%	15.8%

**Note: Non-Hispanic*

Percentage of Obese and Overweight U.S. High School Students by Sex and Race/Ethnicity				
	Obese		Overweight	
	Female	Male	Female	Male
White*	6.8%	14.6%	12.8%	15.7%
Black*	17.8%	18.9%	21.4%	16.6%
Hispanic	12.7%	20.3%	17.9%	18.3%
Total	9.6%	16.3%	15.1%	16.4%

**Note: Non-Hispanic*

Methodology for the Youth Risk Behavior Surveillance System

The Youth Risk Behavior Surveillance System (YRBSS) monitors 6 categories of priority health-risk behaviors among youth and young adults. The YRBSS includes national, state, and local Youth Risk Behavior Surveys (YRBS) conducted biennially among representative samples of high school students. The 2007 data in this report are from the national YRBS and separate YRBSs conducted in 39 states. Data are not available from every state because some do not conduct a YRBS (in 2007, these states were: California, Louisiana, Minnesota, Pennsylvania, Virginia, and Washington) and some states that do conduct a YRBS did not have weighted data (in 2007, these states were: Alabama, Colorado, Nebraska, New Jersey, and Oregon). TFAH reported the percentage of obese and overweight high school students based on information from CDC. All data reported in this section can be found in the article "Youth Risk Behavior Surveillance -- United States, 2007" published in *Morbidity and Mortality Weekly Report* 57, no. SS-4 (2008): 1-136.

4. Study of Low-Income Children Aged 2-5

A survey of low-income children aged 2-5 called the Pediatric Nutrition Surveillance Survey (PedNSS) found that 14.8 percent of these children are obese and 16.4 percent are overweight.[42] Forty states and D.C. participated in the survey.

Methodology for the Pediatric Nutrition Surveillance Survey

TFAH used PedNSS data as a snapshot of overweight and obesity among low-income pre-school aged children. These data are collected at public health clinics across the country, are aggregated by the state, territorial, and tribal governments, and then reported to and published by CDC. Data are collected yearly and are available at http://www.cdc.gov/pednss.

CHILD AND ADOLESCENT HEALTH SURVEYS

In the 2008 report, TFAH highlights data from 4 separate child and adolescent health surveys.

The National Health and Nutrition Examination Survey (NHANES) is designed to study national trends and data and is considered the gold standard.

The National Survey of Children's Health (NSCH) uses data collected from the parent or guardian and provides state-level estimates of children's health statistics, including obesity.

The Youth Risk Behavior Surveillance System (YRBSS) collects data on health-risk behaviors among youth and young adults. The YRBSS is unique because of its state-level, grade-level, and racial and ethnic specific data.

The Pediatric Nutrition Surveillance Survey is designed to collect data on overweight and obesity among low-income pre-school aged children.

The 4 studies collect information in different ways and, therefore, have different results that are difficult to compare. For example, the NSCH numbers are usually lower, because the survey design is based on data collected from parents about their children. Parents, especially those of young children, tend to underreport weight. NHANES data, meanwhile, are collected through in-person interviews and physician examinations. Obesity is calculated using actual height and weight measurements, rather than self-reported data; because of this, the NHANES is often referred to as the "gold standard."

C. PHYSICAL INACTIVITY IN ADULTS

Six states reported an increase is physical inactivity in the past year, up from only 3 reporting an increase in last year's report. Physical inactivity rates for adults reflect the number of survey respondents who reported not engaging in physical activity or exercise during the previous 30 days other than their regular jobs.

While the 2004-2006 data showed that 5 states had decreased rates of physical inactivity -- i.e. more people reported being engaged in physical activity -- the 2005-2007 data show only one state, New York, with a lower rate of physical inactivity than last year. Overall, rates of physical inactivity appear to be stagnant, with the majority of states not demonstrating any statistically significant change in their rates of physical inactivity.

Mississippi, the state with the highest rate of obesity, also had the highest reported percentage of physical inactivity at 31.8 percent. Southern states dominate the highest rates of physical inactivity, with the exception of New Jersey.

States with the Highest Rates of Physical Inactivity

Rank	State	**Percentage of Adult Physical Inactivity** (Based on 2005-2007 Combined Data, Including Confidence Intervals)	Obesity Ranking
1	Mississippi	31.8% (+/- 0.9)	1
2	Louisiana	31.4% (+/- 1.0)	4
3	Tennessee	31.1% (+/-1.1)	6
4	Kentucky	30.7% (+/-1.0)	7
5	Oklahoma	30.0% (+/-0.8)	8
6	Alabama	29.6% (+/-1.1)	3
7	Arkansas	29.1% (+/-0.9)	8
8	Texas	28.1% (+/-0.9)	15
9	West Virginia	27.5% (+/-1.0)	2
10	New Jersey	27.4% (+/-0.7)	42

Minnesota stays at the bottom of the rankings with 15.7 percent of adults reporting physical inactivity -- statistically the same as the previous year's rate. All 10 states with the lowest rates of physical inactivity remain the same as last year's report.

States with the Lowest Rates of Physical Inactivity			
Rank	**State**	**Percentage of Adult Physical Inactivity** (Based on 2005-2007 Combined Data, Including Confidence Intervals)	**Obesity Ranking**
51	Minnesota	15.7% (+/- 0.9)	30
50	Colorado	17.3% (+/-0.6)	51
48	Washington	17.4% (+/-0.4)	32
48	Oregon	17.4% (+/-0.7)	29
47	Vermont	18.5% (+/-0.7)	47
46	Hawaii	18.9% (+/-0.8)	50
44	Wisconsin	19.1% (+/-0.8)	25
44	Utah	19.1% (+/-0.8)	44
43	New Hampshire	20.1% (+/-0.7)	35
42	Connecticut	20.2% (+/-0.8)	49

D. DIABETES AND HYPERTENSION

Obesity and physical inactivity have been shown to be related to a range of chronic diseases, including diabetes and hypertension. Eight of the 10 states with the highest rates of adult diabetes are also in the top 10 states with the highest obesity rates, and 9 of the 10 states with the highest rates of hypertension are also in the top 10 states with the highest rates of obesity. Diabetes rates rose in 26 states and 7 states experienced an increase in diabetes rates for the second straight year. Hypertension rates rose in 38 states and 15 states had an increase in hypertension rates 2 years in a row.

1. Diabetes

West Virginia, for the second year in a row, had the highest rate of adult diabetes at 11.1 percent, while Colorado had the lowest rate at 5.1 percent. All 10 states with the highest rates of adult diabetes are in the South.

States with the Highest Rates of Adult Diabetes			
Rank	**State**	**Percentage of Adult Diabetes** (Based on 2005-2007 Combined Data, Including Confidence Intervals)	**Obesity Ranking**
1	West Virginia	11.1% (+/-0.6)	2
2 (tie)	Tennessee	10.6% (+/-0.7)	6
2 (tie)	Mississippi	10.6% (+/-0.5)	1
4	Alabama	10.0% (+/-0.6)	3
5	South Carolina	9.8% (+/-0.5)	5
6	Oklahoma	9.7% (+/-0.5)	8
7	Kentucky	9.6% (+/-0.6)	7
8	Louisiana	9.5% (+/-0.5)	4
9	Georgia	9.2% (+/-0.5)	11
10	North Carolina	8.9% (+/-0.3)	16

2. Hypertension

For the third year in a row, Mississippi led the nation with the highest rate of hypertension, at 34.5 percent, while Utah, at 20.3 percent, had the lowest rate for the third year in a row. All 10 states with the highest rates of adult hypertension are in the South.

States with the Highest Rates of Adult Hypertension

Rank	State	Percentage of Adult Hypertension (Based on 2003-2007 Combined Data, Including Confidence Intervals) Based on a Survey Conducted Every Other Year	Obesity Ranking
1	Mississippi	34.5% (+/- 0.9)	1
2	Alabama	33.5% (+/- 1.0)	3
3	West Virginia	33.2% (+/-1.0)	2
4	Tennessee	32.1% (+/-1.1)	6
5	Arkansas	31.5% (+/-0.9)	8 (tie)
6	South Carolina	31.3% (+/-0.7)	5
7	Louisiana	30.9% (+/-1.0)	4
8	Oklahoma	30.7% (+/-0.7)	8 (tie)
9	Kentucky	30.1% (+/-0.9)	7
10	North Carolina	29.8% (+/-0.7)	16

E. OBESITY AND POVERTY

Obesity rates also appear to have some relationship with poverty rates in many states, although there are notable exceptions. Seven of the states with the highest poverty rates are also in the top 10 states with the highest obesity rates. Eight out of the 10 states with the highest rates of poverty are in the South, where obesity rates are also higher, while many of the states with the lowest poverty rates are among the states with the lowest rates of obesity.

States with the Highest Poverty Rates and Their Obesity Rankings

Poverty Rank	State	Percentage of Poverty (Based on 2004-2006 Combined Data, Including Confidence Intervals)	Obesity Ranking
1	Mississippi	19.8% (+/- 1.7)	1
2	D.C.	18.8% (+/- 2.0)	43
3	Louisiana	17.4% (+/- 1.7)	4
4	New Mexico	17.1% (+/- 1.8)	38
5	Kentucky	16.5% (+/- 1.6)	7
6	Texas	16.4% (+/- 0.8)	15
7	Alabama	16.0% (+/- 1.5)	3
8	Arkansas	15.6% (+/- 1.6)	8
9	Tennessee	15.2% (+/- 1.3)	6
10	West Virginia	15.0% (+/- 1.5)	2

States with the Lowest Poverty Rates and Their Obesity Rankings			
Poverty Rank	**State**	**Percentage of Poverty** (Based on 2004-2006 Combined, Including Confidence Intervals)	**Obesity Ranking**
51	New Hampshire	5.5% (+/- 1.0)	35
49 (tie)	Minnesota	7.7% (+/- 1.1)	30
49 (tie)	Vermont	7.7% (+/- 1.3)	47
48	New Jersey	7.9% (+/- 0.8)	42
47	Hawaii	8.8% (+/- 1.2)	50
45 (tie)	Connecticut	9.1% (+/- 1.3)	49
45 (tie)	Virginia	9.1% (+/- 1.0)	27
44	Delaware	9.2% (+/- 1.3)	21
42 (tie)	Alaska	9.3% (+/- 1.3)	14
42 (tie)	Maryland	9.3% (+/- 1.1)	27

WHY NATIONAL AND STATE DATA ARE DIFFERENT: 2 DIFFERENT SURVEYS

The CDC conducts 2 separate information surveys about health statistics.

The **National Health and Nutrition Examination Survey (NHANES)** is designed to study national trends and data. The **Behavioral Risk Factor Surveillance Survey (BRFSS)** studies trends and data in each state.

The 2 studies collect information in different ways and, therefore, have different results. The BRFSS numbers are usually lower, because the survey design is based on self-reported information, whereas NHANES data are collected through in-person interviews and physician examinations. The number typically cited for the national adult obesity rate is 32 percent using the NHANES data. This number is higher than the estimated percentage for many states, which use BRFSS.

NHANES is a nationally representative survey. Obesity is calculated using actual height and weight measurements, rather than self-reported data; because of this, the NHANES is often referred to as the "gold standard."

BRFSS is based on state rather than national representation and is a telephone survey where respondents self-report their height, weight, and other health information. It is the only source for state-level health information. According to CDC, BRFSS is the largest phone survey in the world. Because data show that women are more likely to report that they weigh less than they do while men are more likely to say that they are taller than they are, it is commonly believed that BRFSS underreports obesity.[43] Although the BMI data gathered in the BRFSS may not be completely accurate, the main purpose of this surveillance is to monitor trends and there are no methodological issues with this, that is, the tendency to report a lower weight or higher height likely remains constant every year.

Despite these limitations, BRFSS is the best available source of data on health trends in states and local areas. This taxpayer supported CDC program is the only source that collects state-by-state health information on a regular basis.

CDC provides BRFSS information to policymakers, including Congress and state officials, and to the public. CDC presents this information routinely through charts, its Web site, and trend maps. These data provide the opportunity to review trends and patterns. As happens in this report, sometimes CDC presents this data without confidence intervals for the sake of clarity; however, additional information with more detail, including sample sizes, confidence intervals, limitations, and data quality, is available to the public on CDC's Web site at ftp://ftp.cdc.gov/pub/Data/Brfss/2007SummaryDataQualityReport.pdf.

WHY RANK STATES?

TFAH provides state rankings to better inform policymakers and the public about obesity trends in the United States. The information allows people to gain a better understanding of patterns in rising obesity rates. State rankings also help demonstrate the varying levels of concern and action on obesity in different areas of the country. Due to annual variations in the data, and based on advice from CDC officials, TFAH stabilizes the data by combining 3 years. This is similar to how NHANES combines 3 years of data to stabilize any anomalies.

Fast Facts About Obesity

SECTION 2

A. WHAT'S BEHIND THE OBESITY EPIDEMIC?

MANY ISSUES INFLUENCE NUTRITION AND PHYSICAL ACTIVITY BEHAVIORS

Food Choices and Changes

- Higher caloric intake -- Adults consumed approximately 300 more calories daily in 2002 than they did in 1985.[44]
- Higher caloric density of foods.
- Limited access to supermarkets and nutritious, fresh foods in many urban and rural neighborhoods.
- "Portion distortion," or the rise of bigger portions.
- "Value sizing" or placing a higher value on the amount of food versus the quality of food.
- Less in-home cooking and more frequent reliance on take-out food and eating in restaurants.
- The proliferation of microwaves and faster, easier to prepare foods.

Schools

- A variety of food and beverage options are available throughout the school day including soda, fruit drinks that are not 100 percent juice, high energy dense foods, and fast food. These foods and beverages are available at venues such as a la carte lines, school stores, snack machines, fundraisers, and classroom parties.
- Reduction in the amount of physical education, recess, and recreation time.
- Few safe routes to school.
- Limited health education classes.
- Lack of opportunities to participate in physical activity that are lifelong in nature.

Communities Not Designed for Physical Activity

- Communities designed to foster driving rather than walking or biking.
- Lack of public transportation options.
- Poor upkeep of sidewalk infrastructure.
- Walking areas often unsafe or inconvenient.
- Limited parks and recreation space, including indoor facilities.
- Poor upkeep and security in local parks.
- Weather conditions limit outdoor physical activity options.
- Lack of affordable indoor physical activity options.

Marketing and Advertising

- Greater advertising and marketing of less nutritious foods.
- Marketing of "fad" diets.

Workplaces Not Conducive to Health

- Many desk jobs limit or discourage activity, part of the sedentary lifestyle.
- Worksites typically not designed to foster movement.
- Limited opportunities for physical activity or recreation during the work day.
- Unhealthy options in cafeterias or work lunch sites.
- Lack of bike racks and/or shower facilities discourage active transportation.

Economic Constraints

- Health insurance coverage for obesity-prevention services is often limited or not available.
- People without health insurance often do not receive either appropriate preventive services or follow-up care.
- "Value sizing" of less nutritious foods and the higher costs of many nutritious foods.
- Expense of and taxes on gym memberships, exercise classes, equipment, facility use, and sports league fees.
- Lower-income neighborhoods have fewer and smaller grocery stores and less access to affordable fruits and vegetables.

Family and Home Influences

- Influence of other family members' habits on eating and exercise patterns.
- "Electronic culture" options for entertainment and free time, including TV, video games, and the Internet.
- More people working outside the home or far from home.

Limited Time

- Long work hours mean more meals -- many of them high in calories - are eaten outside of the home.
- Car time and commuting cut into free time that could be used for physical activity.

Genetics, Physiology, and Life Stages

- Metabolism.
- Childbearing.
- Increased risk factors for obesity and related diseases in children with obese parents, particularly mothers.
- Aging factors, including menstruation, pre-menopause, and menopause for women.
- Weight-gain as a side effect from some commonly used medications such as insulin, antiretrovirals, antidepressants, oral contraceptives, and injectable contraceptives.

Psychology

- Body image concerns.
- Consumers' frustration with conflicting nutrition information and advice.
- Eating to combat stress.
- Turning to eating as a replacement for smoking or other unhealthy behaviors.

B. OBESITY'S IMPACT ON HEALTH

HEALTH IMPACT OF OBESITY AND PHYSICAL INACTIVITY

Below are some key findings based on a range of research into the health impact of obesity on adult and child health. Physical activity has been shown to have a role in reversing or preventing many of these health problems.

Type 2 Diabetes

- More than 80 percent of people with type 2 diabetes are overweight.[45]
- More than 20 million adult Americans have diabetes.[46]
- Another 54 million Americans are pre-diabetic, which means they have prolonged or uncontrolled elevated blood sugar levels that can contribute to the development of diabetes.[47]
- Diabetes is the seventh leading cause of death in the United States and accounts for 11 percent of all U.S. health care costs.[48, 49]
- Diabetes is the leading cause of renal failure, limb amputations and blindness.[50]
- CDC projects that 48.3 million Americans will have diabetes by 2050.[51]
- Approximately 176,500 individuals under the age of 20 have diabetes.[52]
- Two million adolescents aged 12-19 are pre-diabetic.[53]
- The National Institute of Diabetes and Digestive and Kidney Diseases found that a 7-percent weight loss together with moderate levels of physical activity (walking 30 minutes a day 5 days a week) decreased the number of new diabetes type 2 cases by 58 percent.[54]

THE EMERGING TREND OF TYPE 2 DIABETES IN CHILDREN

Type 2 diabetes is a chronic disease that accounts "for about 90 to 95 percent of all diagnosed cases of diabetes. It usually begins as insulin resistance, a disorder in which the cells do not use insulin properly. As the need for insulin rises, the pancreas gradually loses its ability to produce it."[55]

The American Diabetes Association describes type 2 diabetes as a "new epidemic" among American children.[56] Traditionally a disease of mature adults, type 2 diabetes now accounts for 8 percent to 45 percent of new pediatric diabetes cases, depending on geographical location.[57] Although there are a number of genetic risk factors, obesity is largely driving the increase in childhood type 2 diabetes. The problem is especially severe among children and youth of African, Hispanic, Asian, or American Indian ancestry.[58]

In 2000, SEARCH for Diabetes in Youth, a 5-year, $22 million research project funded by CDC and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), was launched to identify the number of children under age 20 with diabetes by type, age, sex, and race or ethnicity. SEARCH's other primary research goals included: assessing how type 1 and type 2 diabetes differ in children; learning about the possible long-term health complications of diabetes in children and adolescents; investigating how children are being treated for diabetes; and determining the quality of life of diabetic children and adolescents.[59]

Initial results from the study show that while type 1 diabetes remains the most common form of diabetes among children and adolescents, type 2 diabetes becomes more common after the age of 10, with minority children more affected than non-Hispanic white children.[60] A phase II study is underway and will wrap up in 2009.

According to Francine Ratner Kaufman, president of the American Diabetes Association, "there is no doubt that the emergence of this epidemic in children and young adults is a major public health problem."[61] The association calls on schools and communities to take an active role in the prevention of type 2 diabetes in children by encouraging physical activity and improved eating habits.

Heart Disease and Stroke

- People who are overweight are more likely to suffer from high blood pressure, high levels of blood fats, and high LDL ("bad") cholesterol -- all risk factors for heart disease and stroke.[62]
- Physically inactive people are twice as likely to develop coronary heart disease as regularly active people.[63]
- Heart disease is the leading cause of death in the United States, and stroke is the third leading cause.[64]
- One in 4 Americans has some form of cardiovascular disease.[65]
- Heart disease can lead to a heart attack, congestive heart failure, sudden cardiac death, angina (chest pain), or abnormal heart rhythm.[66]
- A stroke limits blood and oxygen to the brain and can cause paralysis or death.[67]
- Roughly 30 percent of cases of hypertension may be attributable to obesity, and in men under the age of 45, the figure may be as high as 60 percent.[68]

Cancer

- People who are overweight "may increase the risk of developing several types of cancer, including cancers of the colon, esophagus, and kidney. Overweight is also linked with uterine and post-menopausal breast cancer in women."[69]
- Approximately 20 percent of cancer in women and 15 percent of cancer in men are attributable to obesity.[70]
- Cancer is the second leading cause of death in the United States.[71]
- It is unknown why being overweight can increase cancer risk. One theory is that fat cells may affect overall cell growth in a person's body.[72]

Neurological and Psychiatric Diseases

- Obesity may increase adults' risk for dementia. A review of 10 published studies found that people who were obese at the beginning of the studies were 80 percent more likely to later develop Alzheimer's disease than those adults who had a normal weight at enrollment.[73]
- An analysis of data from a health survey of more than 40,000 Americans found that obese adults were more likely to suffer from depression, anxiety and other mental health conditions than normal weight adults.[74] The odds of suffering from any mood disorder rose by 56 percent among obese individuals ($30 \leq BMI \leq 39.9$) and doubled among the extremely obese ($BMI \geq 40$).[75]

Kidney Disease

- Obese individuals ($BMI \geq 30$) are 83 percent more likely to develop kidney disease than normal weight individuals ($18.5 < BMI < 25$), while overweight individuals ($25 < BMI \leq 30$) are 40 percent more likely to develop kidney disease.[76]
- An estimated 24.2 percent of kidney disease cases among U.S. men and 33.9 percent of cases among women are related to overweight and obesity.[77]

Arthritis

- Obesity is a known risk factor for the development and progression of knee osteoarthritis and possibly osteoarthritis of other joints. For example, obese adults are up to 4 times more likely to develop knee osteoarthritis than normal weight adults.[78]
- Among individuals who have received a doctor's diagnosis of arthritis, 68.8 percent are overweight or obese.[79]
- For every pound of body weight lost, there is a 4-pound reduction in knee joint stress among overweight and obese people with osteoarthritis of the knee.[80]

Obesity and Children's Health

- Nearly 32 percent of U.S. children and adolescents are overweight or obese (at or above the 85th percentile of BMI for age).[81]
- Approximately 60 percent of obese children aged 5-10 years had at least one cardiovascular disease (CVD) risk factor -- such as elevated total cholesterol, triglycerides, insulin, or blood pressure -- and 25 percent had 2 or more risk CVD risk factors.[82]
- The American Academy of Pediatrics issued new guidelines in July 2008 recommending cholesterol screening of children as young as age 2 and adolescents with a family history of high cholesterol or heart disease. The new guidelines also recommend screening children whose family history is unknown or those who have other factors for heart disease including obesity, high blood pressure, or diabetes.[83]

- Childhood weight problems can lead to complications such as elevated blood pressure and cholesterol, joint problems, type 2 diabetes, gallbladder disease, asthma, depression and anxiety.[84]
- Severely overweight and obese children often suffer from depression, anxiety disorders, isolation from their peers, low self-esteem, and eating disorders.[85]
- The number of fat cells a person has is determined by late adolescence; overweight and obese children can lose weight, but they do not lose the extra fat cells.[86]
- Young girls who are overweight or obese suffer a variety of significant health sequelae, including menstrual disturbances such as early onset menstruation, and are more likely to suffer from polycystic ovary syndrome (PCOS).[87]

OBESITY AND PREGNANCY

There is a growing body of evidence documenting the links between maternal health conditions, such as obesity and chronic diseases, and increased risks before, during, and after birth.[88]

Many pregnant women are overweight, obese, or have diabetes, all of which can have negative effects on the fetus, as well as the mother. According to CDC, in 2002 approximately 50 percent of women of child-bearing age (between 18 and 44) were either overweight or obese; 3 percent experienced high blood pressure and 9 percent had diabetes.[89]

Not only are obesity and chronic diseases unsafe for the mother and the fetus, but treatment and hospital stays are more expensive and complicated for pregnant women who are obese. CDC and Kaiser Permanente Northwest Center for Health Research found in a recent study that obesity during pregnancy is associated with an increased use of health care services and longer hospital stays.[90] The study, which consisted of over 13,000 pregnancies, found that obese women required more outpatient medications, were given more obstetrical ultrasounds, were less likely to see nurse midwives or nurse practitioners in favor of physicians, and Cesarean delivery rates were 45.2 percent for extremely obese women, compared with 21.3 percent for women of normal weight.[91]

C. OBESITY AND PHYSICAL INACTIVITY

U.S. GUIDELINES FOR PHYSICAL ACTIVITY

Recommendations from the U.S. Dietary Guidelines for Americans[92]

Adults

- To reduce the risk of chronic disease, engage in at least 30 minutes of moderate-intensity physical activity on most days of the week.
- To help manage body weight and prevent unhealthy weight gain, engage in about 60 minutes of moderate-to vigorous-intensity activity on most days of the week.
- To sustain weight loss, engage in at least 60 to 90 minutes of daily moderate intensity physical activity.
- Include cardiovascular conditioning, stretching, and resistance or calisthenics.

Children

- Engage in at least 60 minutes of physical activity daily.

Recommendations from CDC[93]

Adults

- Engage in a minimum of 30 minutes of moderate-intensity physical activity per day (such as brisk walking) most days of the week; or
- Engage in a minimum of 20 minutes of vigorous-intensity physical activity (such as jogging or running) 3 days a week
- Two days a week incorporate strength training into routine such as weight lifting to maintain and increase muscle strength and endurance.

Children[94]

- Children should engage in at least 60 minutes of moderate intensity physical activity most days of the week, preferably daily.

TRENDS IN PHYSICAL ACTIVITY

Adults:

- Currently, more than 22 percent of adult Americans say they do not engage in any physical activity.[95]
- More than half of adults report they do not participate in CDC's recommended level of physical activity, which includes either 30 minutes or more of moderate physical activity a day for 5 or more days per week, or 20 minutes or more of vigorous physical activity a day for 3 or more days per week.[96] The minimum level of recommended activity is equivalent to walking 2 miles at a pace of 3 to 4 miles per hour.[97]
- Sixty percent of adults are not sufficiently active to achieve health benefits.[98]
- Participating in leisure time physical activity declines as age increases.[99]
- Women are less likely to engage in moderate or vigorous physical activity.[100]
- African American and Hispanic adults are less likely to be physically active than white adults.[101]

Youth:

- At age 9, children engaged in moderate-to-vigorous physical activity (MVPA) approximately 3 hours per day on both weekends and weekdays, according to a July 2008 study published in the Journal of the American Medical Association. However, by age 15 years, adolescents were only engaging in MVPA for 49 minutes per weekday and 35 minutes per weekend day.[102]
- Nationwide, 35 percent of high school students met the recommended levels of physical activity, which is doing any kind of physical activity that increased their heart rate and made them breathe hard some of the time for a total of at least 60 minutes per day on 5 or more days during the past 7 days before the survey.[103]
- Nearly 25 percent of high school students did not participate in 60 or more minutes of any kind of physical activity that increased their heart rate and made them breathe hard some of the time on any day during the 7 days before the survey.[104]
- Only 54 percent of high school students had physical education class at least once a week; only 30 percent had daily physical education.[105]
- Nearly 25 percent of high school students played video or computer games or used a computer for something other than school work for 3 or more hours per day on an average school day.[106]
- 35 percent of high school students watched television 3 or more hours on an average school day.[107]

"EXERCISE IS MEDICINE" INITIATIVE

". . . (M)ore and more Americans will hear from a voice they trust that exercise is important, exercise is medicine. Indeed, exercise is not an option, but a necessary, active, direct way that people can maintain good health, avoid illness, improve the quality of their lives, reduce their health care costs and extend their life expectancy."

— Ronald Davis, M.D., president of the American Medical Association[108]

In November 2007, the American College of Sports Medicine and the American Medical Association came together in an effort to increase physical activity among Americans. The initiative, known as "Exercise is Medicine," is centered on the theory of including exercise and physical activity as a prescription from physician to patient. Exercise and physical activity are considered integral parts of an overall health plan, and are key components of a health plan designed to prevent chronic diseases and improve quality of life.

A few goals of the initiative include:

- Increase research and studies dedicated to examining the effects of fitness and physical activity on health.
- Create a system whereby physicians are able to refer patients to a "fitness specialist" and get reimbursed for their services.
- Educate physicians of all specialties about screening patients for fitness and physical activity levels.

D. WEIGHT BIAS AND QUALITY OF LIFE

A number of studies have reported an association between overweight and obesity and poorer quality of life. According to a Yale University study, weight discrimination was reported by 7 percent of adults in 1995-1996, and that percentage rose to 12 percent in 2004-2006.[109] Research has shown discrimination against people with obesity in several areas, including the hiring process, in the workplace, among medical professionals, and in educational institutions.

Weight Bias In Employment

- A 2007 study of more than 2800 adults found that overweight adults were 12 times more likely to report weight-based employment discrimination, obese persons were 37 times more likely, and severely obese adults were 100 times more likely.[110]
- Compared with job applicants with the same qualifications, obese applicants are rated more negatively and are less likely to be hired.[111]
- Overweight people earn 1 percent to 6 percent less than non-overweight people in comparable positions.[112]

Weight Bias in Health Care

- Self-report studies show that doctors view obese patients as lazy, lacking in self-control, non-compliant, unintelligent, weak-willed, and dishonest.[113]
- Sixty-nine percent of overweight people report having been stigmatized by doctors.[114]

Weight Bias in Education

- Teachers view overweight students as untidy, more emotional, less likely to succeed on homework, and more likely to have family problems. They also have lower expectations for overweight students.[115,116]
- Obese students are significantly less likely to be accepted to college despite comparable academic records.[117]

Physical and Emotional Consequences of Weight Bias

- Research shows that obese youth who are victimized by peers because of their weight are more likely to have suicidal thoughts and engage in suicidal behaviors.[118]
- Overweight young people who are targets of weight teasing are more likely to engage in unhealthy weight control and binge eating, and they are less likely to participate in physical activity.[119]
- In a study of more than 2,400 overweight and obese adults, 79 percent reported that they coped with weight bias by eating more.[120]
- Overweight and obese adults are more likely to avoid, cancel, or put off important health appointments.[121,122,123]
- Obese people report significantly greater disability due to body pain than patients with other chronic medical conditions, with the exception of migraine sufferers.[124]
- One study found that obese children were 5-and-a-half times more likely to have a poor quality of life than their healthy counterparts. Severely obese children even had a slightly lower quality of life than children undergoing chemotherapy.[125]

E. NUTRITION: THE OTHER SIDE OF THE ENERGY BALANCE

DIETARY NUTRITION GUIDELINES FOR AMERICANS[126]

Key Recommendations

- Consume a variety of nutrient-dense foods and beverages within and among the basic food groups while picking foods that limit the intake of saturated and trans fats, cholesterol, added sugars, salt, and alcohol.
- Eat more dark green vegetables, orange vegetables, legumes, fruits, whole grains, and low-fat milk and milk products.
- Eat less refined grains, total fats, added sugars, and calories.

Specific Recommendations for Adults

- Consume 2 cups of fruit and 2 1/2 cups of vegetables per day for a 2,000-calorie intake.
- Consume 3 or more ounce-equivalents of whole-grain products per day. At least half of grain intake should come from whole grains.
- Consume 3 cups per day of fat-free or low-fat milk or milk products.
- Increase dietary intake of calcium, potassium, fiber, magnesium, and vitamins A, C, and E.

Specific Recommendations for Children and Adolescents

- At least half of grains consumed should be whole-grain. Children 2 to 8 years old should consume 2 cups per day of fat-free or low-fat milk or milk products and children 9 and up should drink 3 cups per day.
- Increase dietary intake of calcium, potassium, fiber, magnesium, and vitamin E.

AMERICANS' UNHEALTHY EATING HABITS

Obesity is the result of a chronic energy imbalance: people who suffer from overweight and obesity consume more calories than they burn off in physical activity. Efforts to encourage people to change eating habits, however, are as complex as trying to motivate people to be more physically active.

Healthy nutrition, as with physical activity, has a positive effect on people's health no matter how much they weigh. According to an article published by the National Institute for Health Care Management, "for most Americans, a healthy diet means: smaller portions (fewer calories, minimal saturated and 'trans' fats, few sweets and low fiber carbohydrates (think desserts and sodas), and more fruits and vegetables."[127]

Instead, the American diet has skewed towards large portion sizes that are high in fat and calories. Some changes in the eating habits of Americans over the past few decades include:

More calories

- Adults consumed approximately 300 more calories daily in 2002 than they did in 1985.[128]
- Women aged 20-74 consumed nearly 22 percent more calories in 1999-2000 than they did in 1971-1974; men consumed nearly 7 percent more calories.[129]
- Adolescent females aged 12-15 consumed approximately 4 percent more calories in 1999-2000 than they did in 1971-1974; 16- to 19-year old females consumed approximately 15 percent more.[130]

Bigger portion sizes

- A study in the Journal of the American Medical Association examined the rise in portion sizes and found that from 1977-1998, portion sizes for selected popular food items and overall energy intake increased for foods purchased in restaurants or fast food establishments and for foods prepared in the home.[131]

Fewer fruits, vegetables, and whole grains

- A 2003 USDA report examining American food consumption patterns called America's per capita fruit consumption "woefully low" and limited to a small range of fruit options, and that vegetable consumption "tells the same story."[132]
- Per capita grain consumption has risen nearly 50 percent since the early 1970s, but whole grain consumption has dropped.[133]

More sugar

- "Added sugar" consumption is nearly 3 times the USDA recommended intake.[134]
- Average consumption of added sugars increased 22 percent from the early 1980s to 2000.[135]

More dietary fat

- Americans consumed an average of 600 calories worth of added fats per person per day in 2000.[136]

A drop in milk consumption and a large increase in soda and fruit juice consumption

- Milk consumption dropped 39 percent from 1977 to 2001 for children aged 6-11 while consumption of soda rose 137 percent, fruit juice rose 54 percent, and fruit drink rose 69 percent.[137,138]

A major increase in eating out

- In 1975, approximately 25 percent of food spending was in restaurants; by 2004, this figure had risen to 42 percent.[139]
- Spending in fast food restaurants grew over 18 times (from $6 billion to $110 billion) in the past 3 decades.
- In 1970, there were approximately 30,000 fast-food restaurants in the United States.; in 2001, there were approximately 222,000.
- Children ate out at fast-food and other restaurants nearly 3 times more in 1996 than they did in 1977.
- In 2004, 63 percent of children aged 1-12 ate out at a restaurant 1-3 times per week.[140]

PORTION DISTORTION

20 YEARS AGO	TODAY
Coffee with whole milk and sugar 8-ounce serving size 45 calories	Mocha with steamed milk and syrup 16-ounce serving size 350 calories
Difference: 305 calories	
Muffin 1.5 ounce serving size 210 calories	Muffin 4 ounce serving size 500 calories
Difference: 290 calories	
Pepperoni Pizza 2 slices 500 calories	Pepperoni Pizza 2 slices 850 calories
Difference: 350 calories	
Chicken Caesar Salad 1 1/2-cup serving size 390 calories	Chicken Caesar Salad 3 1/2-cup serving size 790 calories
Difference: 400 Calories	
Popcorn 5-cup serving size 270 calorie	Popcorn 11-cup serving size 630 calories
Difference: 360 Calories	
Chicken Stir Fry 2-cup serving size 435 calories	Chicken Stir Fry 4 1/2 cup serving size 865 calories
Difference: 430 Calories	

Source: National Heart, Lung, and Blood Institute Obesity Initiative, Portion Distortion II Interactive Quiz. Accessed at: http://hp2010.nhlbihin.net/portion/index.htm

FOOD COST AND PORTION SIZES

A recent Washington Post article reported that many restaurants are trimming down portion sizes.[141] While the change is intended to boost restaurants' profits, there is potential that it also could have positive long-term health outcomes. With an increase in gasoline and food costs and current public concern over a potential recession, restaurants needed to come up with ideas to continue turning a profit. One of the main ways restaurants are adjusting is by reducing portion sizes, often times without decreasing the cost to the consumer. Restaurants are using various "tricks" such as using smaller plates and lighter forks to make the reduced portions look and feel more like the old portion sizes.

THE ART OF SUPERSIZING

In the mid-1960s David Wallerstein managed a chain of movie theaters in Texas and was constantly trying to find a way to increase profits. Wallerstein tried different ways -- 2-for-1 popcorn sales and other food and beverage combinations -- but nothing worked. He eventually realized that customers were reluctant to buy 2 of anything because that would appear gluttonous.[142] Then he decided to rethink portion sizes.

Wallerstein took his theory to Ray Kroc, the founder of McDonalds, and persuaded him to serve bigger portions. After setting up video surveillance and watching customers, Kroc saw that although customers were reluctant to order seconds, they were happy to keep eating. The result: Supersizing.[143] Wallerstein may have been one of the first to explore the economics of portion sizes, but he certainly wasn't the only one to benefit. In the 1970s, a Coca-Cola representative tried to sell the idea of 32-ounce cups to 7-Eleven. Although Dennis Potts, a midlevel manager of 7-Eleven at the time, thought people would never buy them, he gave the idea a try -- thus creating the still successful Big Gulp.[144]

Fast-food and restaurant customers have come to associate huge quantities of food with value, a combination that leads to an increase in caloric consumption per individual. A study at Pennsylvania State University found that consumers who were given a 50-percent larger pasta dish ate 43 percent more than those given a smaller portion.[145] Another study reports that Americans are eating more calories per day than they did in the 1970s.[146]

Some companies, such as McDonald's and Wendy's, have eliminated their "Supersize" and "Biggie" menus after criticism and negative publicity.[147] But the question remains whether dropping these menus choices affected any real change in the industry. A study by a professor and dietician at New York University found that Wendy's original "Biggie" drink, containing 32 ounces, has been renamed simply as a medium. A large now contains 42 ounces.[148]

F. ECONOMIC COSTS OF OBESITY

HEALTH CARE COSTS

- The total cost of obesity and physical inactivity in 2000 was estimated to be $117 billion.[149]
- Obesity-related annual costs for children more than tripled between 1979 and 1999.[150]
- A 2008 study reported that obese employees cost private employers approximately $45 billion a year as a result of medical expenses and excessive absenteeism.[151]
- Obesity has been linked to a 36 percent increase in healthcare spending, which is presently more than smoking or drinking.[152]
- Higher health care costs for obese and sedentary workers signal poorer overall health among these individuals. And given poorer health, lower worker productivity and increased absenteeism are more likely among obese and physically inactive employees.

Lower Worker Productivity and Increased Absenteeism

- Researchers found that obese workers had 183.63 lost workdays per 100 full-time employees, compared to normal weight workers who had 14.19 lost workdays per 100 full-time employees.[153]
- As people's BMI increases so do the number of sick days, medical claims and health care costs.[154]
- A 2004 study concluded that excessive weight and physical inactivity negatively impact the quality of work performed, the quantity of work performed and overall job performance among obese, sedentary individuals.[155]

Higher Workers' Compensation Claims

- A number of studies have shown obese workers have higher workers' compensation claims.[156, 157, 158, 159, 160, 161]
- A 2007 study found that excessive weight gain among employees is related to higher amounts of workers' compensation claims.[162] Obese workers had on average 11.65 claims per 100 full-time employees, compared to normal weight employees who had 5.8 claims per 100-full time employees.[163]
- The cost of obese employee workers' compensation claims were also significantly higher. Obese employees had $51,091 in medical claims costs per 100 full-time employees, compared to only $7,503 in medical claims costs for normal weight workers. And obese workers had $59,178 in indemnity claims costs per 100 full-time employees, compared to only $5,396 in indemnity claims costs for normal weight employees.[164]

Occupational Health and Safety Costs

- The number of severely obese (BMI $\geq$ 40) patients quadrupled between 1986 and 2000 from one in 200 to one in 50. The number of super-obese (BMI $\geq$ 50) patients grew by a factor of 5, from one in 2,000 to one in 400.[165] Emergency responders and health care providers face unique challenges in transporting and treating the heaviest patients.
- A typical ambulance outfitted with equipment and 2 emergency medical technicians (EMTs) that can transport a 400-pound patient costs $70,000. A specially outfitted bariatric ambulance that can transport patients weighing up to 1,000 pounds costs $110,000.[166]
- A standard hospital bed can hold 500 pounds and costs $1,000. A bariatric hospital bed that can hold up to 1,000 pounds costs $4,000.[167]
- Nearly one in 2 emergency medical technicians sustained a back injury while performing EMS duties. Most blamed lifting extremely obese patients.[168]

G. THE HIGH PRICE OF FOOD

USDA is predicting that food prices will rise 4.5 percent during 2008 due to a world-wide grain shortage, high energy costs, and a weak U.S. dollar. Rising food prices are likely to have a negative impact on Americans' eating habits, according to Carol Tucker Foreman, director of the Consumer Federation of America. She says middle- and low-income families may be simultaneously pushed towards hunger and obesity. "They will be hard pressed to buy fresh fruits and vegetables as prices rise. Instead, they will look to the cheapest foods which aren't necessarily the healthiest."[169]

There is little doubt that increases in the price of dairy goods, grains, and fresh fruits and vegetables will lead consumers to scale back on costlier, healthy food.[170] A 2007 study by researchers at the University of Washington found that unhealthy, high-calorie foods cost an average of $1.76 per 1,000 calories, while low-calorie, nutritious foods cost $18.16 per 1,000 calories.[171] The study also found that unhealthy, high-calorie foods are not only the least expensive, but also most resistant to inflation.[172] As University of Washington epidemiologist Adam Drewnowksi, one of the study's co-authors, told The Philadelphia Inquirer, "fruits, vegetables, and fish are becoming luxury goods completely out of reach of many people. Consumption of cheap food will only grow."[173]

Already, rising food costs have prompted changes at food banks and charities, government social assistance programs, and schools.

Food Banks

The U.S. economic downturn has forced more Americans to seek food assistance. A top official at America's Second Harvest, the nation's leading hunger-relief charity, told *The Washington Post* that requests for food assistance from April 2007 to April 2008 are up 30 percent.[174] The increased demand for food assistance comes at a time when food contributions from farmers and grocery chains have declined. Farmers are both able to export more of their goods and sell certain cash crops, such as corn and soybeans to domestic renewable energy producers. Meanwhile, grocery chains have strengthened their inventory management leading to fewer surplus goods.[175] The pressure has gotten so bad that some charities are asking state and local governments for help.

Federal Food Assistance Programs

According to the Congressional Budget Office, double-digit growth in federal food and nutrition programs, such as the Supplemental Nutrition Assistance Program (SNAP) (formerly the Food Stamp Program) and Women, Infants and Children (WIC) will continue through 2008 as a result of rising unemployment.[176] The number of Americans receiving food stamps is projected to grow from 26.5 million in 2007 to 27.8 million in 2008.[177] Although food stamps provide needy Americans with a safety net, critics contend the program hasn't kept up with inflation, meaning that recipients are able to buy fewer foods with their benefits.

WIC is also facing rising demand coupled with increasing prices for food good. WIC provides federal grants to states for supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women, and to infants and children up to age 5 who are found to be at nutritional risk.[178] Unlike the food stamps program, WIC is not an entitlement and Congress would have to approve an increase in appropriations to avoid denying aid to low-income mothers and children.

School Lunch Programs

Schools across the country are also dealing with rising food prices. The cost of staple foods including, milk, grains, produce and meat have risen over 23 percent.[179] The Miami-Dade County Public School System saw the price of milk rise an additional $4.5 million in the 2007-2008 school year alone.[180]

Rising food prices have come at a time when schools are also being asked to prepare healthier, lower-fat meals to help stem the tide of childhood obesity. In many cases, schools are being forced to cut back on more expensive foods such as whole-grain breads and fresh fruits and vegetables.[181] According to Kenneth Hecht, executive director of California Food Policy Advocates, a public policy organization dedicated to improving the health of low-income Californians, schools are forced to cut back on the healthier, more costly items because school boards do not want to lose money. "This insistence that food service stay in the black means that revenues must be high," he told the Committee on Education and Labor of the U.S. House of Representatives, which held hearings on the subject in March 2008.[182] Without an increase in state or federal funding, he said schools will be forced to choose less healthy, less expensive foods that they can sell for a profit, such as sugary drinks or potato chips.

State Responsibilities and Policies

SECTION 3

In this section, TFAH examines trends in state legislative actions and policies aimed at obesity reduction. This overview is intended to help inform and begin an evaluation of whether these efforts are having a positive impact.

Each state identifies goals and strategies for improving the health of its citizens. States are undertaking a wide range of efforts to address the obesity crisis. Since 2003, TFAH has been reviewing these state policies. For this year's report, TFAH produced a supplement to *F as in Fat: How Obesity Policies Are Failing in America* entitled, Obesity-Related Legislative Action in States, which provides greater detail about specific legislation. The supplement is available on TFAH's Web site, www.healthyamericans.org.

This section provides an overview and update to previous years' analyses and includes:

A. State Obesity Plans.

B. Survey of State Chronic Disease Directors and Directors of Health Promotion and Education.

C. State Obesity-Related Legislation.

D. Qualitative Evaluation of State Obesity-Related Legislation.

A. STATE OBESITY PLANS

Over the past decade, the majority of states and D.C., have added overweight and obesity to their list of important issues to address.[183] As a result, a growing number of states have published state plans that focus on physical activity and healthy nutrition. Currently, 41 states have plans in place with specific strategies and goals to lower the prevalence of overweight, obesity and obesity-related chronic diseases in each state. Virginia and D.C. have childhood obesity plans, and at least 7 more have drafts of plans in the works, which they expect to make available to the public over the next year or 2. (See Appendix B: Methodology for State Obesity Plan Review.)

Each state has a unique plan, but many programs contain similar goals and means to achieve those goals. One objective common to almost every state is the urgency to get people involved on all levels; this is known as the Social-Ecological Model. This model aims to affect behavioral change by engaging all levels of influence -- individual, interpersonal, organizational, community, and public policy.[184] Many of the plans draw on guidance from CDC to use policy and environmental changes to target 6 specific behaviors:

- Physical activity.
- Fruit and vegetable intake.
- Breastfeeding.
- Consumption of sugar-sweetened beverages.
- Intake of high energy density foods.
- Television viewing.

Some states focus exclusively, or to a large extent, on childhood obesity. Generally, states have goals to improve childhood health through decreasing the amount of time children spend in front of the TV and other electronic entertainment devices, increasing physical activities available to all children, using public schools to implement physical activity

and healthy nutrition programs, and encouraging communities to help raise healthier children through local involvement.

While some states have more general goals of decreasing the percentage of overweight people in their state, others have set out very specific goals. Utah, for instance, expects that by 2010 the percentage of children in that state who report being overweight by 10 percent or more will decrease from 12.3 percent to 10.8 percent.[185]

Developing a plan to address the problem of overweight and obesity is an important step in the process of implementing change, but it is certainly not the only step. In order to turn a plan into action, the state must secure the appropriate funding. Unfortunately, a majority of the state plans do not address the issue of funding, or only briefly mention the need to secure funding. Many of the plans refer to the need to secure resources for implementation or suggest that local organizations apply for mini-grants, but beyond that there is no mention of how the plan will become a reality. Fewer than 10 states include details regarding strategies for funding. New Mexico is one of the few that includes a detailed description of how it intends to fund the plan by linking each objective to a funding source.

It is also important to include a system of measurement to determine what the state has accomplished, and to ensure that the state continues to work toward the plan's goals. The majority of states have a surveillance and evaluation section within their plans to ensure that programs are monitored, and the programs correlate with the goals of the plan. One of the best ways to monitor and evaluate a plan is through pilot programs, which many of the states have already instituted or intend to institute.

While all the plans suggest programs and activities to improve health and nutrition, 20 of the plans include current rates of overweight or obesity within the state and also a target percentage that should be reached by a certain time. For example, one objective of the Arkansas plan is to increase the percentage of children and adults who have a healthy BMI. For adults, the goal is to go from 38 percent in 2003 to 42.1 percent in 2010, and for children the goal is to go from 60 percent to 65 percent.[186]

Publishing a nutrition and physical activity plan is just the first step of many that a state must take. Implementation and follow-through are the next, and most important, steps.

REVIEW OF STATE OBESITY PLANS — 2008

States	Does the state have a strategic plan to combat obesity?	Does the plan involve multiple state agencies?	Does the plan specifically assign roles & responsibilities to state agencies?	Does the plan contain clear and measurable objectives?	Are the plan objectives related to reducing rates of obesity?	Does the plan link funding to objectives?	Does the plan include private sector (business, industry) and community groups?	Does the plan include provisions regarding a healthier state workforce?	Does the plan have a system for evaluation and review?
Alabama	✓	✓		✓	✓		✓		
Alaska	✓	✓	✓	✓	✓		✓	✓	✓
Arizona	✓	✓	✓	✓			✓	✓	✓
Arkansas	✓	✓		✓	✓		✓	✓	
California	✓	✓	✓			✓	✓	✓	✓
Colorado	✓	✓	✓	✓	✓		✓	✓	✓
Connecticut	✓	✓	✓	✓	✓		✓	✓	✓
Delaware	✓	✓	✓	✓	✓		✓	✓	✓
D.C. ^	✓	✓	✓	✓	✓	✓	✓	✓	
Florida	✓	✓	✓	✓		✓	✓	✓	
Georgia	✓	✓	✓	✓	✓		✓	✓	✓
Hawaii	✓	✓	✓	✓			✓	✓	✓
Idaho*									
Illinois	✓	✓		✓	✓		✓	✓	✓
Indiana*									
Iowa	✓	✓	✓	✓	✓		✓	✓	✓
Kansas*									
Kentucky	✓	✓	✓	✓	✓		✓	✓	✓
Louisiana	✓						✓	✓	
Maine	✓	✓	✓	✓	✓		✓	✓	✓
Maryland	✓	✓	✓	✓	✓		✓	✓	✓
Massachusetts	✓	✓	✓	✓			✓	✓	
Michigan	✓	✓	✓	✓			✓	✓	
Minnesota	✓	✓		✓	✓		✓	✓	✓
Mississippi*									
Missouri	✓	✓		✓			✓	✓	✓
Montana	✓	✓	✓	✓		✓	✓	✓	✓
Nebraska	✓	✓		✓			✓	✓	✓
Nevada	✓	✓	✓	✓	✓		✓	✓	
New Hampshire	✓	✓	✓	✓	✓		✓	✓	✓
New Jersey	✓	✓	✓	✓		✓	✓	✓	✓
New Mexico	✓	✓	✓	✓		✓	✓	✓	✓
New York	✓	✓	✓	✓			✓	✓	✓
North Carolina	✓	✓		✓			✓		
North Dakota*									
Ohio*									
Oklahoma	✓	✓		✓	✓		✓	✓	✓
Oregon	✓	✓	✓	✓	✓		✓	✓	
Pennsylvania	✓						✓		
Rhode Island	✓	✓	✓	✓	✓	✓	✓	✓	✓
South Carolina	✓	✓	✓	✓	✓		✓	✓	
South Dakota	✓	✓	✓	✓	✓		✓	✓	✓
Tennessee*									
Texas	✓	✓	✓	✓	✓		✓	✓	✓
Utah	✓	✓	✓	✓	✓		✓	✓	
Vermont	✓	✓	✓	✓	✓		✓	✓	
Virginia ^	✓	✓							
Washington	✓	✓		✓		✓	✓	✓	✓
West Virginia	✓	✓		✓	✓		✓	✓	✓
Wisconsin	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wyoming									
	42+DC	**41+DC**	**29+DC**	**38+DC**	**25+DC**	**8+DC**	**41+DC**	**38+DC**	**28**

*Note: States with an * have a draft obesity plan in the works. States with an ^ have childhood obesity plans.*

B. SURVEY OF CHRONIC DISEASE DIRECTORS AND DIRECTORS OF HEALTH PROMOTION AND EDUCATION

In order to understand which obesity prevention and reduction strategies experts believe are most effective and important, TFAH conducted a survey of state Chronic Disease Directors (CDDs) and state Directors of Health Promotion and Education (DHPEs). CDDs and DHPEs are state government employees who serve on the front lines of public health in each state by developing and implementing policies and programs to prevent chronic disease and promote better health.

In May 2008, the National Association of Chronic Disease Directors (NACDD) and the DHPE association distributed a survey by email to their members. The survey was administered through the Internet service Survey Monkey (www.surveymonkey.com) and was available for a period of over 3 weeks. A total of 25 CDDs and DHPEs responded to the survey. There was a general consensus between respondents with regards to barriers to solving the problem of obesity, as well as what direction they would like to see the new administration take.

1) STATE STRATEGIC PLANS TO COMBAT OBESITY

Almost two-thirds (64.3 percent) of the respondents reported that their state currently has a strategic plan to combat obesity. While this is a much needed and promising step for states to take, the directors voiced a few concerns associated with the plans, including:

- Lack of resources to implement the strategic plan.
- Recent or anticipated loss of federal funding.
- Shortage of data to measure performance outcomes of strategic plan.

In addition, respondents noted the following limitations with implementing their state's obesity plans:

- 94 percent expressed frustration with data limitations and problems with measuring their programs' outcomes.
- 82 percent said that their state does not have the necessary workforce to design, implement and evaluate physical activity, nutrition and obesity programs.
- 75 percent responded that their plans have no funding linked to their strategic obesity plan.

2) BARRIERS TO SOLVING THE PROBLEM OF OBESITY

What Are the 3 Major Barriers to Preventing and Treating Obesity In Your State?	
Lack of population health funding for health promotion and disease prevention	91.3%
Lack of leadership on the issue (e.g., obesity is not a political priority, government funds not being allocated to the issue, etc.)	47.8%
Lack of research and practice-based evidence to influence policies and programs.	43.5%
Lack of skilled workforce to carry out implementation.	34.8%
Unclear and inconsistent messages regarding nutrition and physical activity.	21.7%
Lack of public awareness about severity of problem	21.7%

The CDDs and DHPEs reported the top 3 barriers to treating obesity in each state included:

- Lack of funding for health promotion and disease prevention.
- Lack of leadership.
- Lack of research and practice-based evidence to influence policies and programs.

Respondents also expressed concern about lack of insurance coverage for obesity treatments, such as nutrition counseling.

3) SUGGESTED PRIORITIES FOR THE NEXT ADMINISTRATION

The 2008 presidential election presents a unique opportunity for public health officials to communicate their priorities to the next administration. TFAH asked the CDDs and DHPEs for their recommendations for the next administration regarding one important action the federal government should take to address adult and childhood obesity.

Overall many of the directors had similar ideas. The top 3 recommendations for adults included:

- Funding for all states to address obesity.
- Strengthen worksite wellness programs.
- Work on environmental changes, specifically improving the built environment.

In addition to funding, CDDs and DHPEs would like to see more evidence-based research that shows the most effective strategies for obesity reduction. Nearly half of the respondents said that more research is needed on individual and community-level interventions, including policy changes.

Respondents identified 2 actions as crucial for childhood obesity:

- Increase physical activity opportunities, specifically during the school day.
- Improve nutrition in schools, homes, communities, and in advertisements directed at children.

4) FOCUS OF NIH OBESITY PREVENTION RESEARCH AGENDA

TFAH asked CDDs and DHPEs what their top research question would be if they could determine the National Institute of Health's (NIH) research agenda for obesity. Again, many of the respondents emphasized the need for more evidence-based strategies for preventing and treating obesity. In particular, respondents wanted NIH to focus on the following questions:

- How can people maintain weight loss? Other than gastric surgery, what are the most effective treatments for obesity? Given our very limited resources, can we identify the candidates for treatment that will have the best chance for success?
- How do we translate research into practice? Instead of focusing on clinical approaches to fighting obesity, researchers need to look at community, worksite and school-based approaches.
- Do physical activity/physical education requirements and high nutrition standards help students perform better in the classroom? If there is a connection between healthier school environments and students' academic performance this could bring together public health advocates and education advocates.
- What are the most effective ways to motivate and encourage people to lead healthy, active lives? What communication messages work?
- Is there evidence – both in terms of improved health and a return on investment – to support coverage of prevention services in benefits plans?

C. STATE OBESITY-RELATED LEGISLATION

Since 2003, TFAH has tracked state obesity-related legislation in the following categories: school nutrition, physical education, physical activity, and height and weight measurements; tax policies; and litigation. This section provides an updated summary state obesity-related legislation enacted between July 1, 2007 and June 30, 2008.

Additional details about the legislation can be found in the supplement to *F as in Fat: How Obesity Policies Are Failing in America* on TFAH's Web site.

1) SCHOOL-FOCUSED OBESITY LEGISLATION

School-based programs have been shown to have the potential to yield positive results in preventing and reducing obesity.[187] Children spend large amounts of time at school and in before- and after-school programs, often consuming as many as 2 meals and snacks in these settings.

The more than 14,000 school districts in the United States have primary jurisdiction for setting local school policies. States can establish policies or pass legislation that affect schools, but the school districts typically have discretion in deciding if they will follow them, a principle known as local control. States often try to create incentives for following policies, such as attaching compliance rules to state funding.

Emerging school-based efforts have focused on improving the quality of food sold in schools, limiting sales of less nutritious foods, improving physical education and health education, and encouraging increased physical activity either within the school day or through extracurricular activities.

OBESITY-RELATED STANDARDS IN SCHOOLS -- 2008

	Nutritional Standards for School Meals	Nutritional Standards for Competitive Foods	Limited Access to Competitive Foods	Physical Education Requirements	BMI or Health Information Collected	Non-Invasive Screening for Diabetes	Health Education Requirements	Receives CDC School Health Grants
Alabama	✓	✓	✓	✓			✓	
Alaska				✓			✓	
Arizona	✓	✓	✓	✓			✓	✓
Arkansas	✓	✓	✓	✓	✓		✓	✓
California	✓	✓	✓	✓	✓	✓	✓	✓
Colorado	✓		✓	✓				✓
Connecticut	✓	✓	✓	✓			✓	✓
Delaware				✓	✓		✓	
DC				✓			✓	
Florida			✓	✓	✓		✓	
Georgia			✓	✓			✓	
Hawaii		✓	✓	✓			✓	
Idaho				✓			✓	✓
Illinois		✓	✓	✓	✓	✓	✓	
Indiana		✓	✓	✓			✓	
Iowa				✓	✓		✓	
Kansas				✓			✓	
Kentucky	✓	✓	✓	✓			✓	✓
Louisiana		✓	✓	✓	✓		✓	
Maine		✓	✓	✓	✓		✓	✓
Maryland		✓	✓	✓			✓	
Massachusetts				✓	✓		✓	✓
Michigan				✓			✓	✓
Minnesota				✓			✓	✓
Mississippi	✓	✓	✓	✓			✓	✓
Missouri				✓	✓		✓	
Montana				✓			✓	
Nebraska			✓	✓			✓	
Nevada	✓	✓	✓	✓			✓	
New Hampshire				✓			✓	
New Jersey	✓	✓	✓	✓			✓	✓
New Mexico		✓	✓	✓			✓	
New York			✓	✓	✓		✓	✓
North Carolina	✓	✓	✓	✓			✓	✓
North Dakota				✓			✓	✓
Ohio				✓			✓	✓
Oklahoma	✓	✓	✓	✓				
Oregon		✓	✓	✓			✓	
Pennsylvania		✓		✓	✓		✓	
Rhode Island	✓	✓		✓	✓		✓	
South Carolina	✓	✓	✓	✓	✓		✓	✓
South Dakota	✓			✓			✓	✓
Tennessee	✓	✓		✓	✓		✓	
Texas	✓	✓	✓	✓	✓		✓	
Utah				✓			✓	
Vermont	✓			✓			✓	
Virginia				✓			✓	
Washington				✓			✓	✓
West Virginia		✓	✓	✓	✓		✓	✓
Wisconsin				✓			✓	✓
Wyoming				✓			✓	
# of States	**18**	**25**	**27**	**50 + D.C.**	**19**	**2**	**48 + D.C.**	**22**

Please Note: Checkmarks in chart above that are in red type represent new laws passed in 2007 or 2008.

SCHOOL LUNCHES

- **Eighteen states set nutritional standards for school lunches, breakfasts, and snacks that are stricter than existing USDA requirements** -- Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Kentucky, Mississippi, Nevada, New Jersey, North Carolina, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Texas and Vermont.

States that implemented new regulations between July 1, 2007, and June 30, 2008, include:

- **California** required as a condition to receiving funds from special grants for child nutrition in schools, commencing in 2007-2008 fiscal year, school districts and schools shall be in compliance with USDA guidelines or the menu planning options of Shaping Health as Partners in Education developed by the state (SHAPE California network) (SB 80 related bill) and prohibited from selling or serving any food item that has in any way been deep fried, par fried, or flash fried or sell or serve a food item containing artificial trans fat (SB 132).
- **Colorado** established the Child Nutrition School Lunch Protection Program to ensure that each student in a Colorado public school has access to a healthy lunch at school. One objective includes increasing students' consumption of whole grains, fruits and vegetables, vitamins, calcium, protein, fiber, and iron; and reduce the consumption of sodium, cholesterol, sugar and calories (SB08-123).
- **Tennessee** required each local school board to submit to the commissioner a plan to require that availability of local agriculture products (SB 3341).
- **Texas** established a mandatory report relating to reducing the amount of trans fat in schools (HB 4062).

SCHOOL MEAL NUTRITION GUIDELINES

School meal nutrition standards do not reflect current nutrition science and, unfortunately, are unlikely to be updated for about 3 years. Since 1994, the Richard Russell National School Lunch Act has required the school lunches to meet the Dietary Guidelines for Americans (DGAs). In 2004, the Child Nutrition and WIC Reauthorization Act of 2004 (P.L. 108-265) required the U.S. Secretary of Agriculture to issue school nutrition guidelines that would ensure that American schoolchildren consume foods recommended in the most recent DGAs. However, USDA has issued no proposed regulations in the 3 years since the release of the 2005 DGAs.[188] Instead, after deliberating internally for those years, USDA was unable to come to a consensus and contracted with the Institute of Medicine (IOM) to convene a panel of experts on child nutrition. In late 2009, the IOM Committee on Nutrition Standards for School Lunch and Breakfast Programs is expected to provide USDA with recommendations for updating the school meal programs' nutrition requirements. Once USDA receives the IOM recommendations, agency officials will then seek to incorporate them into formal USDA guidance, which is expected to be issued some time in 2010. A final rule will take even longer to be issued. This turn of events effectively postpones the update of school meal nutrition standards by 5 years beyond when they were due. Given the fact that school meal nutrition standards lack standards for sodium, trans fat, and whole grains, and that the fruit and vegetable content is too low, this delay is of considerable public health concern.

In the meantime, USDA is encouraging states to gradually begin implementing 2005 DGAs within school meal programs by:[189]

- Increasing the amount and variety of whole-grain products.
- Increasing the availability of fruits and vegetables and ensuring that school meals offer both a fruit and a vegetable.
- Offering only skim or 1 percent low-fat milk in schools.
- Reducing sodium content in all meals.
- Providing fiber at levels that reflect the DGAs.
- Cutting cholesterol levels in meals so that over a week students consume less than 100 mg of cholesterol at lunch and less than 75 mg at breakfast.
- Minimizing the use of trans fats.

Until USDA releases new guidelines incorporating the DGAs into school lunch menu planning, states are relying on the School Meals Initiative for Healthy Children (SMI), which requires schools to offer meals that provide no more than 30 percent of total calories from fat and less than 10 percent from saturated fat. The SMI also requires school lunches to provide adequate levels of certain nutrients.

In 2007, USDA published findings from its third School Nutrition Dietary Assessment Study (SNDA-III).[190] SNDA-III is based on data collected in the spring semester of the 2004-2005 school year and provides a snapshot of the school lunch and breakfast programs. At the time, states primarily were using the SMI to guide meal planning, although in the years since many state agencies and schools have established nutrition policies that exceed SMI guidelines as they seek to address concerns about the childhood obesity epidemic. SNDA-III found:

- More than two-thirds of school lunch programs offered and served lunches that met SMI standards for protein, vitamins, and minerals, while only 20 percent of schools offered and served lunches that met SMI standards for fat.
- Ninety-three percent of elementary schools and 86 percent of secondary schools offered students the choice of a low-fat lunch.
- More than half of the schools (58 percent) offered students some type of fresh fruit and/or raw vegetable every day.
- Eighty-three percent of schools offered low-fat, one percent milk.
- Less than one-third of schools (30 percent) used nutrient-based standards for school meals, a system that ensures meals meet age- and grade-appropriate nutrition standards.

COMPETITIVE FOODS

Competitive foods are defined as foods sold at the same time as National School Lunch Program foods are available.[191] These foods are sold in vending machines, a la carte lines, and school stores.

- **Twenty-five states have nutritional standards for competitive foods sold ala carte, in vending machines, in school stores, or in school bake sales** -- Alabama, Arizona, Arkansas, California, Connecticut, Hawaii, Illinois, Indiana, Kentucky, Louisiana, Maine, Maryland, Mississippi, Nevada, New Jersey, New Mexico, North Carolina, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, and West Virginia.

States that implemented new regulations between July 1, 2007, and June 30, 2008, include:

- **California** Commencing July 1, 2009, schools or school district are prohibited, through a vending machine or school food service establishment during school hours and up to 1/2 hour before and after school hours, from making available to elementary or middle school pupils a food containing artificial trans fat and would prohibit the use of artificial trans fat in the preparation of a food item served to those pupils (SB 490).
- **North Carolina** sets forth a wellness pilot for state employees as well as directs the Board of Education to establish statewide nutrition standards for school meals, a la carte foods and beverages, and items served in the After School Snack Program administered by the Department of Public Instruction and child nutrition programs of local school administrative units. The nutrition standards will promote gradual changes to increase fruits and vegetables, increase whole grain products, and decrease foods high in total fat, trans fat, saturated fat, and sugar. To start in elementary schools followed by middle and high schools (HB 1473).
- **Oregon** provides restrictions on the nutritional content and caloric load of certain foods and beverages sold in schools during specified times of school operation (HB 2650).
- **Pennsylvania** directs the Department of Education to establish a School Nutrition Incentive Program. The program shall provide a supplemental school lunch and breakfast reimbursement to any school in a local education agency that has adopted and implemented the Pennsylvania Department of Education's Nutrition Standards for Competitive Foods.[192] The standards apply to food, snacks, and beverages sold a la carte, in vending machines, at fundraisers, at school stores, and those served in classroom parties and holiday celebrations. (H.B. 842).
- **Twenty-seven states limit when and where competitive foods may be sold beyond federal requirements** -- Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Illinois, Indiana, Kentucky, Louisiana, Maine, Maryland, Mississippi, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, Oklahoma, Oregon, South Carolina, Texas, and West Virginia.

States that implemented new regulations between July 1, 2007, and June 30, 2008, include:

- **California** law mandates that as of July 1, 2009, schools or school district are prohibited, through a vending machine or school food service establishment during school hours and up to 1/2 hour before and after school hours, from making available to elementary or middle school pupils a food containing artificial trans fat and would prohibit the use of artificial trans fat in the preparation of a food item served to those pupils (SB 490).
- **Oregon** law requires that all food and beverage items sold in public K-12 grade schools must at minimum meet nutrition standards. Those standards apply to food and beverage items sold in a school at all times during the regular or extended school day when the activities in the school are primarily under the control of the school district board. This includes, but is not limited to, the time before or after classes are in session and the time when the school is being used for activities such as clubs, yearbook, band or choir practice, student government, drama rehearsals or child care programs. The standards required by this section do not apply to food and beverage items sold in a school at times when the school is being used for school-related events or nonschool-related events for which parents and other adults are a significant part of an audience or are selling food or beverage items before, during or after the event, such as a sporting event or another interscholastic activity, a play or a band or choir concert (HB 2650).

CONCERNS ABOUT COMPETITIVE FOODS IN SCHOOLS

Competitive foods are defined as foods sold at the same time as National School Lunch Program foods are available.[193] These foods are sold in vending machines, a la carte lines, and school stores. Although competitive foods sometimes include fruits and vegetables, more often than not they are high in fat, sugar, and salt, which increases the likelihood of over-consumption of calories and unhealthy weight gain.[194]

According to USDA's School Nutrition Dietary Assessment Study III (SNDA-III), the prevalence of competitive foods is widespread. Approximately one-third of elementary schools and close to two-thirds of middle and high schools had foods or beverages other than milk for sale through vending machines, a la carte, and/or school stores during the lunch period.[195] Vending machines, which are often stocked with chips, candy, and cookies, were available to students in more than 80 percent of middle schools and 97 percent of high schools.[196] A separate study published in the journal Pediatrics found that food items sold a la carte were found in 71 percent of elementary schools, 92 percent of middle schools, and 93 percent of high schools. Of these schools, almost 80 percent provided unhealthy food items in their a la carte options.[197]

In addition to the diet-related health risks, USDA has highlighted a number of other concerns related to competitive foods[198]:

- **Impact on school meal programs:** The increase in competitive food sales and accompanying decrease in student participation in the National School Lunch Program have implications for the overall viability of the program. Declining participation results in decreased cash and commodity support from USDA for school meals. The reduction in federal funds may also contribute to less interest on the part of schools in maintaining quality school meal programs that meet set nutritional standards, undermining the substantial federal investment in programs to provide healthy meals to children.
- **Stigmatization of school meal programs:** USDA has expressed concern that the National School Lunch Program is often viewed as just for low-income children rather than being available to all children. Often, affluent children spend their lunch money on items from vending machines and a la carte lines; these foods and beverages tend to be more expensive than the school meal.
- **A mixed message:** When children are taught in the classroom about good nutrition but are surrounded by vending machines, snack bars, school stores, and a la carte foods of poor nutritional quality, they receive the message that good nutrition does not actually matter and is therefore not important.[199]

Despite the low nutritional value of competitive foods, many schools sell these products to gain much needed revenue. A 2005 report by the U.S. Government Accountability Office (GAO) found that 9 out of every 10 public schools in the United States offered competitive foods to their students, and almost 30 percent of public high schools earned more than $125,000 from competitive food sales.[200]

A 2007 review of school nutrition policies regarding competitive foods by the Center for Science in the Public Interest (CSPI) found that while states have been strengthening their school nutrition policies over the past 10 years, "results show that the changes occurring at the state level, while positive, are fragmented, incremental, and not happening quickly enough to reach all schools in a timely way."[201] The report noted that while USDA sets detailed nutrition standards for federally subsidized school lunches, USDA's policy for competitive foods is "woefully out of date." In fact, although USDA can regulate the quality and kinds of food sold in school cafeterias during lunch hours, it does not have the authority to regulate foods sold either outside of the cafeteria or outside of meal times, such as food sold in school stores, vending machines, fundraisers, etc. Congress would need to pass a law to allow USDA to set nutrient standards for items sold outside of the cafeteria in schools. However, USDA has full authority to update its nutrition standards for foods sold in the cafeteria outside of school meals (e.g., through the a la carte line), and since USDA has not updated this standard since 1979 it is extremely out of date from a nutrition science perspective.

A 2007 IOM report, Nutrition Standards for Foods in Schools, does provides nutrition standards for competitive foods, both those sold in vending machines and in the cafeteria a la carte lines. The report states that while federal school meal programs should be the primary source of foods and beverages at schools, if competitive foods are available, they should "consist of nutritious fruits, vegetables, whole grains, and nonfat or low-fat milk and dairy products."[202]

Proceeds from competitive food sales are often used to pay for special activities or items not covered by the school's budget. As a result, there have been a number of challenges when local schools or parent-teacher associations have sought to make sure only healthy foods are sold in schools. The biggest challenge results from the fear of decreased revenue from competitive foods sold a la carte, in vending machines, and in school stores creating a financial hardship for the school.[203]

A 2008 review of the literature, however, found that school districts' fears about lost revenues due to changes in competitive food offerings were unfounded. In fact, in some schools, there was increased student participation in the school lunch program -- both from students paying full price for meals and from students receiving free or partially subsidized meals -- which may have compensated for any revenue losses in snack sales.[204]

PHYSICAL EDUCATION AND HEALTH EDUCATION IN SCHOOLS

The 2005 IOM report Preventing Childhood Obesity: Health in the Balance recommended that state and local education authorities and schools should ensure that all children and youth participate in a minimum of 30 minutes of moderate to vigorous physical activity during the school day.[205]

- **Every state has some form of requirements for physical education for students,** however, these requirements are often limited or not enforced and many of the programs are inadequate with respect to quality.

States that implemented new regulations between July 1, 2007, and June 30, 2008, include:

- **Arkansas** added K-6th grade physical activity set at a) 60 minutes per week of physical education and b) 90 minutes of physical activity per week, which may include daily recess and/or physical education instruction. Grades 5-8 requires 60 minutes of physical education with no added requirement for physical activity; and for 9-12 grades, 1/2 unit of physical education is required for graduation (HB1039).
- **California** clarified that a pupil may be granted exemption from courses in physical education if the pupil has met at least 5 of the 6 standards of the physical performance test (SB 602).
- **Colorado** included the addition of school district wellness programs (HB 08-1224).
- **Florida** mandated 30 minutes of physical education per day for grades 6-8 (changed from encouraged). Each district board shall provide 150 minutes of physical education each week for students in grades K-5 (SB 608). Also updated the contents of a school district's written physical education policy to add details concerning the benefits of physical education, and the availability of one-on-one counseling concerning such benefits. Provides for the conduction of at least 30 consecutive minutes of physical education for students in K-6 and requires a one class period per day of physical education for one semester for students in grades 6 through 8. Also provides waivers (SB 610).
- **Illinois** law provided that an approved waiver or modification to a physical education mandate remain in effect for no longer than two school years. The waiver can be renewed, but no more than twice. The new provision will require school systems to periodically review the waivers put into place, as opposed to allowing them to continue without review (HB 1839).
- **Louisiana** implemented the position of a health and physical education coordinator by the Department of Education (Act No.180).
- **Maryland** established a task force on student physical fitness in State Public Schools (SB 955). Also now requires county boards of education to ensure that students with disabilities have opportunities in specified physical education and athletic programs (HB 1411).
- **Oklahoma** increased P.E. requirement in elementary schools from 60 minutes to 120 minutes each week, beginning with 2008-2009 school year (SB 1186).
- **Oregon** every public school student in kindergarten through grade 8 shall participate in physical education for the entire school year. Students in kindergarten through grade 5 shall participate in physical education for at least 150 minutes during each school week. Students in grades 6 through 8 shall participate in physical education for at least 225 minutes during each school week (HB 3141).
- **Texas** students below sixth grade are required to participate in moderate or vigorous daily physical activity for at least 30 minutes throughout the school year as part of the district's physical education curriculum or through structured activity during recess. Beginning with the 2008-09 school year, students in grades 6 through 8 will be required to participate in daily physical activity for at least 30 minutes for at least four semesters during those grade levels (SB 530).
- **Virginia** required local school boards to provide a physical fitness program with a goal of 150 minutes per week for all students (HB 242).
- **West Virginia** implemented a wellness policy that states that school and district processes should include a focus on developing ethical and responsible character, personal dispositions that promote personal wellness through planned daily physical activity and healthy eating habits consistent with high nutritional guidelines (SB 595).
- **Only 2 states -- Colorado and Oklahoma -- do not require schools to provide health education.**

PHYSICAL EDUCATION AND ADULT BMI

A 2008 study by researchers at the Johns Hopkins Bloomberg School of Public Health found that high school students who participate in physical education 5 days a week are 28 percent less likely to become overweight as adults.[206]

The Institute of Medicine, the U.S. Department of Health and Human Services, and the American Academy of Pediatrics all recommend that students in all grade levels engage in daily physical education.[207,208,209] The reality, however, is that only 54 percent of high school students attended PE classes in an average week when they were in school and only 30 percent attended P.E. classes daily. In addition, participation in P.E. class declines as students grow older, although the reason for the decline is more likely related to school curriculum requirements.[210,211] According to the 2006 School Health Policies and Programs study[212]:

- 2 percent of high schools required P.E. daily for entire year;
- 7 percent of high schools required P.E. daily for half a year;
- 3 percent of high schools required P.E. for 3 days per week for entire year; and
- 9 percent of high schools required P.E. for 3 days per week for half a year.

The National Association for Sport and Physical Education (NASPE) recommends that schools provide 150 minutes of instruction of physical education for elementary school children, and 225 minutes for middle and high school students per week for the entire school year.[213]

PHYSICAL EDUCATION AND ACADEMIC ACHIEVEMENT

The positive effects of physical activity on brain function are well documented with a number of studies showing that aerobic activity improves cognition and performance.[214] Moderate and vigorous exercise increases the flow of blood to the brain, which has a stimulating effect.[215] Researchers speculate that this in turn makes schoolchildren more likely to pay attention in class during the school day than children who do not get any physical activity.[216] And, in fact, there is a growing body of evidence that suggests physical activity is related to academic achievement.[217]

Of 14 published studies investigating the link between participation in physical activity and academic performance, 11 found that regular participation in physical activity is associated with improved academic performance.[218]

The following are some highlights from recent research on physical activity, physical education, and academic performance:

- A 2008 study by researchers at CDC found that higher levels of physical education in school were associated with an academic benefit among girls.[219] There was, however, no association between the 2 for boys. Similar results were reported in a 1996 study of French-speaking Canadian schoolchildren.[220] Some have suggested that schoolgirls are less physically active than schoolboys and thus are more affected by the increase in physical activity.
- A 2007 study found that children who performed well on 2 measures of physical fitness tended to score higher on state reading and math exams, regardless of gender or socioeconomic status.[221]
- A 2006 study analyzed data from nearly 12,000 teens across the United States to examine the relationship between physical activity and academic performance. Adolescents who reported either participating in school activities such as P.E. and team sports, or playing sports with their parents, were 20 percent more likely than those teens who did not engage in physical activity to earn an "A" in math or English.[222]

There is also ample evidence that daily physical education does not adversely affect academic performance. Many school systems have eliminated P.E. or severely curtailed its offering to focus on core academic subjects that students are tested on as part of the No Child Left Behind Act; this is based on the assumption that sacrificing P.E. will give students and teachers more time to prepare for standardized tests and thereby boost the schools' scores on those tests. But in fact, a number of studies show that students who spend time in P.E. or other school-based physical activities increased or maintained their grades and scores on standardized tests even though they received less classroom time.[223] A 2006 study of sixth graders found that students enrolled in P.E. had similar grades and standardized test scores as students who were not enrolled in P.E., despite receiving nearly an hour less of daily classroom instruction on core academic subjects.[224]

The fact that investigators have concluded that, at the very least, extra time spent in P.E. does not hurt academic achievement is significant. Researchers are hopeful that this finding may persuade some school districts that reinstating P.E. classes need not come at the expense of their pupils' academic performance.

STUDENT HEALTH SCREENINGS

- **Seventeen states have passed Body Mass Index (BMI) screening requirements in schools OR legislation requiring weight-related assessments other than BMI.**

▲ **States with BMI screening requirements:** Arkansas, California, Florida, Illinois, Maine, Missouri, New York, Pennsylvania, Tennessee, and West Virginia.

▲ **States with weight-related screening requirements:** Delaware, Iowa, Louisiana, Massachusetts, Rhode Island, South Carolina, and Texas.

States that implemented new restrictions between July 1, 2007 and June 30, 2008 include:

- **New York** passed new legislation that addresses BMI assessment through health certificates in schools as directed by Commissioner of Health. Parents may refuse to be included in the survey. Each school district shall provide commissioner of Health with any information for purposes of an obesity report (SB2108).
- **Rhode Island** enacted a new law that establishes the state's healthy weight pilot program to be implemented in several cities and towns. The program will incorporate a combination of physical activity and nutrition plans that aim to encourage healthy weight and weight management in children. Funding for the program will come from federal grants, funds allocated to the state for the purpose of combating obesity and other sources deemed appropriate by the legislature (HB 5900).
- **Texas** passed new legislation that says school districts must assess the physical fitness levels of all students in grades 3 through 12 (SB 530).
- **Two states have enacted legislation requiring screening students for risk of type 2 diabetes --** California and Illinois.

WEST VIRGINIA'S CARDIAC PROJECT

The Coronary Artery Risk Detection in Appalachian Communities (CARDIAC) Project was launched 10 years ago in an effort to combat high levels of cardiovascular disease that afflict West Virginians -- adults and children -- in large numbers. The school-based prevention program started out in 3 counties in West Virginia and has since expanded to all of the state's 55 counties. In addition to providing health screenings to elementary school children across the state, the CARDIAC Project mails a comprehensive health report to the children's families. The detailed report not only contains information on how to interpret the screening results, but includes nutrition and physical activity recommendations for children and families.[225]

According to recent data from the project, the intervention is working. In the 2006-2007 school year, 27.7 percent of fifth graders were obese based on BMI screening. That number dropped to 25.8 percent in the 2007-2008 school year.[226] Children in other grades experienced declines in overweight and obesity as well, with the percentage of obese kindergartners falling from 20 percent to 17 percent. Among second-graders, the percentage of overweight students dropped from 19 percent to 15 percent.[227]

PHILADELPHIA'S SCHOOL-BASED OBESITY PREVENTION INTERVENTION

A May 2008 article in *Pediatrics*, reported the results of a school-based intervention at 5 elementary schools in inner-city Philadelphia. The School Nutrition Policy Initiative focused on the prevention of overweight and obesity among children in grades 4 though 6 over a 2-year period. The program included 5 components: School self-assessment; nutrition education; nutrition policy; social marketing; and parent outreach.[228]

The school self-assessment looked at environmental issues and focused on developing an action plan for change. Among the recommendations: Limit the use of food as a reward; limit the use of unhealthy food for fundraising (e.g., bake sales); promote active recess; and serve breakfast in classrooms. School staff received approximately 10 hours of training in nutrition education in order to enable them to provide 50 hours of food and nutrition education per school year. School food service programs removed all sodas, sugary drinks, and snacks that did not meet the Dietary Guidelines for Americans. The program used social marketing to increase the consumption of healthy foods and promote active lifestyles. Finally, the program included a family outreach component to encourage parents and students to purchase healthy snacks, limit TV viewing and be more active.

At the start of the program, about 40 percent of the 1,349 students in grades 4 through 6 were overweight or obese. Over the course of the 2-year program, there was a 50 percent reduction in the number of children who became overweight. In the control schools, 15 percent of the children became overweight compared to 7.5 percent in the intervention schools. There were no differences observed in the number of children who were obese. This, coupled with the fact that 7.5 percent of students in the intervention schools still became overweight suggests that stronger programs may be needed.

2) COMMUNITY-FOCUSED OBESITY LEGISLATION

States have also enacted obesity-related legislation aimed at the general population. These actions include tax policies, litigation restrictions, and planning and transportation policies.

OBESITY RELATED STATE INITIATIVES -- 2008				
	Has Snack Taxes	Has a CDC State-Based Nutrition & Physical Activity Program	Receives STEPS Grant	Has Limited Liability Laws
Alabama			✓	
Alaska				
Arizona				✓
Arkansas	✓	✓		
California	✓	✓		
Colorado		✓		✓
Connecticut				
Delaware				
DC	✓			
Florida				✓
Georgia		✓		✓
Hawaii				
Idaho				✓
Illinois	✓			✓
Indiana	✓	✓		✓
Iowa		✓		
Kansas				✓
Kentucky	✓			✓
Louisiana				✓
Maine	✓			✓
Maryland				
Massachusetts		✓		
Michigan		✓		✓
Minnesota	✓	✓	✓	
Mississippi				
Missouri	✓			✓
Montana		✓		
Nebraska		✓		
Nevada				
New Hampshire		✓		✓
New Jersey	✓	✓		
New Mexico				
New York	✓	✓		
North Carolina		✓		
North Dakota	✓			✓
Ohio				✓
Oklahoma				
Oregon				✓
Pennsylvania			✓	
Rhode Island	✓	✓		
South Carolina		✓		
South Dakota				✓
Tennessee	✓	✓		✓
Texas	✓	✓		✓
Utah		✓		✓
Vermont				
Virginia	✓			
Washington	✓	✓		✓
West Virginia	✓	✓		
Wisconsin		✓		✓
Wyoming				✓
# of States	**17 + D.C.**	**23**	**3**	**24**

SNACK TAXES

One way many states have tried to mitigate the obesity epidemic is by taxing junk foods in an attempt to reduce people's consumption of these products.

Seventeen states and D.C. currently have laws that tax foods of low nutritional value:[229] Arkansas, California, D.C., Illinois, Indiana, Kentucky, Maine, Minnesota, Missouri, New Jersey, New York, North Dakota, Rhode Island, Tennessee, Texas, Virginia, Washington, and West Virginia.

These taxes, also known as "Twinkie Taxes," and "fat taxes," are highly controversial. While proponents of the taxes argue that a tax on junk food could be used to fund a healthy eating and nutrition information campaign, opponents cite several problems.[230] First, as health economist Eric A. Finkelstein notes, these taxes penalize the poor "because people on lower incomes spend a higher proportion of their income on food, [therefore] this type of tax is largely regressive in nature."[231] In addition, the amount of taxes levied on junk foods is so small that it is unlikely to serve as a deterrent to people. Finally, many states that have passed a version of a snack tax do not always use the revenues to combat obesity. Instead, snack tax revenues are used to fund a wide variety of state activities.

Despite these problems, a growing number of Americans support the idea of taxing unhealthy foods as a means to combat obesity and promote healthy nutrition. According to researchers at Yale University's Rudd Center for Food Policy and Obesity, the number of Americans who support taxing unhealthy foods to subsidize healthy foods has risen from 33 percent in 2001 to 40 percent in 2003 and 54 percent in 2004.[232]

Researchers at Yale University report that national junk food taxes could generate over $1.8 billion per year from the following items:

- A 1-cent per 12-ounce soft drink tax would generate $1.5 billion per year.
- A 1-cent per pound of candy tax would generate $70 million per year.
- The proposed potato chip tax would generate $54 million per year.
- Proposed taxes on other snack foods, fats and oils would generate $190 million per year.[233]

ELIMINATING TAXES ON HEALTHY FOODS

In addition to looking at imposing a snack tax on unhealthy foods, the Mississippi Health Advocacy Program, has argued that states such as Mississippi, which have existing grocery taxes for all food items, should remove the tax on healthy foods.[234] Mississippi is currently one of 5 states that taxes foods purchased for home consumption. The group argues that eliminating the 7 percent sales tax on healthy foods, while maintaining the tax on junk foods would achieve 2 goals. First, it would make healthy foods -- which studies have shown are 10 times as expensive as unhealthy, high-calorie foods -- more affordable.[235] Second, by eliminating the tax only on healthy foods, the state of Mississippi would continue to receive revenues from the purchase of unhealthy foods. The main challenge facing legislators and policy makers who may want to consider this approach is how to define "healthy foods." The Mississippi Health Advocacy Program recommends convening a panel of nutritionists and dieticians to define healthy foods.

MENU LABELING

Menu labeling -- the posting of nutrition information on menus and menu boards -- is a policy that more states and localities are considering each year. Supporters of nutrition labeling at fast-food and chain restaurants, including the American Medical Association, want labeling that is easy to understand and which includes the total calories, fat, saturated fat, trans fat and sodium content of menu items.[236]

Seventeen states and Puerto Rico, as well as numerous local governments, introduced legislation either in 2007 or 2008 to require restaurants to post nutrition information alongside their menu items.[237,238] The states that considered menu labeling legislation include: Arizona, California, Connecticut, D.C. Hawaii, Illinois, Iowa, Kentucky, Maine, Massachusetts, Michigan, New Jersey, New Mexico, New York, Pennsylvania, Tennessee, Vermont and Washington.[239] In California, menu-labeling legislation passed both chambers of the state legislature but was vetoed by Gov. Arnold Schwarzenegger (R) on Oct. 14, 2007.[240] Supporters are considering reintroducing a menu-labeling bill in 2008. At the local level, Seattle, New York City and San Francisco have menu-labeling provisions in place; 5 other localities have legislation pending.[241]

Voluntary Efforts

Instead of mandated menu labeling, some states have chosen to focus on voluntary menu labeling programs. In Arizona, the Department of Health Services launched the Smart Choice Program after the legislature rejected a bill that would have required restaurants to post nutritional information on menus. Under the Smart Choice Program the state works with participating restaurants to evaluate and, if necessary, modify menu items to meet specific nutrition criteria. A main dish, for example, should have the following: A minimum of 2 servings of beans, whole grains, fruits, or vegetables; no more than 700 calories; no more than 30 percent of total calories from fat; no more than 15 percent of total calories from saturated fat; no more than 0.5 percent of trans fat; and no more than 1,500 milligrams of sodium.[242] To date, Subway, McDonald's, Outback Steakhouse, and Macayo's Mexican Kitchen have signed onto the program.

Critics of these voluntary programs highlight a number of problems. First, many restaurants choose not to participate in these programs. Second, the nutrition information is not easily accessible. Instead of posting the calorie and fat counts on the menu, most restaurants choose to print up brochures which may be hard to find, or they post the information on the Internet. While having the information available online is useful, it does not help the customer who is waiting to place an order in the restaurant. Finally, the nutrition information in these brochures can be difficult for the average consumer to use.[243]

LEGISLATION TO LIMIT OBESITY LIABILITY

Many states have responded to the obesity epidemic by passing laws that prevent individuals from suing restaurants, manufacturers, and marketers for contributing to unhealthy weight and related health problems. These laws that limit liability are fairly controversial, and have been prompted by fears of obesity lawsuits similar to tobacco lawsuits. However, they are one of the most visible obesity-related policies to emerge in recent years.

Twenty-four states have passed obesity liability laws: Arizona, Colorado, Florida, Georgia, Idaho, Illinois, Indiana, Louisiana, Kansas, Kentucky, Maine, Michigan, Missouri, New Hampshire, North Dakota, Ohio, Oregon, South Dakota, Texas, Tennessee, Utah, Washington, Wisconsin and Wyoming.

Proponents of these bills argue that the central issue is "common sense and personal responsibility."[244] Passage of these bill indicates a level of support for the view that obesity is an individual health issue. Supporters also endorse a 2004 White House statement that "food manufacturers and sellers should not be held liable for injury because of a person's consumption of legal, unadulterated food and a person's weight gain or obesity."[245]

Opponents of limited liability laws support the position that "it's impossible for consumers to exercise personal responsibility when businesses are concealing important information about their products," such as the number of calories in restaurant food or the lack of consistency in food labeling.[246]

LAND USE, URBAN PLANNING AND TRANSPORTATION POLICIES

Health officials and elected leaders are increasingly aware of the importance that communities have on the health of their residents. At the federal level, Senator Barack Obama (D-IL) and Representative Hilda Solis (D-CA) have introduced legislation that would require the CDC director to develop guidance for the assessment of potential health effects of land use, housing, and transportation policy and plans.[247] However, the bulk of this type of legislative action has been at the state and local level.

TFAH's *F as in Fat: How Obesity Policies Are Failing in America 2005* report included a state-by-state review of green space, brownfields, and sprawl initiatives (available online at www.healthyamericans.org).

Sprawl describes spread-out areas where homes may be isolated from schools, the workplace, and other frequent destinations. As a result, people "who live in these areas may find that driving is the most convenient way to get everything done, and they are less likely to have easy opportunities to walk, bicycle, or take transit as part of their daily routine."[248]

Green spaces describe open, undeveloped recreational spaces that are accessible to the public and maintained by the government. Green spaces provide communities with opportunities for recreation and physical activity by providing areas for walking, biking, and other sports.[249]

Brownfields are former commercial and industrial sites, many of which are abandoned or contaminated with hazardous substances or pollutants. Often, these locations provide no usable space for the surrounding area and remain as decaying eyesores, environmental health threats, and indicators of blight.

COMPLETE STREETS INITIATIVES

Physical inactivity, coupled with unhealthy eating habits, is a major driver of the current obesity epidemic. More than half of the U.S. adult population does not meet the recommended daily physical activity guidelines, while a quarter of U.S. adults report being completely inactive.[250] *(See Section 2: Fast Facts for recommended daily physical activity guidelines.)*

One major obstacle to physical activity is concern about safety. For example, the number of children walking to and from school has declined dramatically over the past 40 years, from 48 percent of students in 1969 to 16 percent of students in 2001.[251] Parents frequently list traffic safety concerns as a top reason that their children do not walk or bike to school.[252]

Governments and communities that address traffic safety concerns can promote healthier living. For instance, a 2003 study found that 43 percent of people with safe places to walk within 10 minutes of home met recommended activity levels; among those without safe places to walk just 27 percent met the recommendation.[253] An Australian study found that residents are 65 percent more likely to walk in a neighborhood with sidewalks.[254]

A review by the National Conference of State Legislatures identified 5 state policy options that are most effective at encouraging biking and walking:

1. Incorporating sidewalks and bike lanes into community design.
2. Providing funding for biking and walking in highway projects.
3. Establishing safe routes to school.
4. Fostering traffic-calming measures (e.g., any transportation design that is used to slow traffic).
5. Creating incentives for mixed-use development.[255]

The National Complete Streets Coalition is focusing on the first 2 policy options by working with state, county and city governments to incorporate features that promote regular walking, cycling and transit use into just about every street. To date, more than 75 states, counties, regional governments and cities have complete streets policies, according to the Coalition. A complete streets policy enables all users -- pedestrians, bicyclists, motorists, and bus riders of all ages and abilities -- to safely move along and across a complete street.

While the bulk of the 2-year old coalition's efforts have focused on state and local governments, the coalition has also pushed for federal action on the issue. In March 2008, Sens. Tom Harkin (D-IA) and Thomas Carper (D-DE) introduced the **Complete Streets Act** (S.2686). In May 2008, Rep. Doris Matsui (D-CA) introduced the Safe and Complete Streets Act of 2008 in the House (H.R. 5951). The bills ensure that "all users of the transportation system, including pedestrians, bicyclists, and transit users as well as children, older individuals, and individuals with disabilities, are able to travel safely and conveniently on streets and highways."[256]

Two members of the National Complete Streets Coalition are the National Center for Safe Routes to School and Smart Growth America. Safe Routes to School focuses specifically on encouraging and enabling more children to walk or bike to school, while Smart Growth America deals with issues related to community planning, including land use, mixed-use development, and open-space preservation.

BIKING AND WALKING TO SCHOOL

Fewer students walk or bike to school in the 21st century. According to a 2001 National Household Travel Survey, less than 16 percent of students between the ages of 5 and 15 walk or bike to school, compared with 48 percent in 1969.[257] Also, a recent study by CDC found that only 31 percent of students aged 5-15 who live within one mile of school walk or bike; in 1969, that percentage was close to 90.[258]

After introducing new safety policies and promotional activities in Marin County, California, the percentage of students walking to school increased by 64 percent in just two years.[259]

Several states have undertaken comprehensive campaigns to encourage more students to bike and walk to schools. For example:

The **Ohio Department of Transportation** launched a $4-million Safe Routes to School campaign in 2008 to enhance pedestrian safety. Part of the campaign will focus on infrastructure improvements, such as building and improving sidewalks, and behavior change campaigns to encourage children to bike or walk to school.[260]

The **Illinois Department of Transportation** awarded $8.3 million to support similar efforts. That money is part of the $23 million Illinois received in federal grants to improve pedestrian and bicycle safety projects across the state over the next 3 years (2008-2010).[261]

The **California Department of Transportation** has awarded $196 million to over 700 Safe Routes to School projects since the program's inception in 2000.[262] The latest round of grants will distribute $52 million to cities and counties for various street safety projects, such as improved lighting at crosswalks. In addition, the 2008 grant money will be used to promote walking and biking through educational programs.[263]

D. QUALITATIVE EVALUATION OF STATE OBESITY-RELATED LEGISLATION

As part of this year's report, TFAH partnered with the STOP Obesity Alliance and the George Washington University School of Public Health and Health Services' Department of Health Policy to conduct a qualitative review of state laws that are related to the prevention or treatment of obesity. The review focused on laws in 2 major domains: nutrition and physical activity standards in schools and insurance coverage for obesity-related treatments. Within these 2 major domains, the assessment measured laws against 4 factors:

- *Objective standards:* The extent to which state laws either adopt (or specify the adoption of) objective standards related to obesity prevention or treatment intervention.[264]
- *Statewideness:* Whether the standards that are adopted or contemplated in a state law are expected to be applicable on a statewide basis or whether local jurisdictions/entities are given the discretion to depart from such standards.
- *Enforcement mechanism:* Whether the law provides for some type of public enforcement mechanism (sanction, incentive, publication of results, private enforcement).
- *Data collection.* Whether the law requires states to collect data on the performance of affected public and private entities. (Covered entities may be local units of government, employers, or other public or private entities.)

The research team defined "objective standards" as federal or national standards that have achieved either:

- National recognition as a widely used or recommended standard, or
- Status as a formal legal standard.

1) PHYSICAL ACTIVITY AND NUTRITION STANDARDS IN SCHOOLS

All 50 states and D.C. mandate physical education in schools as part of the public school curriculum (although participation is not always mandatory). However, without enforcement mechanisms there is no way to make sure schools are following the rules. Likewise, 18 states currently have requirements for school meals that exceed the nutrition standards set by USDA. In this analysis researchers examined all state legislation relating to physical activity/education and nutrition in the schools of each state, and evaluated whether or not there is express enforceability language within that legislation.

Although all states have some form of legislation related to physical education and/or physical activity in schools, the majority do not have specific enforceability language. Thirteen states were found to have enforceability language. Of those states, 4 included sanctions or penalties within their language, and 10 included collection and reporting of information regarding performance language, with one state containing both types of language. Of the 18 states that have school meal requirements exceeding the USDA standards, only 7 have specific enforceability language, with only 2 including sanctions or penalties for noncompliance.

STATE PHYSICAL ACTIVITY AND NUTRITION LAWS

State	Physical Activity Laws Contain Express Enforceability Provision	Nutrition Laws Contain Express Enforceability Provision
Alabama		✓*
Alaska		
Arizona	✓*	
Arkansas	✓^	✓*
California	✓*	
Colorado		
Connecticut		✓*
Delaware	✓*	
DC		
Florida	✓*^	
Georgia		
Hawaii		
Idaho		
Illinois		
Indiana		
Iowa		
Kansas		
Kentucky	✓*	✓*^
Louisiana	✓*	
Maine		
Maryland		
Massachusetts		
Michigan		
Minnesota		
Mississippi		
Missouri		
Montana		
Nebraska		
Nevada		✓*
New Hampshire		
New Jersey		
New Mexico	✓^	
New York		
North Carolina	✓*	
North Dakota		
Ohio		
Oklahoma	✓^	
Oregon		✓*
Pennsylvania		
Rhode Island		
South Carolina	✓*	
South Dakota		
Tennessee		
Texas		✓^
Utah		
Vermont		
Virginia	✓*	
Washington	✓*	
West Virginia		
Wisconsin		
Wyoming		

*Please Note: Checkmarks in chart above followed by * indicate enforceability in the form of the collection of information regarding performance and checkmarks followed by a ^ indicate enforceability in the form of sanctions or penalties.*

2) INSURANCE BENEFITS FOR OBESITY-RELATED TREATMENT

Over the past 5 years, the insurance industry's view of obesity and obesity-related health problems has undergone a dramatic change.

When insurers first recognized obesity as a substantial health risk, procedures such as bariatric surgery became available within some private insurance plans.[265] However, even with evidence showing that nutritional counseling can help obese patients lose weight and that prevention and treatment of obesity work best when provided by a multidisciplinary team of health care workers, most insurance policies did not include coding for obesity counseling.[266,267] The failure to provide coding means that clinicians who want to offer obesity treatments and preventive services have no way of billing for these services. If health care workers are unable to be reimbursed for their services, they are highly unlikely to offer these obesity-related services to their patients.

In recent years, however, that has begun to change. In late 2004 Blue Cross and Blue Shield of North Carolina (BCBSNC) announced that it would begin offering coverage for obesity.[268] The coverage includes nutrition counseling, reimbursement for visits to the doctor, as well as access to 2 prescription weight-loss drugs.[269] BCBSNC also started including registered dieticians in its network of providers. All those covered by BCBSNC can receive up to 6 nutrition visits per year.[270] Highmark, which is a Pittsburgh-based insurance company, has also begun to reimburse pediatricians for obesity counseling.[271] The statistics to date show that obesity related visits have increased by 23 percent.[272]

Another change occurred in February 2006 when the Centers for Medicare and Medicaid Services (CMS) released its new policy that includes national coverage for bariatric surgery.[273] The new policy extends bariatric surgery to all Medicare recipients with a body mass index of 35 or higher with at least one co-morbidity related to obesity.[274]

Given the recent developments in insurance coverage of obesity-related treatments, researchers examined each state's coverage in 3 areas: Medicaid Early and Periodic Screening, Diagnostic, and Treatment (EPSDT), Medicaid adult obesity coverage and payment for eligible persons, and state insurance laws.

a) Medicaid Early and Periodic Screening, Diagnostic, and Treatment (EPSDT)

Medicaid requires participating states to cover Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefits for all eligible children under age 21, even if such services are not available under the state's Medicaid plan to the rest of the Medicaid population. EPSDT benefits include comprehensive periodic and as-needed assessments of children's health and development beginning at birth and continuing to age 21. The examinations encompass a wide range of procedures, including a developmental assessment, a nutritional assessment, and anticipatory guidance. For children identified with a physical, developmental, or mental health condition, states must arrange for all medically necessary treatments falling within federally covered service classes, even if such treatments or service classes are not available for individuals ages 21 and older.

In covering health treatments for children, states are expected to adhere to standards of medical necessity that reflect accepted pediatric standards of care.

In 2005 the American Medical Association, in collaboration with the Health Resources and Services Administration and CDC, convened an expert committee to provide updated practical guidance to practitioners on how to prevent, assess, and treat child and adolescent overweight and obesity.[275] The committee put forth guidance based on their appraisal of the literature and their collective clinical experience. These recommendations, published in December 2007, represent the consensus of experts based on the best available information at the time and have been well-received by the provider community.

State Medicaid EPSDT Coverage and Treatment Standards for Child Obesity		
State	**EPSDT reimbursement reflects evidence-based obesity treatment standards for nutritional assessment and counseling**	**EPSDT provider manual includes detailed treatment standards for child overweight and obesity**
Alabama	✓a*	–
Alaska	+	–
Arizona	+	–
Arkansas	✓a*	–
California	–	–
Colorado	–	–
Connecticut	✓b *	–
Delaware	✓a	✓1
DC	✓a†	✓1
Florida	✓a	✓2
Georgia	✓a	✓1
Hawaii	–	–
Idaho	✓b	–
Illinois	✓a	✓2
Indiana	+	–
Iowa	+	✓1
Kansas	+	✓1
Kentucky	+	–
Louisiana	✓b *	–
Maine	✓b *	–
Maryland	✓a	✓2
Massachusetts	✓a*	✓1
Michigan	–	–
Minnesota	✓b	–
Mississippi	✓b	–
Missouri	–	–
Montana	+	–
Nebraska	✓b *	–
Nevada	✓b *	–
New Hampshire	✓b *	–
New Jersey	–	–
New Mexico	+	–
New York	–	✓1
North Carolina	✓b *	–
North Dakota	✓b	–
Ohio	–	–
Oklahoma	+	–
Oregon	✓b	–
Pennsylvania	✓b	–
Rhode Island	✓b	–
South Carolina	✓b	–
South Dakota	–	–
Tennessee	✓a†	–
Texas	–	✓1
Utah	✓b *	–
Vermont	✓b	✓2
Virginia	✓b	–
Washington	+	–
West Virginia	✓b	–
Wisconsin	✓b *	–
Wyoming	✓b	✓1

Symbol	Rating
	Obesity Treatment Services
+	Strong evidence of reimbursement; Manual specifies the state will pay for nutritional assessment and counseling and CPT codes are listed to bill for these services
✓	Some evidence of reimbursement; Either manual specifies state will pay for nutritional assessment and counseling or CPT codes are listed to bill for these services
–	Manual does not specifically mention whether states will or will not pay for nutritional assessment and counseling and no CPT codes are listed to bill for these services

** Prior authorization required*

† Could not find fee schedule on state Medicaid website

P Services will be covered as part of prenatal care only

C Services will be considered only if comorbid conditions exist

L Services specifically limited (North Dakota limits patient to four dietitian visits per year and specifically excludes any weight loss or exercise programs)

1 EPSDT manual provides details on obesity assessment but not treatment

2 EPSDT manual provides details on obesity assessment and treatment

a Manual specifies the state will pay for nutritional assessment and counseling but CPT codes are not listed to bill for these services

b Manual does not specifically mention whether state will pay for nutritional assessment and counseling but CPT codes are listed to bill for these services

Based on each state's published Medicaid manuals and fee schedules, researchers found 10 states that failed to address nutritional assessment and counseling reimbursement at all in their published materials. In these states, neither the provider manual specifically mentioned whether Medicaid would pay for these services nor were CPT codes listed to bill for these services. In these states, it only can be assumed that these services are not likely to be reimbursed.

The majority of states (29 and D.C.) provided some but not conclusive evidence that they will reimburse for nutritional assessment and counseling. In general, these states either provided generalized and nonspecific guidance regarding treatment for childhood conditions without listing reimbursement levels for related billing codes or they provided billing codes without any specific language directing providers to use these codes for nutritional assessment and treatment in the treatment of obesity.

Researchers found that currently only 11 states provide strong evidence that they will reimburse for nutritional and behavioral therapy in children with overweight and obesity. These states not only provide guidance in their provider manuals and regulations for the coverage of these services but also provide reimbursement amounts in their fee schedules for related billing codes.

For those states that listed medical nutrition codes in their fee schedules, the reimbursement rate for a 15 minute individual assessment by a dietitian ranged from $9.91 to $32.21.

Twelve states require prior authorization for services that are not normally covered by Medicaid.

Four states set forth detailed treatment standards for childhood obesity in their EPSDT provider manuals. Nine states incorporated details on how to assess or screen for child obesity in their EPSDT manuals, but did not include guidelines on how to treat obesity. Some manuals included links to screening tools and guidelines and some states had child obesity treatment information available elsewhere on their website (i.e. public health departments) but not in their provider manuals.

b) Medicaid Adult Obesity Coverage

In 2004, the U.S. Department of Health and Human Services (HHS) removed language from the Medicare Coverage Issues Manual that stated obesity was not an illness.[276] This policy change opened the door for the treatment under federal health care programs of obesity as an illness or condition in its own right. The change also sets an important precedent for private insurers and employer-sponsored health benefit plans, because of Medicare's influence over health care financing policy generally.

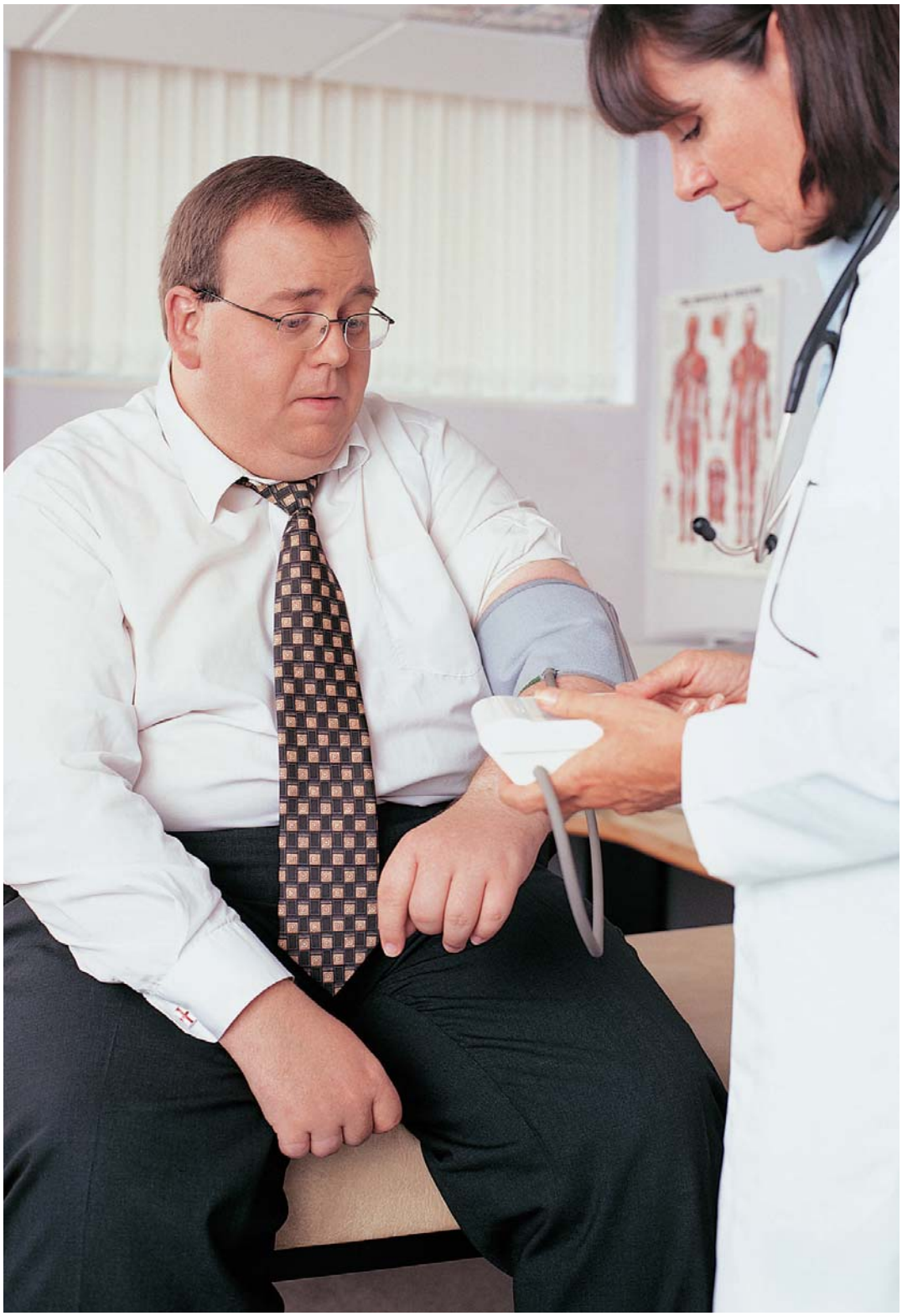
Medicaid is the largest of all public health benefit programs, covering over 58 million people in 2005.[277] Medicaid beneficiaries are low income or medically impoverished, and many Medicaid eligibility categories are, in contrast to private health insurance, designed to assure coverage for persons with serious and chronic health conditions. As a result, the prevalence of elevated health risks and serious illness is significantly higher among the Medicaid population.

State Medicaid programs have broad discretion over coverage and payment for services. Medicaid specifies certain broad service classes as required services; these include physician services, inpatient services, and services of federally qualified health centers and rural health clinics, and several other service classes. However, not all procedures within required services classes must be covered. Moreover, many service classes such as prescribed drugs, preventive services furnished by health professionals, and other relevant service classes are not required but remain optional with states. Most states cover most classes of optional services to at

least some degree. All states cover prescription drugs to an extensive degree.

The review of state Medicaid coverage and payment practices focused on 2 items:

- The depth of guidance provided by the provider manual (i.e. was treatment merely mentioned, or were specific treatment guidelines mentioned).
- The type of treatments covered and/or paid for (nutritional assessment/counseling, pharmacological therapy, and surgery).



State Medicaid Coverage and Treatment Standards: Adult Obesity (Age 21 And Older)

State	State provides specific guidance for treatment of obesity in adults	State covers and pays for nutritional assessment and consultation for treatment of obesity in adults	State covers and pays for drug therapy for the treatment of obesity in adults	State covers and pays for bariatric surgery for treatment of obesity in adults
Alabama	✓-	-	-	+1
Alaska	✓-	+a,P	-	+*
Arizona	✓-	+d	0	+
Arkansas	✓-	0	0	+*
California	✓-	-	0	+*
Colorado	✓-	-	+*	+2
Connecticut	✓-	-	0	+
Delaware	✓-	+b,*	+*	+*
D.C.	✓-	0†	0	+*
Florida	✓-	-	0	+3
Georgia	✓+	+	-	+*
Hawaii	✓-	-	0	+*
Idaho	✓-	+C	0	+4
Illinois	✓-	-	0	+5
Indiana	✓-	+d	+	+
Iowa	✓-	+d	+*	+*
Kansas	✓-	-	-	0†
Kentucky	X	+a	0	-
Louisiana	✓-	+d	+	+
Maine	✓-	+d	0	+*
Maryland	X	0	0	+*
Massachusetts	X	0	0	+6
Michigan	✓-	+d,P	0	+7
Minnesota	✓-	+a	+*	+*
Mississippi	✓-	+d	+*	-
Missouri	X	+d,C	0	+8
Montana	X	-	0	-9
Nebraska	✓-	-	0	+10
Nevada	✓-	+d	0	+11
New Hampshire	✓-	-	0	+12
New Jersey	✓-	-	0	0†
New Mexico	X	-	0	+*
New York	X	0	0	+13
North Carolina	✓-	+d	0	+*, 14
North Dakota	✓-	+a,L	0	+*
Ohio	✓-	-	-	+*
Oklahoma	✓-	+d	-	+15
Oregon	✓-	+a,P	0	+*
Pennsylvania	✓-	+d	0	+*
Rhode Island	✓-	+d	0	+*
South Carolina	✓-	+a,C	+*	+16
South Dakota	✓-	-	0	+17
Tennessee	X	-	0	+18
Texas	✓-	-	0	-
Utah	X	-	0	+*
Vermont	✓+19	+d	0	+*
Virginia	✓-	+a,P	+*	+*
Washington	✓-	+a,P	-	+
West Virginia	✓-	-	0	+*,20
Wisconsin	✓-	+a,L	+*	+*
Wyoming	✓-	-	-	+21

* *Prior authorization required*

† *Could not find fee schedule on state Medicaid website*

P *Services will be covered as part of prenatal care only*

C *Services will be considered only if comorbid conditions exist*

L *Services specifically limited (North Dakota limits patient to four dietitian visits per year and specifically excludes any weight loss or exercise programs)*

a *Manual specifies the state will pay for nutritional assessment and counseling and CPT codes are listed to bill for these services*

b *Manual specifies the state will pay for nutritional assessment and counseling but CPT codes are not listed to bill for these services*

d *Manual does not specifically mention whether state will pay for nutritional assessment and counseling but CPT codes are listed to bill for these services*

Symbol	Rating
	Obesity Guidance
✓+	Manual provides detailed guidance for treating adult obesity
X	Manual does not mention treating adult obesity
✓-	Manual provides no guidance for treating adult obesity
	Services
+	State covers and reimburses specified service
0	State does not mention specified services in manual
-	State specifically excludes coverage and reimbursement for specified service

1 Alabama will not cover Gastric Bypass for patients with a history of a previous Gastric Bypass procedure.

2 Colorado does not reimburse for CPT code 43845.

3 Florida and West Virginia will not reimburse for Bariatric Surgery unless there is an accompanying co-morbidity.

4 Idaho will only cover Gastric Bypass if the patient also has: alveolar hypoventilation, uncontrolled hypoventilation, uncontrolled diabetes, uncontrolled hypertension; also requires prior-authorization.

5 Illinois and Wyoming approve gastric bypass on a case-by-case basis.

6 Massachusetts will not cover CPT codes 43842, 43843, or 43845.

7 Michigan does not cover services for obesity alone; it will cover treatment of obesity when done for the purpose of controlling life-endangering co-morbidities.

8 Missouri will not cover SPT codes 43770, 43771, 43772, 43773, or 43774.

9 Montana has no CPT codes for obesity surgery in its fee schedule nor does it mention obesity in its provider manual.

10 Nebraska excludes Ileal bypass and intestinal surgery and will not cover other surgeries when the sole diagnosis is obesity.

11 Nevada excludes intestinal bypass and gastric balloon.

12 New Hampshire does not cover CPT codes 43645 or 43845.

13 New York does not cover CPT code 43845.

14 North Carolina does not cover investigational procedures including jejunoileal bypass, biliopancreatic bypass, gastric wrapping, gastric banding, jejunocolostomy, and mini-gastric bypass.

15 Oklahoma does not include CPT codes 43842 or 43843 in its fee schedule.

16 South Carolina will only cover surgery if a co-morbidity is present.

17 South Dakota does not cover CPT codes 43644, 43645, 43770, 43771, 43772, 43773, 43774, 43845, or 43848.

18 Coverage offered is available through TennCare, Tennessee's managed care program. It is unclear if this service is covered through traditional fee for service Medicaid.

19 Vermont does not include obesity treatment language in its provider manual. However, the state offers an extensive adult obesity toolkit at: http://healthvermont.gov/family/fit/documents/Promoting_Healthier_Weight_toolkit.pdf.

20 Florida and West Virginia will not reimburse for Bariatric Surgery unless there is an accompanying co-morbidity.

21 Illinois and Wyoming approve gastric bypass on a case-by-case basis.

Medicaid Manual References to Obesity Treatment in Adults

Specific guidelines were rarely referred to in the Medicaid provider manuals. Only 2 state manuals provided guideline references. Georgia referenced the Food Pyramid. While Vermont made no mention of obesity within its provider manual, it did offer an extensive toolkit for adult obesity on its website. Excluding the few states that made no mention of obesity (9 states), most provider manuals (40 states) referred to it only in regard to coverage issues, rather than diagnostic or treatment guidance. Nebraska and South Carolina explicitly state in their provider manuals that obesity is not an illness.

State Medicaid Coverage and Payment

All 50 states and D.C. explicitly cover at least one treatment category. Eight states (Delaware, Indiana, Iowa, Louisiana, Minnesota, South Carolina, Virginia, and Wisconsin) cover all 3 treatment categories.

Nutritional Assessment and Consultation

Twenty-six states explicitly cover nutritional assessment and consultation while 20 explicitly do not.

Drug Therapy

Drug therapy is the least frequently covered and discussed treatment category; only 10 states cover it while 33 make no mention of it within their provider manuals.

Bariatric Surgery

Bariatric surgery was the most frequently covered treatment (45 states); it is also the least likely to be explicitly not covered (2 states).

Many state Medicaid programs do not offer adults a full range of treatment options. The provider manuals suggest (and even outright state) that obesity is not an illness or disease in and of itself, suggesting that few states are yet following Medicare's lead. Treatment is often subject to many limitations and may not even be offered if a patient is not suffering from additional illnesses that are negatively impacted by obesity. What is most significant about these results is the large amount of silence exhibited by the states in regard to the 3 types of obesity treatment considered here.

c) State Insurance Laws

Privately insured persons are overwhelmingly insured in the group market, with only 5 percent of insured persons covered through non-group individual or family insurance, where medical underwriting is prevalent. Persons with obesity may be excluded from the individual market based on their obesity alone. Furthermore, insurers may use body mass index measurements (BMI) to classify certain persons as "unhealthy" or "uninsurable" as a result of their weight. In the absence of explicit state regulation, an insurer would be not only be free to use obesity or weight to impose exclusions and adjust rates, but also to define the terms "overweight" and "obese" at their discretion.

Additionally, unless a state expressly prohibits its use, "health status" can be an independent risk factor in medical underwriting. Because obesity is now deemed a medical condition by HHS, it can be argued that obesity falls within "health status" definitions, which vary from state to state.

This analysis examines 3 basic aspects of state insurance law:

- The extent to which states prohibit or regulate medical underwriting practices involving obesity or "health status" as an independent risk factor in the small group market.
- The extent to which states prohibit or regulate medical underwriting practices involving obesity or "health status" as an independent risk factor with regard to both eligibility and rate adjustments in the individual market.
- The extent to which state insurance laws address coverage of obesity related treatments.

State Health Insurance Law & Regulations

State	State prohibits or regulates medical underwriting or exclusions involving obesity or health status as an independent risk factor.			State requires coverage of one or more obesity related treatments.	
	Small Groups	Individual		Small Groups	Individual
		For Eligibility	For Rate Setting		
Alabama	0	0	0	0	0
Alaska	- 1	0	0	0	0
Arizona	- 2	0	0	0	0
Arkansas	- 3	0	0	0	0
California	- 4	- 5	- 6	0	0
Colorado	-7	0	0	0	0
Connecticut	+ 8	0	0	0	0
Delaware	-9	0	0	0	0
DC	0	0	0	0	0
Florida	-10	0	0	0	0
Georgia	0	0	0	(+)11	(+)12
Hawaii	0	0	0	0	0
Idaho	-13	0	-14	0	0
Illinois	- 15	0	0	0	- 16
Indiana	0	0	0	+ 17	0
Iowa	- 18	0	0	0	0
Kansas	0	0	0	0	0
Kentucky	- 19	0	- 20	0	0
Louisiana*	- 21	0	- 22	0	0
Maine	+ 23	+ 24	+ 25	0	0
Maryland	+ 26	0	0	+ 27	+ 28
Massachusetts	+ 29	+ 30	+31	0	0
Michigan	- 32	0	033	0	0
Minnesota	-34	0	- 35	0	0
Mississippi	-36	0	0	0	0
Missouri	- 37	0	0	0	0
Montana	- 38	0	0	0	0
Nebraska	- 39	0	0	0	0
Nevada	- 40	0	- 41	0	0
New Hampshire	- 42	0	0	+ 43	+ 44
New Jersey	+ 45	+ 46	+ 47	+ 48	+ 49
New Mexico	- 50	0	0	0	0
New York	+ 51	+ 52	+ 53	0	0
North Carolina	- 54	055	0	0	0
North Dakota	- 56	0	0	0	0
Ohio	- 57	0	0	0	0
Oklahoma	- 58	0	0	0	0
Oregon	+ 59	- 60	+ 61	0	0
Pennsylvania	0	0	0	0	0
Rhode Island	- 62	0	0	0	0
South Carolina	- 63	0	- 64	0	0
South Dakota	- 65	0	- 66	0	- 67
Tennessee	- 68	0	069	0	0
Texas	- 70	071	- 72	0	0
Utah	- 73	0	- 74	(-)75	(-)76
Vermont	+ 77	+ 78	+ 79	0	0
Virginia	- 80	0	0	+ 81	+ 82
Washington	+ 83	0	+ 84	0	0
West Virginia	- 85	0	0	0	0
Wisconsin	- 86	0	0	0	0
Wyoming	- 87	0	0	0	0

Symbol	Rating
Category 1: State prohibits or regulates medical underwriting or exclusions involving 'obesity' or 'health status' as an independent risk factor.	
(-)	The state has a statute that expressly allows for rate adjustments based on either health status or obesity in the small group market OR expressly allows health status or obesity to be used in determining eligibility or adjusting rates in the individual market.
(+)	The state has a statute that expressly prohibits adjustments in rates based on health status or obesity in the small group market OR prohibits the use of obesity or health status to determine eligibility or rates in the individual market.
(0)	The state is silent with regard to obesity or health status being used to determine rates in the small market OR eligibility or rates in the individual market.
Category 2: State requires coverage of one or more obesity related treatments.	
(-)	The state has a statute that expressly prohibits the coverage of obesity related treatment(s).
(+)	The state has a statute that expressly allows the coverage of obesity related treatment(s).
(0)	The state is silent on the issue of coverage for obesity related treatment(s).

1 AS 21.56.120

2 Arizona Code 20-2311

3 Arkansas Insurance Code §23-86-204

4 California Code §10716

5 BMI CA Insurance Code §10113.95 created a requirement for insurers of individual health insurance policies to file rating policies and underwriting guidelines with Dept. of Insurance (AB 356). The Dept. of Insurance summarized the information that companies filed in the questions and answers chart below: Will a health insurance company look at my height and weight when I apply for insurance? Yes. Insurance companies usually look at your height and weight when they decide to offer insurance. They may offer you insurance at a higher premium rate or refuse to insure you if you are overweight or obese. Some insurance companies use a measurement called the Body Mass Index (BMI) to decide. If your BMI is above 39, most insurance companies will not offer you insurance. If your BMI is 30-39, an insurance company may offer you insurance at a higher premium. If you have health problems because of your weight, such as diabetes or heart disease, an insurance company may refuse to insure you, even if your BMI is under 30.

6 BMI

7 Colorado Revised Statute §10-16-105

8 Adjusted Community Rating: Connecticut Insurance Code 38A-567 (No small employer carrier may inquire regarding health status or claims experience of the small employer or its employees or dependents prior to the quoting of a premium rate)

9 Delaware Code Title 18 §7202

10 Florida Code §627.6699(6)

11 GA Insurance Code 33-24-59.7 (Every health benefit policy that is delivered, issued, executed, or renewed in this state... on or after July 1, 1999, which provides major medical benefits may offer coverage for the treatment of morbid obesity.)

12 Ibid.

13 Idaho Code Title 41 Chapter 47 §41-4706

14 Idaho Code §41-5206 (see §41-5208 for limits on catastrophic insurance)

15 §215ILCS93/25

16 Illinois Insurance Code Title 50 Chapter 1 §2007.60(e)(17) (No individual policy shall limit or exclude coverage by type of illness, accident, treatment or medical condition, except as follows... "weight reduction procedures, treatment or classes, except for morbid obesity")

17 Indiana Insurance Code 27-8-14.1-4 (a group insurer "that issues an accident and sickness insurance policy shall offer coverage for nonexperimental, surgical treamtment by health care provider of morbid obesity"....some caveats listed in statute) §27-13-7-14.5 (same coverage for group HMO's)

18 Iowa Insurance Code §513B.4

19 Kentucky Insurance Code §304.17A-0952

20 Ibid.

21 Louisiana Insurance Code §22:228.2

22 Louisiana Insurance Code §22:228:6
*Louisiana Public Health Code RS40:1299.117 interestingly states that obesity is a disease if accompanied by one of eleven conditions/comorbidities.

23 Maine Insurance Code Title 24-A Chapter 35 §2808-B ('a carrier may not vary the premium rate due to gender, health status, claims experience, or policy duration of eligible group)

24 Maine Insurance Code §2736-C -medical underwriting is prohibited; Adjusted Community Rating for premiums -- cannot use health status to adjust

25 Ibid.

26 Maryland Insurance Code §15-1205 (community rating for small group insurance - "rating methodology ...without regard to health status")

27 Ibid.

28 Maryland Insurance Code §15-839 ("An entity subject to this section shall provide coverage for the surgical treatment of morbid obesity"...caveats listed)

29 Massachusetts Chapter 58 of the Code of 2006 (176J(4)(a)(3) & 176Q) (reform law prohibits excluding anyone on health status) (group insurance is community based rating with adjustments allowed for age, industry, group size, geography, family composition, participation rate, wellness program participation, and participation in the small employer reinsurance plan.)

30 176M- guaranteed issue and adjusted community rating for premiums

31 Ibid.

32 Michigan PA 88 of 2003: underwriting is permitted by health status with the exception of BCBS and HMOs which exclude health status underwriting. BCBS can only consider age and industry and HMOs can only consider age, industry, and group size.

33 Ibid.

34 Minnesota Code 62L.08

35 Minnesota Code 62A.65

36 Mississippi Code §83-63-7

37 Insurance Code §379.936

38 Montana Insurance Code §33-22-1809

39 Nebraska Code §44-5258

40 Nevada Code NRS 689C.210

41 Nevada Code NRS 689A.680

42 New Hampshire Insurance Code §404-G:5-d

43 New Hampshire Insurance Code RSA 415:18-t (coverage for the diseases and ailments caused by obesity and morbid obesity and treatment for such, including bariatric surgery"...with caveats) (SB312)

44 New Hampshire Insurance Code RSA 415:6-o (coverage for the diseases and ailments caused by obesity and morbid obesity and treatment for such, including bariatric surgery"...with caveats)

45 New Jersey Insurance Code NJSA 17B:27A-25 (modified community rating required for small group insurers)

46 New Jersey Insurance Code NJSA 17B:27A-4 (community rating required for individual insurers; guarantee issue)

47 Ibid.

48 New Jersey Insurance Code 17B:27-46.1h (provides for "annual consultation with a health care provider to discuss lifestyle behaviors that promote health and well-being including, but not limited to... nutrition and diet recommendations, exercise plans, lower back protection, weight control"

49 New Jersey Insurance Code 17B:27-2.1.h (provides for "annual consultation with a health care provider to discuss lifestyle behaviors that promote health and well-being including, but not limited to... nutrition and diet recommendations, exercise plans, lower back protection, weight control")

50 New Mexico Insurance Code §59A-23C-5

51 New York Insurance Code 11 NYCRR 360.4; 360.5 (prohibits medical underwriting; pure community rating)

52 Ibid.

53 Ibid.

54 NC Insurance Code §58-50-130

55 BCBS has some guaranteed issue policies but can charge high premiums

56 North Dakota Insurance Code §26.1-36.3-04

57 Ohio Insurance Code §3923.571

58 Oklahoma Title 36 Chapter 2 §6515

59 OAR 836-053-0065 (Bulletin prohibiting the use of health status to be used in underwriting in small group insurance policies) modified community rating

60 Oregon Insurance Code §743.766

61 Oregon Insurance Code §743.767(2) adjusted community rating

62 OFFICE OF THE HEALTH INSURANCE COMMISSIONER REGULATION 11 SMALL EMPLOYER HEALTH INSURANCE AVAILABILITY REGULATION Section 5

63 South Carolina Insurance Code SECTION 38-71-940

64 South Carolina Insurance Code Section 38-71-325

65 South Dakota Insurance Code §58-18B-3;

66 South Dakota Insurance Code §58-17-74 (expressly allows weight to be used as rating factor); SD Administrative Rules 20:06:39:03

67 South Dakota Administrative Regulations 20:06:39:29 (expressly allows exclusion for weight modification....obesity treatments..surgery..)

68 Tennessee Insurance Code §56-7-2209

69 Cover Tennessee Program allows obesity to be used as risk factor is assessing premiums §56-7-3013 (small group employers can buy into the program)

70 Texas Insurance Code §1501.205

71 Under Texas Administrative Code 28 Part 1 Chapter 11 subchapter H Rule 11.04(a) individual HMO's do not use health status as factor in underwriting policies.

72 Texas Insurance Code §544.155

73 Utah Insurance Code §31A-30-106

74 Utah R590-167-6

75 Utah Administrative Rules R590-233-4(w) (allows gastric bypass surgery to be excluded from group and individual heath insurance policies)

76 Ibid.

77 Vermont Insurance Code Title 8, Chapter 107, 4080a(h)(1) prohibits the use of medical underwriting in group policies.

78 Vermont Insurance Code Title 8, Chapter 107, 4080b(h)(1) prohibits the use of medical underwriting in individual policies; 4080d(1) guaranteed issue

79 Ibid.

80 Virginia Insurance Code §38-2-3433

81 Virginia 38-2-3418.13 allows for coverage of treatment for morbid obesity for group and individual policies.

82 Ibid.

83 Washington Insurance Code §48.44.035 (adjusted community rating)

84 RCW 48.44.022 -- health status prohibited from being used for adjustment of premium rates but does not determine eligibility for coverage or exlusions.

85 WV §33.16D5

86 Wisconsin §632.748; §932.05

87 Wyoming Insurance Code §26-19-304

Medical Underwriting or Exclusions

Essentially insurers have the liberty to use obesity or health status as a risk factor to deny coverage and exclude treatments, unless otherwise prohibited by state law. On the group market, 35 states expressly allow health status or obesity to be used as a factor for rate adjustments in the small group market. The majority used "health status" as an adjustment factor. Only 9 states prohibit the use of health status or obesity as a factor for rate adjustments in the small group market. These states used community or adjusted community rating.

Five states prohibit the use of health status or obesity as a factor to determine eligibility in the individual market. These states are Maine, Massachusetts, New Jersey, New York and Vermont. Meanwhile, 7 states prohibit the use of health status or obesity as a factor to determine rates in the individual market – Maine, Massachusetts, New Jersey, New York, Oregon, Vermont, and Washington.

For the individual market, 2 states expressly allow the use of health status or obesity as a factor to determine eligibility in the individual market -- Oregon (through mandatory use of standardized health form) and California (through mandatory filing of insurers' rates based on BMI). Ten states allow the use of health status or obesity as a factor to determine rates in the individual market. South Dakota is the only state to expressly state that "weight" can be used as a rating factor; the other 9 states allow "health status" to be used as a rating factor.

Mandated Coverage for One or More Obesity-Related Treatment

The vast majority of states do not mandate any coverage of obesity related treatments and the few that do cover only those treatments for morbid obesity as long as individuals adhere to the caveats imposed in the coverage requirement. Only 5 states provide for coverage of one or more treatments for obesity for both the small group and individual insurance markets: Georgia, Maryland, New Hampshire, New Jersey, and Virginia. Indiana provides for coverage of surgical treatment of morbid obesity for groups only, while Illinois and South Dakota expressly exclude coverage for obesity related treatments in the individual market only. Utah is the only state that expressly excludes gastric bypass surgery from coverage in both markets.

Although obesity itself is being treated more like a disease with drugs, surgery, and behavior therapy in various combinations, the health insurance system has still largely ignored the problem.

Federal Responsibilities and Policies

SECTION 4

There are a variety of initiatives to promote physical activity and healthy nutrition at the federal level. This section includes a discussion of federal obesity-related policies and legislation, including major bills that were up for reauthorization in 2008 or that are due to be considered in 2009.

A. Overhaul of the WIC Food Packages.

B. 2008 Farm Bill.

C. Reauthorization of the Child Nutrition Act.

D. Reauthorization of the No Child Left Behind Act.

E. Reauthorization of the State Children's Health Insurance Program (SCHIP).

F. Reauthorization of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

G. Other Obesity Related Legislation before Congress.

H. Funding for CDC Obesity Grants.

A. OVERHAUL OF THE WIC FOOD PACKAGES

In December 2007, USDA made significant changes to the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) adding fruits, vegetables, and whole grains to the list of grocery items covered. This was the program's first major overhaul since 1974.[278] A 2005 report by the IOM had called for similar action on the grounds that "the proposed changes to the WIC food packages hold potential for improving the nutrition and health of the nation's low-income pregnant women, new mothers, infants, and young children."[279] USDA based its recommendations on those in the 2005 IOM report.

Under the old regulations, WIC participants were able to purchase the following items:

- Iron-fortified infant formulas
- Milk
- Cereal (infant and adult)
- Juice
- Eggs
- Cheese
- Dried legumes or peanut butter
- Tuna
- Carrots

The new WIC list of approved foods contains all the old items plus:[280]

- Fruits (fresh, frozen, dried or canned)
- Vegetables (fresh, frozen, dried or canned)
- Whole wheat bread or other whole grains
- Soy-beverage & tofu
- Light tuna
- Salmon
- Sardines
- Mackerel
- Canned legumes
- Infant foods

The new food list incorporates a diverse group of foods in order to appeal to participants from various cultural backgrounds.[281]

According to the National WIC Association, these changes will not only impact the health of mothers and children enrolled in the program, but others in the community who shop at WIC-authorized grocery stores as these retail outlets will now be required to carry this variety of fresh, healthy food.[282]

The changes to WIC also include incentives to promote breastfeeding among low-

income women, who have lower rates of breastfeeding according to CDC.[283] Research indicates that formula-fed children have higher risks of ear and respiratory infections, obesity, diabetes, and cancer.[284] The WIC program aims to more vigorously promote and support breastfeeding by increasing the amount of fruit and vegetable vouchers women who breastfeed receive, while providing less formula to partially breastfed infants.

States have until Oct. 1, 2009, to implement the new WIC regulations, but many have moved to implement them ahead of the deadline.

B. 2008 FARM BILL

In June, the House and Senate both passed the Food, Conservation, and Energy Act of 2008 (P.L. 110-246). The legislation reauthorizes farm and nutrition programs for the next 5 years. It includes an additional $10.36 billion over current spending levels for nutrition programs. The president vetoed the bill, but the House and Senate overrode the veto. Below is a summary of some of the key nutrition provisions in the bill:

Food Stamps

- Renames the Food Stamp Program the "Supplemental Nutrition Assistance Program" (SNAP).
- Raises and indexes the standard deduction and increases the minimum monthly benefit for food stamp recipients.
- Indexes the asset limit to keep pace with inflation and excludes the value of retirement and education savings accounts from counting towards the asset limit.
- Requires the Secretary of Agriculture to carry out pilot projects to develop and test methods of using the SNAP to improve the dietary and health status of households eligible for or participating in the SNAP and to reduce overweight, obesity and associated co-morbidities in the United States; requires that the secretary not use more than $20 million in mandatory funding to carry out a point-of-purchase pilot program to encourage households participating in the SNAP to purchase fruits, vegetables or other healthy foods.

THE FOOD STAMP PROGRAM AND OBESITY

In FY 2007, the Food Stamp Program (FSP) -- now known as the Supplemental Nutrition Assistance Program (SNAP) -- served approximately 26.5 million people in an average month and cost about $33 billion.[285] While this is clearly an important public assistance program for many Americans, research data show that there may be a connection between the FSP and obesity. For example, a recent study funded by USDA found that low-income women who participate in the FSP are significantly more likely to be obese than low-income women who are not participants of the program.[286]

Obesity Differences Among Low-Income Food Stamp Recipients and Low-Income Non-Recipients

	WOMEN (Low-Income)	
	Food Stamp Recipients	**Non-Recipients**
Prevalence of Obesity (%)	27.8	19.0
	MEN (Low-Income)	
	Food Stamp Recipients	**Non-Recipients**
Prevalence of Obesity (%)	21.3	20.1

Source: USDA, September 2007.

USDA has been trying to address this problem. The agency is examining assistance programs, poverty, and other factors that may be contributing to disparities of higher levels of obesity in lower-income populations. Many studies have been funded by USDA to provide an overview of the relationship between FSP and obesity. "Obesity, Poverty, and Participation in Food Assistant Programs," publicly released in February of 2005, basically concludes that despite efforts at quality research, the effects of food assistance programs are still unknown.[287] A more recent USDA study, "The Effects of Food Stamps on Obesity," released in September of 2007, reports that even if food stamps caused all recipients to become obese (which the data do not support), FSP would only play a minor role in increasing the prevalence of obesity nationwide.[288]

A number of health advocacy organizations raise the issue that many food stamp beneficiaries have difficulty affording many healthier food options, since many healthier foods cost more than less healthy alternatives.[289] Nutrition advocates suggest that economic incentives be provided to increase fruit, vegetable and other healthy food consumption through the FSP.[290] Also, the 2007 study suggests that the FSP should be used as a tool to combat obesity by educating newly certified Food Stamp recipients about healthy eating habits and weight management.[291] The reauthorized Farm Bill contains a provision to develop and test pilot programs to focus on these 2 issues.

Seniors

- Reauthorizes the Commodity Supplemental Food Program, which provides nutritious food boxes primarily to low-income seniors.
- Provides $20.6 million in mandatory funding each year for the Senior Farmers' Market Nutrition Program, which provides seniors with vouchers to buy fresh produce at farmers' markets, roadside stands, and other community-supported programs.

Children

- Provides for a nationwide expansion of the Fresh Fruit and Vegetable Program, which provides free fresh fruits and vegetables to be served as snacks to schoolchildren; requires state agencies to reach out to schools with significant numbers of children eligible for free or reduced-price meals to inform them of their eligibility for the program; and authorizes mandatory funding of $40 million for the program in 2008, $65 million in 2009, $101 million in 2010, $150 million in 2011, and $150 million indexed for inflation in 2012.
- Requires the Secretary of Agriculture to carry out a nationally representative survey of the foods purchased by school authorities participating in the school lunch program and provides $3 million to carry out the survey.
- Directs the Secretary to purchase fresh fruits and vegetables to be served for lunch in schools and service institutions and provides $50 million a year for the acquisitions.

Communities

- Provides $5 million of mandatory funding each year for Community Food Projects, which are community-based projects that require a one-time contribution of federal assistance to become self-sustaining and are designed to meet the food needs of low-income individuals and to increase the self-reliance of communities in providing for food needs.
- Creates the Healthy Urban Food Enterprise Development Center to increase access to healthy, affordable foods, including locally produced agricultural products, to underserved communities, and provides mandatory funding of $1 million per year for the Center.
- Increases funding by $1.256 billion for the Emergency Food Assistance Program, which provides commodities to help stock food banks.
- Devotes additional mandatory funding to the Farmers' Market Promotion Program (FMPP), which provides grants to help promote farmers' markets, roadside stands and other direct producer-to-consumer marketing opportunities, and stipulates that some of the funding for the FMPP must be used to support the use of electronic benefits transfers for federal nutrition programs at farmers' markets.

C. REAUTHORIZATION OF THE CHILD NUTRITION AND SPECIAL SUPPLEMENTAL NUTRITION PROGRAM FOR WOMEN, INFANTS, AND CHILDREN (WIC) ACT

The School Lunch and Breakfast Programs and Special Supplemental Nutrition Program for WIC will be up for reauthorization in 2009. The legislation covers virtually all federal child nutrition and special supplemental nutrition programs, including the following:

- National School Lunch Program.
- National School Breakfast Program.
- Summer Food Service Program.
- Child and Adult Care Food Program.
- WIC Program.

These programs are administered by USDA's Food and Nutrition Service in coordination with state education, health, social service, and agriculture agencies. There are 3 main goals of these federal child nutrition programs: 1) improve children's nutrition, 2) increase lower-income children's access to nutritious meals and snacks, and 3) help support the agricultural economy.[292]

An estimated 39 million children and 2 million lower-income pregnant/postpartum women are served by these programs.[293]

A number of dietary factors are contributing to increased levels of childhood and adult obesity in America, ranging from higher caloric density of foods to limited access to nutritious fresh foods in many areas to outdated nutrition standards for foods sold at schools. Currently, the typical American diet does not include enough fruits and vegetables.

- Only one in 5 Americans consumes the recommended amount of fruit each day.[294]
- Children under the age of 18 generally consume 50 percent or less of the recommended levels of fruits and vegetables.[295]

Consumer and industry economics also contribute to the country's obesity problem.

- Low-income families consume fewer fruits and vegetables than higher-income families.[296]
- People in low-income areas often pay more for nutritious foods such as fresh fruits and vegetables.[297,298]
- The costs of fruits and vegetables have increased 40 percent since 1985, while the costs of fats and sugars have declined.[299,300]

There are a number of nutrition provisions associated with the reauthorization of federal programs. Advocates argue that these can be an important vehicle to improve federal child nutrition programs and help combat the obesity epidemic.

A 2006 report by the Congressional Research Service highlighted some key nutrition provisions authorized under the 2004 version of the Child Nutrition and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Act (P.L. 108-265).[301] They include:

- Requiring local education agencies (i.e. school districts) which participate in school meal programs to establish school wellness policies that include goals for nutrition education and physical activity, nutrition guidelines for foods available during the school day, and a plan to measure implementation.
- Authorizing grants to states to implement TeamNutrition Networks that support nutrition education through the promotion of active lifestyles, pilot projects, data gathering, and other activities. The Act authorized grants to entities with expertise in health education programs for individuals with limited English proficiency to enhance obesity prevention; authorized technical assistance and grants to improve the quality of school meals; and authorized grants to local educational agencies to create healthy school environments.
- Making permanent the fresh fruit and vegetable snack program in schools.
- Increasing the limit on the federal share of benefits from $20 to $30 per participant per year for the WIC Farmers' Market Nutrition Program, which provides vouchers to WIC recipients to purchase fruit and vegetables at farmers' markets. It also enabled states to expand the definition of "farmers' markets" to include road side stands.
- Authorizing funding for USDA to encourage schools to purchase locally produced foods. It also authorized USDA to provide competitive matching grants and technical assistance for projects that improve access to local foods through farm-to-cafeteria activities, procurement from small and medium-sized farms, support for garden programs, and farm-based nutrition education projects.

D. REAUTHORIZATION OF NO CHILD LEFT BEHIND

The Elementary and Secondary Education Act, widely known as the No Child Left Behind Act (NCLB), was due for reauthorization in 2007, but Congress still has not reauthorized it. Parts of the legislation could influence how physical education and physical activity are included within the school day.

According to the National Coalition for Promoting Physical Activity (NCPPA), studies demonstrate that physical education and physical activity programs have positive effects on students' academic achievement, including increased concentration, improved mathematics, reading, and writing test scores, and also reduced disruptive behavior.[302] *(See Section 3: State Responsibilities and Policies for a further discussion of physical activity and academic performance.)*

One of the major pieces of legislation addressing physical activity in schools, that may be offered as an amendment to NCLB, is the **Fitness Integrated with Teaching (FIT) Kids Act of 2007 (S. 2173/H.R. 3257)**. The legislation was introduced by Senator Tom Harkin (D-IA) and Representatives Ron Kind (D-WI), Zach Wamp (R-TN) and Jay Inslee (D-WA), and includes reforms that could be included in the reauthorization of NCLB. Specifically, the FIT Kids Act would: require state and local educational agency report cards to include information on school health and physical education programs; include the promotion of active lifestyles in educational grant programs; support professional development for teachers and principals to promote healthy habits and participation in physical activity; and fund a study by the National Academy of Sciences to assess the impact of health and physical activity on student achievement and find ways to make and measure improvements to health and physical education in schools.

E. REAUTHORIZATION OF THE STATE CHILDREN'S HEALTH INSURANCE PROGRAM (SCHIP) ACT

The State Children's Health Insurance Program (SCHIP) is designed to help states insure more low-income children who are not eligible for Medicaid. The program was up for reauthorization in 2007, but Congress and the president could not reach agreement on a long-term reauthorization. As a result, the president signed a short-term extension of the program, until March of 2009. When the program is revisited, Congress may again consider taking steps to further address the childhood obesity crisis by including a health insurance-style benefit for obesity-related services to children enrolled in the program.

Most private insurance plans do not provide coverage for obesity-related services; thus, these benefits may not be part of the "benchmark" plans from which SCHIP coverage is developed. In order to more effectively address rising childhood obesity rates, basic anti-obesity benefits could be provided for SCHIP beneficiaries. There is precedent for this sort of coverage as Medicare covers medical nutrition therapy for beneficiaries with diabetes or renal disease. But the Medicare benefit, which is aimed at adults familiar with medical advice, counseling, and treatment, may not be adequate for children covered by SCHIP. *(See Section 3: State Responsibilities and Policies for a more detailed analysis of obesity-related insurance coverage.)*

F. REAUTHORIZATION OF THE SAFE, ACCOUNTABLE, FLEXIBLE, EFFICIENT TRANSPORTATION EQUITY ACT: A LEGACY FOR USERS (SAFETEA-LU)

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) will be reauthorized in 2009. The legislation has been an important vehicle to improve federal programs that support active transportation (travel by bike, foot, or other non-motorized means), safe streets, and public transportation. Researchers partially attribute the decline in physical activity to how we commute to and from work. Therefore, a coalition of smart growth activists and physical activity proponents are looking at ways to use federal transportation programs to boost physical activity and help combat the obesity epidemic.

This coalition of advocates point to the following facts:

- Non-leisure time physical activity has decreased substantially in the past 20 to 30 years due to increasing mechanization at work and in the home.[303] "Non-leisure time physical activity" is defined as energy spent in a normal day outside of sports, exercise and recreation. This includes manual labor on the job, walking and biking to work, and household chores.[304]
- A majority of U.S. adults (20-74 years old) walk less than 2 to 3 hours per week and accumulate less than 5,000 steps per day.[305] U.S. physical activity guidelines call for adults to walk 10,000 steps daily.
- The automobile has significantly reduced physical activity by its frequent use for short trips for shopping, going to the cleaners, and other errands, and taking children to school.[306] In fact, a national survey found that bike lanes were available for less than 5 percent of bicycle trips, and more than one-quarter of pedestrian trips take place on roads with neither sidewalks nor shoulders.[307]

G. OTHER OBESITY RELATED LEGISLATION BEFORE CONGRESS

LEGISLATION	SPONSORS
Nutrition & Physical Activity	
Federal Obesity Prevention Act of 2008, S. 3321 This bill would amend the Public Health Service Act to provide coordinated leadership in Federal efforts to prevent and reduce overweight and obesity and to promote sound health and nutrition among Americans, and for other purposes. The legislation requires the secretary of HHS to establish a Federal Task Force on Obesity to: (1) establish a government-wide strategy for preventing and reducing overweight and obesity that includes defining clear roles, responsibilities, and accountability for all agencies of the Federal Government; (2) coordinate effective interagency coordination and priorities for action among Federal agencies, including short-term and long-term goals for childhood and adult obesity rates; and (3) implement and evaluate the effectiveness of such strategy.	Sen. Tom Harkin (D-IA) Sen. Christopher Dodd (D-CT) Sen. Jeff Bingaman (D-NM) Sen. Edward Kennedy (D-MA) Sen. Barbara Mikulski (D-MD)
Healthy Lifestyles and Prevention America Act, S. 1342/H.R. 2633 This comprehensive legislation requires the secretary of HHS to convene a task force on childhood obesity; allows a wellness program credit for employers; requires certain restaurants and vending machines to provide nutritional information about each food offered; provides for the development of a tool to measure community barriers to participating in physical activity and provides for grants to plan model communities of play; and provides for healthy school nutrition environment incentive grants.	Sen. Tom Harkin (D-IA) Rep. Tom Udall (D-NM)

LEGISLATION	SPONSORS
Nutrition & Physical Activity	
Improved Nutrition and Physical Activity Act (IMPACT), H.R. 2677 The bill "encourages cross-sector collaborations for improving the health of young people and ensures that community partnerships approach youth health comprehensively by addressing physical activity, nutrition and emotional wellness."[308] The bill would allow states to use preventive health and health services block grants for activities and community education programs designed to address and prevent obesity and eating disorders.[309] It also requires the secretary of HHS to report to Congress on: (1) the causes and health implications of being overweight, obese, or having an eating disorder; and (2) the effectiveness of campaigns to change children's behaviors and reduce obesity.	Rep. Mary Bono Mack (R-CA) Rep. Nita Lowey (D-NY)
Menu Education and Labeling (MEAL) Act, S. 2784/H.R. 3895 The MEAL Act would amend the Federal Food, Drug and Cosmetic Act to require restaurants that are a part of a chain with 20 or more locations to post calorie and other nutritional information adjacent to each food item on the menu.[310]	Sen. Tom Harkin (D-IA) Rep. Rosa DeLauro (D-CT)
Physical Activities Guidelines for Americans Act, S. 2748/H.R. 5639 Requires the HHS to prepare and promote physical activity guidelines based on the latest scientific evidence, similar to the federal nutritional guidelines, commonly known as the Food Pyramid, which are updated every 5 years.	Sen. Tom Harkin (D-IA) Sen. Sam Brownback (R-KS) Rep. Mark Udall (D-CO) Rep. Zach Wamp (R-TN)
School Nutrition & Physical Education	
21st Century Community Learning Centers Act of 2007, S. 1557 This is a bill aimed at improving 21st Century Community Learning Centers. The bill identifies after-school programs as effective venues for improving nutrition, nutrition education, and physical activity at a time when just 20 percent of youth in grades 9 through 12 consume the recommended daily servings of fruits and vegetables. It amends existing language (in B of title IV of the Elementary and Secondary Education Act of 1965 - 21 CCLC) to include the provision of service learning and nutrition education, and strikes current language on recreational activities and includes in its place, language on the provision of physical fitness and wellness programs.	Sen. Chris Dodd (D-CT) Sen. John Ensign (R-NV)
Back to School: Improving Standards for Nutrition and Physical Education in Schools Act of 2007, S. 2066 The bill codifies IOM nutrition standards into law for competitive foods and beverages sold in schools, and requires IOM to update the nutrition standard every 5 years. Additionally, schools receiving federal funding must meet standards for physical activity issued by the secretary of Education, based on standards recommended by the National Association for Sport and Physical Education.	Sen. Barack Obama (D-IL)
Child Nutrition Promotion and School Lunch Protection Act, S. 771/H.R. 1363 The bill requires the USDA to update nutritional standards for foods sold outside of school lunch meals so they meet current nutrition science guidelines. The bill also expands the time and place rule, allowing the secretary of Agriculture to have authority over all food and beverages sold on the school campus during the school day.	Sen. Tom Harkin (D-IA) Sen. Lisa Murkowski (R-AK) Rep. Lynn Woolsey (D-CA) Rep. Chris Shays (R-CT)
Fitness Integrated with Teaching ("FIT") Kids Act, S. 2173/H.R. 3257 This legislation would amend the Elementary and Secondary Education Act of 1965 to encourage schools to provide regular physical education and activity. It requires annual state and local educational agency report cards to include information on school health and physical education programs and revises the professional development program for teachers and principals to include training for physical and health education teachers, and training on improving students' health habits and participation in physical activities.	Sen. Tom Harkin (D-IA) Rep. Ron Kind (D-WI) Rep. Zach Wamp (R-TN)
Healthy Students Act of 2007, S. 100 The bill amends the Richard B. Russell National School Lunch Act to require the director of CDC to establish a commission to improve school meals, composed of nutrition and children's health experts tasked with developing new nutritional standards for the School Lunch, Summer Food Service, Child and Adult Care Food, and School Breakfast programs. Requires such standards to ban foods of minimal nutritional value.	Sen. Barbara Boxer (D-CA)

LEGISLATION	SPONSORS
School Nutrition & Physical Education	
Nutrition Title of the EAT Healthy America Act, H.R. 1600 The bill would expand the fresh fruit and vegetable program to serve students in more schools and instruct the secretary of Agriculture to ensure that allocation of food and food ingredients offered in school nutrition programs are based on the most recent Dietary Guidelines for Americans.	Rep. Dennis Cardoza (D-CA) Rep. Adam Putnam (R-FL)
Strengthening Physical Education Act of 2007, H.R. 1224 The bill would make physical education part of No Child Left Behind's core curriculum. The bill requires physical education assessments to begin by the 2009-2010 school year, including measurement of students' proficiency at least one time during: (1) grades 3 through 6; (2) grades 6 through 9; and (3) grades 10 through 12.	Rep. Zach Wamp (R-TN) Rep. Ron Kind (D-WI)
Healthy Workforce	
Healthy Workforce Act, S. 1753/H.R. 3717 The bill amends the Internal Revenue Code to allow employers a 50 percent tax credit for the costs of providing employees with a qualified wellness program. Defines "qualified wellness program" as a program that is certified by the secretary of HHS and that consists of a health awareness and education component, a behavioral change component, and a supportive environment component. Terminates such credit after 2017. Requires the secretary of the Treasury to institute an outreach program to inform businesses about the availability of such wellness program tax credit.	Sen. Tom Harkin (D-IA) Sen. Gordon Smith (R-OR) Rep. Tom Udall (D-NM) Rep. Mary Bono Mack (R-CA)
Workforce Health Improvement Program Act, S. 1038/H.R. 1748 The bill excludes from the gross income of employees the value of any on-premises employer-provided athletic facility and fees, dues, or membership expenses paid to an athletic or fitness facility by an employer. The value cannot exceed $900 per employee per year. It also allows employers a tax deduction for fees, dues, or membership expenses paid to an athletic or fitness facility.	Sen. John Cornyn (R-TX) Sen. Tom Harkin (D-IA) Rep. Zach Wamp (R-TN) Rep. Mark Udall (D-CO)
Built Environment	
Complete Streets Act, S. 2686/ H.R. 5951 The bill ensures that "all users of the transportation system, including pedestrians, bicyclists, and transit users as well as children, older individuals, and individuals with disabilities, are able to travel safely and conveniently on streets and highways."[311]	Sen. Tom Harkin (D-IA) Rep. Doris Matsui (D-CA)
Healthy Places Act, S. 1067/H.R. 398 The bill requires Federal agencies to support health impact assessments and take other actions to improve health and the environmental quality of communities. The health impact assessments will include consideration of the potential health effects of land use, housing, and transportation policy and plans, including-: (a) background on international efforts to bridge urban planning and public health institutions and disciplines, including a review of health impact assessment best practices internationally; (b) evidence-based causal pathways that link urban planning, transportation, and housing policy and objectives to human health objectives; (c) data resources and quantitative and qualitative forecasting methods to evaluate both the status of health determinants and health effects; and (d) best practices for inclusive public involvement in planning decision-making. The bill also requires grants to institutions to conduct and coordinate research on the built environment and connection to health outcomes.	Sen. Barack Obama (D-IL) Rep. Hilda Solis (D-CA)
Play Every Day Act, S. 651/H.R. 2045 This bill requires the secretary of HHS to develop the Community Play Index to measure the policy, program, or environmental barriers in communities to participating in physical activity. The bill also requires the secretary to award grants to state health departments for work in partnership with community-based coalitions to plan and implement model communities of play.	Sen. Tom Harkin (D-IA) Rep. Mark Udall (D-CO) Rep. Kay Granger (R-TX)
Financial Incentives	
Personal Health Investment Today Act, H.R. 245 The bill amends the Internal Revenue Code to treat up to $1,000 of amounts paid annually for exercise equipment and physical exercise programs as tax deductible medical expenses.	Rep. Jerry Weller (R-IL)

H. FUNDING FOR CDC OBESITY GRANTS

The proposed budget from the administration for FY 2009 flat-funds or cuts a number of cooperative agreement grant programs that focus on obesity prevention and health promotion at CDC, including the Division of Nutrition, Physical Activity, and Obesity, the Division of Adolescent and School Health, and the Division of Adult and Community Health.[312]

- **Division of Nutrition, Physical Activity, and Obesity (DNPAO):** Through its Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases, the DNPAO funds programs that use various nutrition and physical activity intervention strategies to address obesity and other chronic diseases.[313] States that are awarded DNPAO grants are required to create, implement and monitor a nutrition, physical activity and obesity state plan; monitor the prevalence of overweight, obesity, nutrition quality and physical activity levels; and monitor the impact of their program in changing overweight and obesity related behaviors, including evaluating progress and effectiveness of their annual work plan. **Under the new 5-year grant cycle that began in June 2008, 23 states received funding, 5 fewer than the previous grant cycle.**

- **Division of Adolescent and School Health (DASH):** As part of its mission to prevent the most serious health risk behaviors among children, adolescents and young adults, DASH currently provides funding for state and territorial education agencies and tribal governments to help school districts and schools implement a Coordinated School Health Program (CSHP), and, through this approach, increase effectiveness of policies, programs, and practices to promote physical activity, nutrition, and tobacco-use prevention (PANT) among students.[314] School health programs encompass health and physical education, school meals, health services, and healthy school environments. **The Coordinated School Health Program is currently available to only 22 states and one tribal government due to limited funds. Twenty states, the District of Columbia, 4 tribes and 3 territories were approved but unfunded in the latest grant cycle, beginning on March 1, 2008.**

- **Division of Adult and Community Health (DACH):** DACH is charged with providing crosscutting chronic disease and health promotion expertise and support to CDC's National Center for Chronic Disease Prevention and Health Promotion. It oversees 2 crucial programs in the fight to prevent and treat obesity: the Steps Program and the Pioneering Healthier Communities program.

  - **The Steps Program** funds communities across the country to show how local initiatives can reduce the burden of chronic diseases such as obesity, diabetes, and asthma by encouraging people to be more physically active, eat a healthy diet, and not use tobacco.[315] Steps programs have demonstrated progress in reducing obesity in community-based interventions; reducing chronic disease risk factors and health care costs in workplaces; creating healthier school environments including the provision of nutritious foods and physical activity enhancements; and reducing A1c levels among diabetes patients. **The Administration has proposed cutting the Steps program by $9.6 million in FY 2009, which represents a 60% reduction for the program over the last 2 years.**

  - **The Pioneering Healthier Communities** program, a partnership with CDC and the YMCA of the USA, addresses physical inactivity, poor nutrition, obesity and related chronic diseases in communities across our nation. Pioneering Healthier Communities convenes action teams of community leaders that assess local

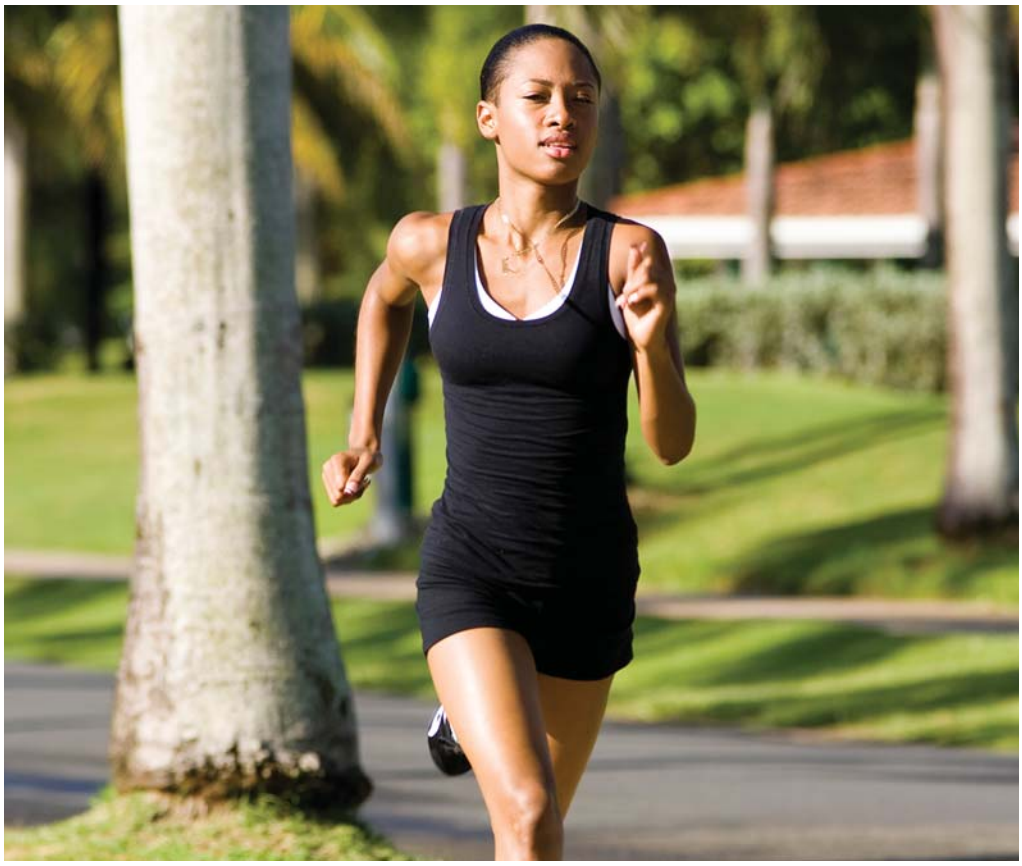
needs and determine a local strategy for changes in schools, worksites, food distribution, the built environment, and the community environment. CDC provides limited funds to support community planning and implementation; consultation is provided throughout the planning and implementation of local plans. Pioneering Healthier Communities impacts 20 new communities each year; over 60 communities have been reached since FY 2005. **The Administration has proposed zeroing out the Pioneering Healthier Communities program in FY 2009.**

FY 2009 Presidential Appropriations Request for CDC Programs and Divisions[316]

Division/Program	FY 2008	President's FY 2009 Proposal	Difference in Funding (FY09-FY08)
Division of Nutrition, Physical Activity and Obesity (DNPAO)	$42,191,000	$42,018,000	-$173,000
Division of Adolescent School Health	$54,323,000*	$53,612,000*	-$711,000
Steps to a Healthier U.S.	$25,158,000	$15,541,000	-$9,617,000
Pioneering Healthier Communities	$2,900,000	$0	-$2,900,000

Source: CDC Financial Management Office

**Note: This includes funds for HIV programs. DASH's Coordinated School Health Program, which deals specifically with nutrition and physical activity, was funded at $13,609,000 in FY 2008. The President's FY 2009 budget proposal recommended $13,553,000 for the program.*



SECTION 5

A National Strategy To Combat Obesity

INTRODUCTION

> "Although the general public has become increasingly aware of the personal health consequences of obesity, what may not yet be generally apparent is the public health nature of the obesity epidemic and the consequent need for population-based approaches to address it.[317]"
>
> — The Institute of Medicine (IOM)

Obesity is a genuine health crisis in this country. With approximately 23 million children overweight or obese, this could be the first generation to lead sicker, shorter lives than their parents. In the past 2 decades, adult obesity rates have climbed from 15 percent to 30 percent.[318] Now, two-thirds of adults are obese or overweight.

Individuals are suffering major health consequences, and it is costing the economy billions of dollars in health care and lost productivity. We are failing America's children by allowing them to develop health problems like type 2 diabetes and heart disease that will harm them for their entire lives. As a nation, we cannot have a healthy economy if we do not have a healthy workforce. As jobs go overseas to countries with cheaper health care, the obesity epidemic is threatening our ability to compete in the global economy.

The question is what can we do about it?

It is not the role of government to regulate how people eat or how much they should exercise.

It is the role of government to remove the obstacles that get in the way of individuals making healthy choices.

It is important to challenge Americans to take responsibility to be as healthy as they can be.

Millions of Americans have been trying to take personal responsibility. As a nation, we spend more than $35 billion a year on weight-loss products and services. Yet, many Americans report that they struggle with paying the higher costs of nutritious foods and the stresses of working and taking care of their households and families, which leave little time for preparing healthy meals and physical activity.

Clearly a strategy of personal responsibility alone is not working. People do not make health-related or lifestyle decisions in vacuums.

Many of the forces that have contributed to our national weight gain are deeply ingrained in our culture, such as an increase in prepared foods and eating in restaurants, and the greater distances people have between home, work, schools, and shopping areas that lead to an increased need for cars and motorized transportation to get around.

Change will not be easy. It is the role and responsibility of government, businesses, and communities to help individuals deal with the forces that are beyond their control. In fact, communities across the country have started taking action to try to address the crisis. Many states are improving the quality of school lunches; some state and local governments are increasing safe and clean parks; and farmers markets are opening in some low-income communities. But this is only a start.

For significant change to happen, combating obesity must become a national priority. The country's health and economic well-being require that we take action. Our leaders need to take the obesity problem seriously and make a real commitment to helping the country become healthier.

Over the past 8 years IOM, HHS and the Surgeon General's Office have all issued reports on the obesity epidemic in the United States.[319,320,321,322] The reports have set goals and objectives and included recommendations for federal, state, and local government, community groups, businesses, schools, families, and individuals to help meet them. Despite these high-level calls to action, there is little evidence of any national framework to respond to the obesity epidemic.

TFAH calls on the country's leaders to create a ***National Strategy to Combat Obesity***. This needs to be a comprehensive, realistic plan that involves every agency of the federal government, state and local governments, businesses, communities, schools, families, and individuals. It must outline clear roles and responsibilities and demand accountability. Our leaders should challenge the entire nation to take responsibility and do their part to help improve our nation's health.

As a primary goal, the ***National Strategy to Combat Obesity*** should aim to reduce the childhood obesity epidemic by 2015.

A turnaround will not happen overnight. The same way research has shown we cannot realistically expect people to individually lose significant amounts of weight in a short period of time and sustain that weight loss, we must avoid approaching the national strategy as if it were the policy equivalent of a fad diet. This is about finding ways to improve the health of the country for the long term.

The good news is that even small changes can make a big impact.

- For individuals, a 5 to 10 percent reduction in total weight can lead to positive health benefits, such as reducing the risk for type 2 diabetes.[323] Individual goals should focus on research-based solutions, which show health benefits from increasing physical activity and improving the nutritional value of the foods we eat. Weight-loss goals should focus on realistic, incremental changes and support strategies for helping sustain lifestyle changes.
- An increase in physical activity, even without any accompanying weight loss, can mean significant health improvements for many individuals. A physically active lifestyle plays an important role in preventing many chronic diseases, including coronary heart disease, hypertension, and type 2 diabetes.[324,325,326,327]
- For the country, community efforts to reduce obesity and increase physical activity can have a significant health and monetary return on investment.

A ***National Strategy to Combat Obesity*** must include:

A. Federal government, involving presidential and Congressional leadership, every Cabinet department, adequate funding, and clear performance measures.

B. State government.

C. Local government.

D. Community and faith-based organizations.

E. Schools.

F. Families and individuals.

G. Employers.

H. Insurers.

I. Food and beverage industries.

J. Agribusiness and farmers.

K. Health researchers and evaluators.

TFAH has also identified some special topics (Section L) that must receive increased attention as part of a National Strategy, including racial and ethnic disparities, rural childhood obesity, and mental health, stress and obesity.

The components of the ***National Strategy to Combat Obesity*** are based on the evidence cited throughout this report.

GETTING STARTED

> "SUCCESS "MAY TAKE SEVERAL YEARS OR DECADES AND REQUIRE THE SUSTAINED AND COORDINATED IMPLEMENTATION OF A COMPREHENSIVE AND INTEGRATED SPECTRUM OF STRATEGIES AND ACTIONS TO PRODUCE THE NECESSARY CHANGE IN A VARIETY OF OUTCOMES -- INCLUDING STRUCTURAL, INSTITUTIONAL, SYSTEMIC, ENVIRONMENTAL, BEHAVIORAL, AND HEALTH OUTCOMES.[328]"
>
> — INSTITUTE OF MEDICINE (IOM)

TFAH calls upon the next president to make obesity prevention and control a priority of his administration. Within the first 3 months of taking office, the president should convene a sub-cabinet working group to address the issue. In the past, health officials often have been called on to develop solutions in isolation. There are many factors, however, that are beyond the ability of health officials to influence by themselves. In addition, the ramifications of the obesity crisis impact the nation's economy and global standing. A new model must address obesity across every sector of the government. The National Strategy for Pandemic Influenza Planning provides a strong example for how this type of effort can be undertaken. With leadership and goals identified by health agencies and experts, every cabinet agency has taken charge of developing and implementing policies and programs in their jurisdiction that all contribute to our nation's preparedness for a pandemic flu outbreak.

To help outline how different agencies impact obesity and why a federal government approach is necessary, TFAH has conducted a review of federal government programs and policies (See Appendix C: Overview of Federal Programs That Impact Obesity).

A ***National Strategy to Combat Obesity*** will work best with strong leadership from the president and Congress, goals and strategies outlined by health experts, and coordination of all of the different Cabinet agencies to leverage all of the government's resources. Therefore, the sub-cabinet working group will consult regularly with an Obesity Prevention Advisory Board made up of representatives from state and local government, schools, community and religious groups, business, including the food and beverage industry and farmers, insurance companies, and researchers and scientists.

A. FEDERAL GOVERNMENT

> "First and foremost the government provides leadership, which it demonstrates by making the response to the obesity epidemic an urgent public health priority and coordinating the public- and private-sector response.[329]
>
> Just as it has done with automobile and highway safety initiatives, efforts to curb youth smoking, and current efforts to defend against potential bioterrorist threats, the federal government should set forth obesity prevention as a national health priority - one that is acted upon through extensive and sustained funding and a long-term commitment of resources.[330]"
>
> — Institute of Medicine (IOM)

The federal government has the unique ability to set priorities and bring together state and local governments, the private sector, and communities to work towards solutions. The federal government has the leadership position to be able to develop and set goals for implementing a ***National Strategy to Combat Obesity***.

In addition, the federal government can institute policies and programs that give Americans the tools they need to make it easier to engage in the recommended levels of physical activity and choose healthy foods.

1. Presidential and White House Leadership

As the leader of the country, the president has the most important role to play in the ***National Strategy to Combat Obesity***.

- **Acknowledge That Obesity is a National Priority**
  - ▲ The president must take responsibility for ensuring the future health of the country. The president must lead the movement to make the United States a country that encourages and fosters healthy living by supporting policies that remove the obstacles that get in the way of individuals making healthy choices.

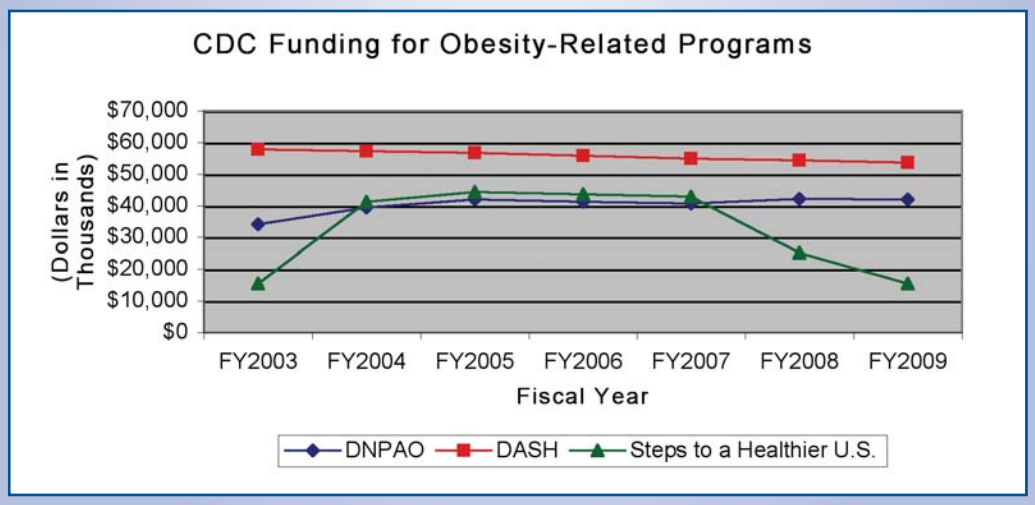
- **Ensure Sufficient Funding to Implement and Evaluate Obesity Policies**
  - ▲ If the U.S. is serious about reversing the obesity trend, the president and Congress need to work together to put substantial resources behind the ***National Strategy to Combat Obesity***. This requires an honest assessment from all federal government departments and agencies regarding their responsibilities under the plan and the resources they will need to fully implement and evaluate their programs. Funding must also come from state and local governments to address this shared responsibility. The funding must include an investment to increase both scientific research to develop effective, wide-scale public health solutions and to provide communities with the capacities and resources needed to make changes. The federal government needs to make a serious national commitment to this public health crisis.

FEDERAL FUNDING FOR OBESITY-RELATED PROGRAMS

"There is a marked underinvestment in the prevention of childhood obesity and related chronic diseases."[331]

— Institute of Medicine (IOM)

Despite the numerous government reports on the worsening obesity epidemic and various studies showing the economic burden of obesity on government and the private sector, federal funding for nutrition, physical activity, and obesity programs has remained virtually flat over the past 3 years for 2 major programs and declined sharply for a third.



Source: CDC's Financial Management Office, Budget Requests for FY2005 through FY2009. Available online at http://www.cdc.gov/fmo/fmofybudget.htm. As noted previously, DASH funding is primarily for HIV prevention activities and not obesity-related programs.

- **Communicate that Reversing the Obesity Epidemic is a National and Government-wide Priority**

▲ The president should require all federal departments and agencies to consider the impact on physical activity and nutrition of all major policy initiatives.

▲ The president should convene a sub-cabinet working group on government-wide approaches to combating key public health problems, like obesity. The working group would report to the president or the White House chief of staff through the assistant to the president for domestic policy.

▲ The president should establish an Obesity Prevention Advisory Board to consult with the sub-cabinet working group on the development of the ***National Strategy to Combat Obesity***. The advisory board would also serve as a watchdog over federal obesity prevention and control efforts and set short- and long-term goals on obesity issues.

▲ The president should appoint a secretary of HHS who shares a vision that focuses on reversing the obesity epidemic and fostering a healthy environment, not solely on treating the problems of obesity after it has become a problem, and who will organize and strengthen HHS.

▲ The president should ensure that health system reform proposals consider the integration of public health and prevention.

▲ The president should direct federal agencies to coordinate a nationwide public education campaign that highlights mental and physical health as a combined entity and encourages people to be as healthy as they can be. The campaign should include messages regarding stress and stress reduction given the association between poor health outcomes, including obesity, and high levels of stress.

2. Obesity-Prevention as a Priority Across All Cabinet Departments

> "Obesity prevention is a cross-cutting issue that does not naturally fall under the purview of any one federal department.[332]"
>
> — The Institute of Medicine (IOM)

Addressing obesity should not be viewed as the sole responsibility of HHS. Instead, it is something in which all federal agencies should participate. In fact, while HHS shoulders a large burden of the costs of obesity-related treatments and illness as borne by Medicare and Medicaid, the agency is just one of many federal agencies with an important role to play in the obesity fight.

Instead, much of the implementation of current obesity and physical activity initiatives occurs in other cabinet departments, such as the U.S. Departments of Agriculture, Education, Housing, Interior, and Transportation. *(See Appendix C: Overview of Federal Programs That Impact Obesity.)*

HHS, however, plays an essential role in providing technical and policy leadership on obesity as a health issue, and funding research into effective interventions.

TFAH recommends the following actions to improve cross-government collaboration:

- **Federal Government Review**
  - ▲ With the president's support and encouragement, federal agencies should undertake a detailed review of their programs and budgets and examine how they impact physical activity, nutrition, and obesity. Upon the completion of such a review, each agency should propose ways it can participate in and implement aspects of the ***National Strategy to Combat Obesity***.
- **Designate High-Level Officials in Each Department to Address Obesity**
  - ▲ The president should order the designation of an official in each cabinet department who focuses on obesity-related policies. The official would work within each department to examine the implications of policies and activities – from agriculture to transportation – on obesity.
- **Health Impact Assessments**
  - ▲ The president should require that federal departments and agencies evaluate and report on the health impact, particularly the impact on physical activity and nutrition, of new domestic policies, programs, and annual budgets. Many European jurisdictions employ similar processes and several U.S. localities, such as Seattle-King County in Washington State, Tri-County in Michigan, Hennepin County in Minnesota, Riverside County and San Francisco in California, have recently adopted this approach.

THE IMPACT OF NEIGHBORHOODS ON OBESITY

The U.S. Department of Housing and Urban Development's (HUD's) Moving to Opportunity (MTO) program provided thousands of poor adults and children an opportunity to use HUD vouchers to move out of public housing in high poverty neighborhoods to lower poverty neighborhoods. The 10-year demonstration project ran from 1992-2002. A HUD evaluation examined the impact of the move on a number of variables, including obesity on the assumption that "moves to low-poverty neighborhoods may reduce obesity through several mechanisms: lower incidence of depression and stress; behavioral changes (like exercise); and different social norms about eating habits."[333] The evaluation found that obesity rates fell among adults and children in the MTO program.[334]

■ **Worksite Wellness for Federal Employees**

▲ The president should establish a program that can assist federal employees in achieving healthy lifestyles as well as foster public health awareness among employees. This approach will serve as an important model for the private sector.

OVERWEIGHT AND OBESITY IN THE MILITARY

A 1992 IOM report "Body Composition and Physical Performance: Applications for the Military Services" noted that "obesity is associated with being unfit and 'un-soldierly.'"[335] Military recruiters dismiss volunteers based solely on height and weight before entering the service on the presumption that they are not physically fit enough to enlist, train, and serve. Perhaps unsurprisingly, the obesity epidemic that is affecting the general U.S. population is also posing problems for the U.S. military. Among new military recruits the percentage of overweight and obesity among 18-year old civilian applicants increased from 25.6 percent in 1993 to 33.9 percent in 2006.[336]

The problem is not limited to new recruits. According to a U.S. military spokeswoman, 16 percent of active duty personnel are obese.[337] Some branches of the military are more affected than others. For instance, the U.S. Navy reports that 62 percent of its members are overweight and 17 percent are obese, while the U.S. Air Force reports that 55 percent of airmen are overweight and nearly 12 percent are obese.[338]

Service members who exceed height-weight guidelines for their branch of the military are often discharged. In fact, every year between 3,000 and 5,000 enlisted members are forced to leave the military for being overweight.[339] A 1995 Defense Department study estimated the average cost of recruiting and training a replacement enlisted member to be $40,283, or $56,782 in 2008 inflation-adjusted dollars.[340,341] This costs the Department of Defense between $170 million and $284 million a year and does not include additional obesity-related medical expenses. A separate 2007 study estimated that the U.S. military healthcare system, TRICARE, spends $1.1 billion annually to treat overweight- and obesity-related diseases.[342]

To combat the growing obesity problem among U.S. servicemen and women, each of the armed services has developed programs to promote fitness and health: the Army has **Weigh to Stay**; the Navy and Marine Corps have **ShipShape**; the Air Force has **Fit to Fight**. These programs use nutrition and fitness counseling to move military personnel and their families toward healthier food choices, exercise habits, and lifestyles.

TFAH recommends the following federal-level actions to prevent and control obesity. The following recommendations should not be seen as a comprehensive list of federal policy actions, but a starting point for government action. **At all times, federal policies should be viewed as setting a floor for action to combat obesity and not a ceiling, meaning that state and local governments should be empowered to take more dramatic action when possible.**

3. Federal Government and Schools

Nutrition Policy

- USDA should issue revised school nutrition guidelines that ensure that American schoolchildren are consuming foods recommended in the most recent Dietary Guidelines for Americans (DGAs). Although it has been 3 years since the release of the 2005 DGAs, USDA has been unable to develop new guidelines. If the current timetable holds, new guidelines are not expected until 2010 at the earliest.

Physical Education & Activity Policies

- The U.S. Department of Education, in collaboration with HHS and the President's Council on Physical Fitness, should set national standards for physical education and physical activity in schools. Given the growing body of evidence linking physical activity with academic performance there is an added incentive to mandate physical activity.
- The administration and Congress should review the Department of Education's 21st Century Community Learning Centers and consider an expansion of their mission to include physical activity, health, nutrition counseling, and nutrition activities.
- The administration and Congress should review the Department of Education's Carol M. White Physical Education Program, and consider an expansion of the federal grant program so that more local educational agencies and organizations can participate and work to initiate, expand, and improve physical education programs for students.

THE PRESIDENT'S CHALLENGE ADULT FITNESS TEST

In an effort to get adults to be more active, the President's Council on Physical Fitness and Sports introduced the adult fitness test in May of 2008. According to Melissa Johnson, the executive director of the council, "what we are trying to do is inspire and motivate Americans to move their bodies more."[343]

The test includes 3 basic components of health: aerobic fitness, muscular strength and flexibility. Each component contains a test to assess overall health: a one-mile walk or 1.5-mile run to gauge cardiovascular fitness, one minute of half sit-ups and push-ups to failure to determine strength, and the sit-and-reach exercise to measure flexibility.[344]

Individuals are encouraged to visit the adult fitness test website at www.adultfitnesstest.org to learn more about the test as well as record results and receive an evaluation.

4. Federal Government and Business

- **Be Model Employers**
  - ▲ Government agencies should set an example for private businesses and organizations by placing a priority on employees' health and assure comprehensive benefits for obesity within the Federal Employee Health Benefit Plan.
- **Incentivize the Private Sector to Provide Wellness Programs**
  - ▲ Federal, state, and local governments should find ways to incentivize or encourage employers to provide workplace wellness programs and preventive care coverage to their employees.
- **Update and Increase Obesity-Related Coverage**
  - ▲ Medicare, Medicaid, and SCHIP should update and increase obesity-related coverage and reimbursement for preventive services (e.g. nutrition counseling and physical activity programming) and set an example for private insurers. *(See Section 3: State Responsibilities and Policies for a detailed legal analysis of current state insurance policies.)*

5. Federal Government and the Food and Beverage Industries

Work with Industry to Limit Advertising to Children

▲ The Federal Trade Commission (FTC), Department of Commerce, and HHS should convene a national summit of food, beverage, and confectionery companies to discuss voluntary restrictions on marketing and advertising of unhealthful foods to children and youth. These measures would apply to television and radio advertising and newer media, including internet, video gaming, DVDs, and other non-traditional means of advertising. If voluntary measures do not go far enough, the federal government should pursue regulatory action to limit advertising and marketing as was done with the tobacco manufacturers.

▲ The Department of Education should ban all marketing and advertising of unhealthy foods in schools. This includes:

- Advertising on Channel One, a news and public affairs content provider to many high schools and middle schools,
- Product sales, through vending machines, soft drink "pouring rights" agreements, branded fast food, and fundraisers;
- Indirect advertising, such as corporate-sponsored educational programs, sports sponsorships, and incentive programs using contests and coupons.

Work with Industry on Portion Size and Labeling

▲ FTC, the Food and Drug Administration (FDA), USDA, Department of Commerce, and other relevant federal agencies should work with industry and retail outlets to develop clear and useful nutrition labeling and to ensure that packaged foods and meals reflect the recommended portion sizes. Retail food outlets in particular are routinely selling meals that are 2 to 3 times larger than what food labels list as a serving.[345]

Require Retail Food Outlets to Provide Menu Labeling

▲ FDA, USDA, Department of Commerce, and other relevant federal agencies should work with retail food outlets to provide better and more readily accessible information about the nutritional content of their products. If voluntary agreements do not work, regulatory approaches should be considered.

Remove Barriers to Breastfeeding

▲ HHS should work with hospitals and health care providers and food industry representatives to broker a voluntary agreement to halt free infant formula distribution at hospitals to encourage breastfeeding. An evaluation of the voluntary ban should guide future decisions to continue the voluntary ban, and perhaps, make it binding.

6. Federal Government and Agriculture

Examine Subsidies for Growing Fruits and Vegetables

▲ Congress and the administration should evaluate farm policy and eliminate barriers to the domestic production of fruits and vegetables. A major barrier to their production is the government subsidies for corn, wheat, soybeans, rice, and cotton which range from $10 billion to $25 billion a year.

Support Small Farmers and Local Food Systems

▲ USDA should support farmers markets, farm-to-school, urban gardens, and other programs that bring fresh, locally grown food into communities, especially those that are underserved by major grocery stores. By providing consumers with greater choice the government can help create demand for locally grown fresh produce and incentivize the return of small farms to this market.

Incentivize Healthy Food Consumption

▲ According to USDA's Economic Research Service the cost of fresh fruit and vegetables rose 40 percent between 1985 and 2000, while the cost of high-fructose corn syrup and vegetable oils declined. USDA should study the factors behind this discrepancy and offer policy solutions to make it economically viable for Americans to buy fresh produce. Policy solutions include the following:

- Funding and technical advice for city residents interested in planting and tending urban fruit and vegetable gardens.
- Financial and logistical support for farmers markets.
- Re-directing commodities subsidies to fruit and vegetable growers.

Revise School and Government Procurement Policies

▲ USDA should reexamine its child nutrition programs and ensure that they encourage the consumption of healthy foods, including the recommended daily amount of fruits, vegetables, and whole grains. By setting higher nutritional standards, or expanding food assistance packages to include more produce (as was done with WIC), USDA can increase the demand for fresh fruits and vegetables and ensure a market for farmers who produce these goods.

7. Federal Government and Research

Strengthen Primary Data Collection Systems

▲ Researchers and public health practitioners need better data. A strong national surveillance system is crucial to assess Americans' health. The federal government must renew and deepen its investment in the National Center for Health Statistics, specifically in the National Health and Nutrition Examination Survey (NHANES), the National Survey on Children's Health, the Behavior Risk Factor Surveillance System, and others.

▲ Researchers need better data on children, particularly children in the 5 to 14-years age group. They need to know what is going on in their environments. As the 2007 IOM report on childhood obesity notes, "surveillance is particularly lacking regarding the environmental and institutional changes that are being implemented with the goal of promoting healthful eating and regular physical activity."[346]

Fund Community-Level Research and Evaluation

▲ According to the IOM report "Progress in Preventing Childhood Obesity", "the gap between the opportunity for evaluations and the capacity to conduct evaluations at the local level appears to be a significant impediment to the identification and widespread adoption of effective child-

hood obesity prevention programs."[347] To address the lack of local-level program evaluation, TFAH echoes IOM's recommendations, which include the following:

- Local program managers should receive funding specifically to carry out program evaluations in partnership with colleges, universities, or other community groups with expertise.
- Government agencies and research institutions should offer technical assistance to local community groups.
- Government agencies and local government/community groups should communicate frequently about on-the-ground success stories.

B. STATE GOVERNMENT

> "OF COURSE, PERSONAL RESPONSIBILITY IS A CRUCIAL PART OF ANY SOLUTION, BUT GOVERNMENT AND GOVERNORS ALSO HAVE AN IMPORTANT ROLE.[348]"
>
> — NATIONAL GOVERNORS ASSOCIATION (NGA)

In the campaign to stop and prevent obesity, the role of the state government is similar in many ways to the role of the federal government. States should provide top-level leadership on this issue and devote more resources -- both financial and manpower -- towards combating the problem. States, however, are closer to the action on the ground and can direct focused efforts towards the problem.

Development of the ***National Strategy to Combat Obesity*** should occur with state and local input, reflecting the shared responsibility of all jurisdictions for the health of Americans. In parallel with the development of the national strategy, states should:

■ Develop State-Specific Obesity Plans

▲ Using best practices put forth by CDC and based on the most up-to-date scientific evidence, states should develop their own plans to combat obesity using policy and environmental changes. These state-level plans should be tailored to meet individual states' needs and use culturally competent strategies to engage various communities within the state. These plans should: involve multiple state agencies; assign specific roles and responsibilities to state agencies; contain clear and measurable objectives, including objectives that are related to reducing obesity rates; link state funding to objectives; include private sector and community groups; contain provisions for a healthier state workforce; and incorporate a system for evaluation and review. *(See Section 3: State Responsibilities and Policies for a discussion of current state obesity plans.)*

■ Evaluate Their Roles and Delegate Responsibilities Among State Agencies

▲ Similar to the federal review and with the support of each state's governor, state agencies should undertake a review of their programs and examine how they impact physical activity, nutrition, and obesity. Upon the completion of such a review, each agency should propose ways they can participate in and implement aspects of their state's strategic obesity plan.

■ Dedicate State Revenues to Implementing the National Strategy to Combat Obesity

▲ The ***National Strategy to Combat Obesity*** will also require states to contribute to funding obesity prevention efforts. Federal and state governments should undertake an assessment to determine how much each state should be required to contribute in order to qualify for federal funds. Different

states have different needs. Some states have a higher burden of obesity and obesity-related diseases, and therefore, a higher level of investment may be needed to achieve goals for improving the health of people in those states. An investment by states will also show a commitment by the state government to improving health. As the 2007 IOM report on childhood obesity noted, "the overall capacity to address childhood obesity is not enhanced when increases in federal funding are responded to by decreases at the state level. A sustained effort that includes adequate planning and cooperation is needed among governmental agencies and departments and other stakeholder groups at these levels to effectively work together."[349]

State Government Employee Wellness Efforts

- State and local governments are employers as well as providers of governance and public service. Many governors have begun initiatives to provide workplace wellness and preventive health care services, including: premium discounts, subsidies for fitness clubs and activities, disease management programs, and information to state employees, such as nutrition, physical activity, and obesity counseling. All states should offer these programs and should also provide these models to private businesses to expand these opportunities to private employees as well.
- State and local government should also assure that their state employee health insurance plans cover appropriate obesity-related services.

Update and Increase Obesity-Related Coverage

- State Medicaid and SCHIP programs should update and increase obesity-related coverage and reimbursement for preventive services (e.g. nutrition counseling and physical activity programming) and set an example for private insurers.
- States should also assess their insurance regulations to assure equitable access to health insurance for those who are obese or overweight and to assure adequate coverage for treatment and services directly related to obesity. *(See Section 3: State Responsibilities and Policies for a detailed legal analysis of current state insurance policies.)*

Leverage Power as Food Purchaser

- The state public sector purchases food across a range of institutions, including in government cafeterias, schools, and prisons. The government should leverage its power as a food purchaser to require a greater emphasis on nutritional value as a priority in the bidding process for these contracts.

Create Healthy Schools

- The state departments of health and education should work together to implement a coordinated school health program to create a healthy school environment.

Evaluate Current Snack Tax and Liability Limitation Policies

- States should devote time and resources to developing evaluation standards to monitor the effectiveness of both types of controversial initiatives.

THE NATIONAL GOVERNOR'S ASSOCIATION HEALTHY STATES PROGRAM

The National Governor's Association (NGA) has made obesity prevention a priority since 2002 even establishing a bi-partisan taskforce of governors to provide leadership on this issue. NGA focuses on promoting a culture of wellness to improve Americans' health and thus increase our global competitiveness and lower health care costs. NGA's report Creating Healthy States: Actions for Governors encourages governors to focus their efforts in 3 areas: communities, worksites, and schools.[350]

The report highlights best practices from various states around the nation in order to foster the exchange of ideas and success stories among governors and state officials. By highlighting what works, NGA hopes to encourage more state action to promote wellness.

NGA'S HEALTHY KIDS, HEALTHY AMERICA INITIATIVE

The Healthy Kids, Healthy America program awards states funding for childhood obesity prevention programs and statewide scans, or reviews, of existing efforts. As of April 2008, 15 states have been awarded up to $110,000 to fund their childhood obesity prevention programs. Of that sum, up to $100,000 can be used to fund proposals to prevent childhood obesity through environmental and policy change, and up to $10,000 can be used to conduct a statewide scan of current efforts within their state to prevent childhood obesity.

The 2008 recipients are: Indiana, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, New Mexico, New York, Rhode Island, South Dakota, Tennessee, Utah, Virginia, West Virginia, and Wisconsin.

C. LOCAL GOVERNMENT

> "LOCAL GOVERNMENT PLAYS A COMPLEMENTARY ROLE TO STATE AND FEDERAL OBESITY PREVENTION EFFORTS. IN PARTICULAR, LOCAL PUBLIC HEALTH DEPARTMENTS ARE INVOLVED IN PROVIDING LEADERSHIP FOR THE HORIZONTAL INTEGRATION OF INTERVENTIONS, COMMUNICATIONS, AND FUNDING REQUIREMENTS, AS WELL AS DEVELOPING ADEQUATE INFRASTRUCTURE FOR POLICIES AND PROGRAMS TO BE IMPLEMENTED AND EVALUATED AT LOCAL LEVELS."[351]
>
> — INSTITUTE OF MEDICINE (IOM)

Local government and community groups often have the strongest direct impact on people's health, and the ***National Strategy to Combat Obesity*** must rely on these groups to implement programs and make positive changes to the built environment. This will require strong leadership from local health officials and the ability of these officials to communicate the importance of physical activity and nutrition to their communities.

Experts should evaluate how local governments can or should help fund wellness, obesity, and physical activity programs. For many local programs, relying on the local property tax base, for instance, can lead to exacerbating pre-existing disparities among neighborhoods. As with many social issues, the lowest-income areas are the hardest hit by obesity and obesity-related health problems.

Local government can act -- and act decisively -- in the area of the built environment and retail food regulations. The environment that surrounds people has a large effect on individual choices, including the following:

- A 2003 study found that suburban sprawl is linked to health. Not only are people in more sprawling communities likely to have a higher BMI, but they are also at increased risk of suffering from hypertension or high blood pressure. Based on the findings of the study, people in the most sprawling areas are likely to weigh 6 pounds more than those in the most compact communities.[352]
- A 2008 study found that people who live near an abundance of fast food restaurants and convenience stores are significantly more likely to suffer from obesity and diabetes when compared to people living near grocery stores and famers' markets.[353]

Americans are interested in and support the idea of healthy communities. One study

found that 90 percent of U.S. adults support using local government funds for walking and jogging trails, recreation centers, and bicycle paths.[354] Another study reported that 55 percent of Americans would like to walk more and drive less, and 52 percent would like to bicycle more.[355] It appears that the demand is there for communities to invest in building bike paths and walking and running trails.

Local government plays a key role in changing the built environment so that it fosters healthy eating and healthy lifestyles. From issues related to zoning and public transportation, to funding for community-based programs, local officials lead the way.

As part of the ***National Strategy to Combat Obesity***, local governments should:

- **Provide Improved Access to Healthy Foods in Low-Income Areas**
  - Healthy food access is a demonstrated problem in many low-income communities. Communities should encourage the development of and provide public space for locally-operated produce markets and farmers' markets. Also, through the use of incentives, communities should encourage supermarkets and food shopping vendors to locate in lower-income neighborhoods and offer healthier food alternatives.

- **Use Zoning Laws to Change Food Environment**
  - Zoning laws can be used to encourage healthy food providers to locate to underserved neighborhoods; local government can also implement zoning laws to limit fast-food restaurants or keep a certain ratio of fast food restaurants to grocers and farmers' markets.

- **Encourage "Mixed Use" Areas**
  - Communities and states should examine and update zoning and land-use laws to allow for more "mixed use" commercial and residential communities, so people can have more opportunities to walk or bike to retail centers and to work.

- **Examine Health Impact of New Building**
  - Communities should require "Health Impact Assessments" for proposed land-use and building projects, which will help communities and policy makers understand the possible resulting changes to people's health, including access to recreational space and to food shopping. These can be based on the "Environmental Impact Assessment" model.

- **Building Design Codes**
  - Encourage new building design that is stair-friendly and offers other spaces that facilitate activity in commercial and public buildings.

- **Encourage Greenspace Development and Build More Sidewalks**
  - Prioritize and incentivize increased greenspace development through the collaboration of public health and transportation entities in states. Communities should also place greater emphasis on building well-lit sidewalks and paths, particularly in new developments and around highways, to make it possible for people to walk safely.

- **Encourage Transportation Fund Use for Mass Transit and Alternatives to Highways**
  - Communities should insist that states and counties require alternative proposals be examined when new highway initiatives are proposed. New development should also be required to include pedestrian-friendly components, such as sidewalks, which encourage interconnectivity of communities and opportunities for activity. State and federal transportation dollars should be considered for mass transit, sidewalk, and mixed use opportunities rather than be focused on highway construction.

- **Modernize New School-Site Construction Requirements**
  - Local governments should review and update old acreage requirements for new school construction that required large spaces for construction, but have ended up resulting in the building of schools in

remote locations that students can often only access by bus rather than by walking or biking. Flexible standards for school site construction would allow communities to build schools closer to existing homes and commercial regions instead of in remote areas.

- **Revitalize Walk-able Neighborhoods**
  - Many cities and towns have downtown areas that were at one time vibrant economic centers, but have since lost economic investment. Many of these centers have the necessary attributes to make them walk-able and bike-able communities. Local governments should invest in revitalizing old downtowns and occupying vacant buildings and lots.

- **Require Menu Labeling**
  - Local governments should require restaurants to provide consumers with nutrition information on in-store menus and menu boards for the most popular items.

HEALTH IMPACT ASSESSMENT OF MENU LABELING

In 2008, the Los Angeles County Department of Public Health conducted a health impact assessment of menu labeling. County health officials were interested in determining the effect of menu labeling on the obesity epidemic. Researchers used the conservative assumption that nutrition labeling would result in 10 percent of chain restaurant customers ordering reduced calorie meals, with an average reduction of 100 calories per meal, no increase in other food consumption, and no increase in physical activity. Based on this assumption the researchers found that menu labeling would prevent nearly 40 percent of the estimated 6.75 million pounds that Los Angeles County residents age 5 and older gain in weight each year.[356]

EXAMPLES OF LOCAL GOVERNMENT OBESITY-RELATED POLICY FIXES

New York, NY -- In January 2008, New York City's Board of Health issued a regulation requiring all restaurants that operate at least 15 separate outlets to post calorie counts on their menus and menu boards. The new regulation will affect about 10 percent of all New York City restaurants.[357] New York City had passed similar legislation in 2006 but a U.S. district judge rejected the measure on grounds that it violated federal food-labeling laws. Although the State Restaurant Association continues to challenge the regulation in court, on May 5, 2008 the City Health Department started issuing citations to chain restaurants that were not in compliance. Fines will not be assessed until July.[358] Similar legislation has been enacted in San Francisco and Seattle/King County, Washington, and is under consideration by 21 other state and local governments.[359]

Seattle, WA -- Active Seattle, a partnership under Active Living by Design, is one of many cities seeking to create walk-able neighborhoods.[360] Seattle chose 5 communities to implement the design. Some program accomplishments include:

- Implementation of a Safe Routes to School program at 2 elementary schools.
- Completion of 10 walking audits in project area neighborhoods as part of the assessment process.
- Generation of over $494,000 in grants and contributions for Safe Routes to Schools.
- Advocating successfully for $875,000 in spending for sidewalks and stairways in the mayor's budget, and generated an addition $1.8 million supplemental funding for sidewalks and crossings.

THE GROCERY GAP

Residents in low-income and minority neighborhoods are less likely to have access to fresh fruits and vegetables than people who live in higher-income and predominantly white neighborhoods.[361] Large supermarkets, which have a better selection of fresh produce and other healthy foods, such as whole grains and lean proteins, tend to be missing from low-income and minority communities across the United States.

According to The Food Trust, a Philadelphia-based organization whose mission is to ensure that everyone has access to affordable, nutritious food, the so-called "'grocery gap' existing today in many urban areas resulted from the confluence of complex social, economic and public policy factors."[362] When middle class whites left big cities in the 1960's and 1970's for the suburbs, the large supermarkets often followed, attracted by larger, less expensive commercial tracts of land, business-friendly zoning, and less crime.[363] In the place of supermarkets, low-income and minority neighborhoods have seen an influx of small grocers, convenience stores and fast food restaurants.[364] These retail food outlets are less likely to sell fresh produce and other healthy food options.

Researchers suggest the lack of healthy fresh foods coupled with the glut of unhealthy food choices contributes to the high rates of obesity, diabetes, hypertension, and cardiovascular disease among low-income and minority populations.[365] To counter these negative effects, a number of organizations, such as the Food Trust, are working with local officials to increase consumers' access to fresh produce and healthier food options.

Pennsylvania -- The Philadelphia-based Food Trust was instrumental in launching the Pennsylvania Fresh Food Financing Initiative (FFFI), a first of its kind program in the United States that uses state and private funds to bring supermarkets carrying a variety of healthy food into underserved low-income, minority neighborhoods in an attempt to improve eating habits and overall health. As of January 2008, the FFFI had committed $38.9 million in grants and loans to 50 stores across the state, ranging in size from 900 to 69,000 square feet. These projects are expected to bring 3,723 jobs and 1.2 million square feet of fresh food retail to communities across Pennsylvania.[366]

New York, NY -- New York City has lost one-third of its supermarkets over the past 6 years severely limiting lower-income residents' access to fresh, healthy foods.[367] In early 2008, the City Council voted in favor of a measure designed to increase the number of fruit and vegetable carts in underserved neighborhoods.[368] The measure will put up to 1,000 produce vendors on the streets in 43 different police precincts. The bill was opposed by members of a smaller grocers' association on the grounds that these push cart vendors would take business away from them while not actually increasing demand. City officials justified the measure by citing a 2006 New York City health department survey that found that just 20 percent to 40 percent of smaller grocers, or bodegas, carried apples, oranges and bananas, while fewer than 6 percent stocked leafy green vegetables.

New Orleans, LA -- In 2007, the New Orleans Food Policy Advisory Committee published a 24-page report detailing the challenges faced by many residents of southern Louisiana after Hurricanes Katrina and Rita. According to the report, the storms drastically reduced the number of food retailers serving the public at a time when there was already a deficit of these outlets.[369] Currently, there are only 15 supermarkets in New Orleans, a city where public transportation is still unreliable and one-quarter of residents don't have cars.[370] The Committee made a number of recommendations for city and state officials to remedy the problem, including the provision of grants and loans to small grocers and supermarkets. Large supermarkets, however, are wary of opening shop in New Orleans due in part to the devastation wrought by the 2005 hurricanes and the lack of a local distribution network. According to one supermarket manager, it is a 14-hour round trip to his nearest distributor; few supermarkets are willing to pay those kinds of transportation costs.[371]

D. COMMUNITY AND FAITH-BASED ORGANIZATIONS

> "By stepping outside the traditional view of obesity as a medical problem, we may more fundamentally focus on the many institutions, organizations, and groups in a community that have significant roles to play in making the local environment more conducive to healthful eating and physical activity."[372]
>
> -- The Institute of Medicine

Although prevailing U.S. public opinion is that obesity is an individual's problem, the reality of the epidemic is that it is often a community's problem. Communities are affected when there are no easily accessible grocery stores nearby. Communities are affected when crime and violence prevent children, youth, and adults from engaging in outdoor physical activities. Communities are affected when unemployment rates are high and access to health care is limited. Thus, community-based and faith-based organizations have an important role to play in the ***National Strategy to Combat Obesity***.

Community and faith-based organizations can also help public health and local government officials tailor messages to their members, particularly when interventions are needed to address disparities in obesity and physical activity among racial and ethnic groups.

As part of the ***National Strategy to Combat Obesity***, community and faith-based organizations should:

- **Incorporate Obesity Prevention Messages into Events**
  - ▲ Community and faith-based groups should reach out to their members using culturally-competent messages promoting healthy nutrition and physical activity.
- **Provide Opportunities for Safe and Supervised Activity for Children**
  - ▲ Community and faith-based groups should develop and support organizations and facilities that allow children to participate in safe physical activity programs.
- **Provide No- or Low-Cost Physical Activity Opportunities and Nutrition Counseling**
  - ▲ Community and faith-based groups should support no- and low-cost venues for children and adults to participate in physical activity. They can do so by maintaining parks and recreation centers and offering the use of their own facilities to other community groups that provide no- or low-cost physical activity programs.
- **Offer Healthy Food at Community Events**
  - ▲ Community and faith-based groups should provide nutritious food at events to help people foster and maintain healthy eating habits.

EXAMPLES OF SUCCESSFUL CULTURALLY- APPROPRIATE INTERVENTIONS

Community and faith-based organizations are instrumental in implementing successful interventions. Different racial and ethnic groups do not all have the same experiences and priorities, and public health officials must take these divergent backgrounds into account when creating interventions in order to achieve the health goals.

Project Dulce - San Diego, California
Project Dulce is a program based in San Diego County that provides outreach, education, screening, diagnosis, and clinical care to patients with both type 1 and type 2 diabetes. The program is aimed at low-income, underinsured or uninsured Latino adults. Project Dulce works because it targets the barriers that affect this population -- specifically the language barrier between patient and physician. The program involves medical assistants who are bilingual, and features bilingual health education courses. Project Dulce also trains community health workers, or promotoras de salud, to raise awareness about diabetes among the low-income, Spanish-speaking population. Incorporating this bilingual aspect into the program increases the comprehension and comfort of participants, thereby improving the health of participants.

PATHWAYS - Arizona, New Mexico, and South Dakota
PATHWAYS is a program for students in grades 3-5 at schools in Native American communities that promotes healthy eating and increased physical activity. The PATHWAYS program involves Native American leaders in the planning process in order to engage their communities and earn their trust, while also developing culturally-acceptable interventions. Classroom materials for the children include stories and activities based on fictional Native American children. Although the program did not yield any statistically significant reductions in students' percentage of body fat, it did affect their knowledge, attitudes, and behavior regarding healthy eating and physical activity.

Source: The Partnership to Fight Chronic Disease. [373]

E. SCHOOLS

> "SCHOOLS CAN PLAY AN IMPORTANT PART IN A NATIONAL EFFORT TO PREVENT CHILDHOOD OBESITY. MORE THAN 95 PERCENT OF AMERICAN YOUTH AGED 5 TO 17 ARE ENROLLED IN SCHOOL, AND NO OTHER INSTITUTION HAS AS MUCH CONTINUOUS AND INTENSIVE CONTACT WITH CHILDREN DURING THEIR FIRST 2 DECADES OF LIFE."[374]
>
> — MARY STORY, DIRECTOR OF THE ROBERT WOOD JOHNSON FOUNDATION'S HEALTHY EATING RESEARCH PROGRAM.

Children spend a significant amount of time in school and consume one-fifth to one-half of their meals there.[375] Teachers and school administrators should use this time to instill healthy habits in children to counter the unhealthy messages children receive outside of school. As researchers from Yale University and New York University have noted:

The default conditions for children promote unhealthy eating and physical inactivity. Factors such as large portions, high consumption of soft drinks and high-calorie fast foods, low costs for high-calorie foods and higher costs for fruits and vegetables, limited access to healthy foods for the poor, and massive marketing campaigns targeting children are linked to poor diet, high risk for excess weight gain, and in some cases diseases such as diabetes.[376]

It is therefore fundamental for schools to incorporate strategies to improve the quality of nutrition and physical activity they pro-

vide for students. In order for schools to get students to be "as fit as they can be," they must: offer healthy food options, increase the amount of daily physical activity required, and limit and/or improve the nutritional value of "competitive" foods.

As part of the ***National Strategy to Combat Obesity***, schools should:

School Nutrition Recommendations

- **Adopt Higher Nutrition Standards Than USDA**
  - ▲ Some states have taken the lead in setting requirements that are higher than USDA's minimum requirements for food served in school. Instead of focusing on delivering minimum nutrition standards, schools and school districts should concentrate on setting high nutrition standards for the foods served to students that allow them to eat for better health. These standards should be extended to cover "competitive" foods as well as those sold during the regular meal program.
- **Ban Sugar Sweetened Drinks**
  - ▲ Schools should enact the guidelines set forth in the 2007 IOM report "Nutrition Standards for Foods in Schools: Leading the Way toward Healthier Youth" and only offer so-called "Tier 1" beverages for sale during school hours. Tier 1 beverages include water without flavoring, additives or carbonation; one percent and non-fat milk; and 100 percent fruit juice. High schools may choose to allow the sale of "Tier 2" beverages which are defined as non-caffeinated, non-fortified beverages with less than 5 calories per portion.
- **Provide Free Drinking Water**
  - ▲ Make sure students have access to free, clean drinking water in the cafeteria and gym to encourage water consumption in the place of sugary drinks.
- **Revise Food Contract Policies and Priorities to Focus on Maximum Nutrition**
  - ▲ Contracts for school food suppliers and providers should be reviewed to focus on competing to provide maximum nutrition standards to students.
- **Evaluate Alternative Fundraising Options that Do Not Involve Providing Food of Minimum Nutrition Value to Students**
  - ▲ Currently many schools, school districts, and after-school activities rely on revenue from vending machines and other food sales. Jurisdictions should conduct cost-benefit analyses of these funds, factoring in the impact and cost to children's health. Communities must be better informed that while revenue from "competitive foods" may seem like an effective fundraising mechanism, it also directly results in a reduction of federal funds to the school lunch program. Communities should prioritize finding other revenue streams to support programs or offer more healthful items for sale.
- **Provide Professional Development to School Food-Services Staff**
  - ▲ Require those who manage school nutrition programs to have appropriate academic preparation and certification; and, ensure that those who manage school nutrition programs receive regular professional development on key nutrition program topics and strategies.

School Health Screening Recommendations

- **Evaluate and Refine BMI Initiatives**
  - ▲ School BMI screening programs should be evaluated for effectiveness for reducing and controlling obesity. Schools in which BMI data is collected should establish clear and consistent evaluation standards to ensure that its intended outcomes and any potential unintended consequences can be measured and monitored.

- BMI measurement programs should be coordinated with a safe and supportive school environment for students of all body sizes and a comprehensive set of science-based strategies to promote physical activity and healthy eating.[377]
- BMI measurement programs should adhere to safeguards, as detailed by CDC's Division of Adolescent and School Health to reduce the risk of potentially harming students.[378] These safeguards include the following:
  - Introduce the program to school staff and community members and obtain parental consent.
  - Train staff in administering the program (ideally, implementation will be led by a highly qualified staff member, such as the school nurse).
  - Establish safeguards to protect student privacy.
  - Obtain and use accurate equipment.
  - Accurately calculate and interpret the data.
  - Develop efficient data collection procedures.
  - Avoid using BMI results to evaluate student or teacher performance.
  - Ensure parents receive a clear and respectful explanation of the BMI screening results and appropriate follow-up actions.
  - Resources are available for safe and effective follow-up.

Physical Activity Recommendations for Schools

Ensure Physical Activity Is a Part of Students' Daily Lives

- All K-12 students should receive daily physical education. School officials should eliminate barriers to physical education, such as the lack of quality teachers, insufficient time, and lack of professional development for P.E. teachers.
- Schools should require and P.E. teachers should be trained to not only increase the amount of time students spend in physical education classes but ensure that enough time is actually being spent in moderate-to-vigorous physical activity during P.E. class.
- Schools should provide other physical activity throughout the school day that reinforces what is taught in physical education, and provide students the opportunity to apply skills and concepts learned in P.E. Other physical activity opportunities include after-school physical activity clubs, walk-to-school programs, classroom breaks, and recess.

Make It Easier for Students to Actively Commute to School

- Schools and communities should ensure that their built environments enable students to walk or bike to school. By working with city or county planning and transportation officials, schools can establish safe routes to schools by establishing or maintaining well-marked crosswalks and sidewalks and securing adequate numbers of crossing guards around the school. The need for physical activity should be incorporated into all planning for building new schools or remodeling existing schools.

Establish Joint Use Agreements with Community and Faith-Based Organizations

- Schools should encourage activity throughout the day and ensure that facilities and space for students provide options for physical activity before and after school as well as between classes. Joint use agreements that include liability protection for both school districts and community and faith-based groups are one way to encourage these groups to run before- and/or after-school programs for children and adolescents in un-used school space.

Improve Nutrition and Health-Promotion Education

- Greater efforts should be made to educate students about ways to maintain good nutrition and exercise regimens and how this impacts their health.

F. FAMILIES AND INDIVIDUALS

> "FAMILIES IN THE UNITED STATES CURRENTLY FACE MANY POTENTIAL OPPORTUNITIES AND CHALLENGES THAT INFLUENCE THE EFFORTS OF HOUSEHOLD MEMBERS TO ENGAGE IN HEALTHY BEHAVIORS. THE CHALLENGES INCLUDE THE STRESSES AND PRESSURES OF DAILY LIVING, ALONG WITH ECONOMIC AND TIME CONSTRAINTS THAT MAKE HEALTHFUL EATING AND DAILY PHYSICAL ACTIVITY DIFFICULT FOR MANY FAMILIES TO ACHIEVE.[379]"
>
> — INSTITUTE OF MEDICINE (IOM)

Personal responsibility is a major factor in obesity. Individuals choose between the hamburger and French fries or the turkey burger and side salad. Parents choose to buy low-sugar cereals instead of the high-sugar options advertised on the television. Families decide to take a bike ride together instead of sitting at home watching television. Although government is limited in what it can do to model in-home behaviors, IOM notes that "parents and families can respond to policy changes and initiatives implemented in other settings."[380] For example, if communities improve bike trails or add lighting to walking paths, parents and children can engage in more physical activity in a safer environment. In addition, public education campaigns by federal, state, and local governments, which are sometimes undertaken in partnership with private sector partners, help provide people with information to help them with the choices they make.

As part of the ***National Strategy to Combat Obesity***, families and individuals should:

- **Factor Health Concerns into Their Eating and Exercise Choices**
  - ▲ Research has found that even small changes in diet and physical activity can yield big results toward reducing people's risk for health problems, ranging from diabetes to heart disease. Everyone should regularly engage in some form of physical activity. Individuals should also adapt eating patterns toward healthier selections and limit their intake of foods with minimal nutritional value. People should also learn about and take advantage of resources designed to help them stay healthy. If they are unsatisfied with the support they receive, they should make their opinions known to their local, state, and federal government officials.
- **Be Concerned about Obesity and Inactivity as Health Risks to Their Family Members**
  - ▲ By encouraging family members to make healthy choices, people may help decrease the number of health problems their loved ones face. Particularly, by helping children stay active and maintain nutritious eating habits, families may help them avoid potential life-long diseases. Families also have leverage as consumers. They should directly communicate with the food, beverage, and marketing industries and use their purchasing power to encourage product development and offerings that match the interest they may have for alternative choices.
- **Encourage Mothers to Breastfeed Their Infants and Toddlers**
  - ▲ Research has found that breast-fed infants gain less weight and stay leaner than their formula-fed counterparts, as well as showing lower rates of chronic diseases.

G. EMPLOYERS

> "What we do know now is that obesity and overweight are contributing about 27 percent to the increase in premiums that are paid by private employers.[381]"
>
> — Christine Ferguson, former Massachusetts Health Commissioner and Director of the STOP Obesity Alliance.

The ***National Strategy to Combat Obesity*** should call for government and private sector employers to make certain that every working American has access to a workplace wellness program.

Sixty-six percent of the U.S. workforce population is overweight.[382] The economic consequences of this are reflected in lost worker productivity and higher health insurance premiums.

The negative health consequences of inactivity and poor nutrition are leading to a less productive U.S. workforce and exponentially driving up health care costs. It is in the economic interest of every employer and the nation as a whole to put a greater emphasis on keeping the workforce healthy and providing preventive care.

Employers have the ability to influence their employees through nutrition and fitness programs, contests, and incentives. A healthy workforce equals a more productive workforce, where both employers and employees can benefit from improved health.

As part of the ***National Strategy to Combat Obesity***, employers should:

- **Offer Wellness and Disease Prevention Programs and Benefits**
  - Offer employees programs and health benefits that help them stay healthy, including nutrition, physical activity, and obesity counseling, subsidizing health club memberships, and providing insurance discounts for preventive services. Investing in the health of employees not only improves productivity but also cuts down on absenteeism. A national forum should be established for employers to share best practices in worksite wellness and to foster connections between smaller employers to promote economies of scale to offer wellness benefits.
- **Provide Opportunities for Employees to Be Active during the Day**
  - For example, businesses should maintain clean, well-lit stairwells to encourage employees to take the stairs. Businesses should also focus on providing healthy food options in vending machines and in cafeterias.
- **Replace Smoke Breaks with Fitness Breaks**
  - Employees should be encouraged to engage in physical activity on their lunch hours and breaks. Employers have long allowed smokers to step outside for 10 minutes or so throughout the day for a cigarette break. Employees should instead be offered "walking breaks," whereby they can leave their desks for 10 minutes or so to walk around the office.
- **Advocate for the Health Insurance Industry to Develop Coding and Payment Mechanisms for Obesity Prevention Services**
  - Generally physicians do not receive enough support, resources, or reimbursement from insurance companies to prescribe preventive care for patients with chronic diseases. Employers should work with insurance companies to ensure that plans cover nutrition counseling, weight loss and management programs, and similar complementary services to decrease obesity and prevent the development of more chronic diseases.

- **Provide Opportunities for Female Employees to Pump Breast Milk**

▲ A 2007 IOM report on childhood obesity noted that "more widespread availability of convenient and private rooms for pumping breast milk at a worksite could potentially facilitate mothers' continued breastfeeding of their infants for the recommended 4 to 6 months."[383]

EMPLOYMENT AS A BARRIER TO BREASTFEEDING

The benefits of breastfeeding for infants and mothers are well documented. According to the American Academy of Pediatrics a breastfed infant is 21 percent less likely to die in the first year than one who is not breast-fed, and breast milk helps protect babies against a long list of infectious and chronic diseases, including diabetes, obesity and asthma.[384] For mothers, the benefits include a lower risk of breast and ovarian cancer as well as protection against weight gain.[385] This strong evidence base led the U.S. government to include breastfeeding goals in the "Healthy People 2010" report. The report set out 2 main breastfeeding goals:

- To increase the proportion of mothers who breastfeed their babies in the immediate postpartum period from 64 percent to 75 percent.
- To increase the proportion of mothers who breastfeed their babies at 6 months from 29 percent to 50 percent.[386]

However, women returning to work after the birth of a child who wish to continue breastfeeding often face challenges. In fact, a 2006 study found that working full-time had a negative effect on breastfeeding duration.[387] While 39 states and D.C. have laws that specifically allow women to breastfeed in any public or private location, only 19 states and D.C. have laws related to breastfeeding in the workplace.[388]

Mothers who wish to express or 'pump' breast milk often lack a clean, private space where they can do so. According to a Cochrane Review article on breastfeeding in the workplace, "unless these mothers get support from their employers and fellow employees, they might give up breastfeeding when they return to work. As a result, the duration and exclusivity of breastfeeding to the recommended age of the babies would be affected."[389] The review went on to note that by promoting and supporting programs to support breastfeeding, not only could employers influence the duration of breastfeeding and by doing so improve the health of mother and baby, but the employer would also benefit from less work absenteeism, higher productivity, and increased employee morale and retention.[390]

H. INSURANCE COMPANIES

> "CURRENT GOVERNMENT POLICY PROVIDES DISINCENTIVES FOR INSURERS TO INCORPORATE OBESITY PREVENTION PROGRAMS INTO THEIR POLICIES.[391]"
>
> — ERIC A. FINKELSTEIN, HEALTH ECONOMIST AND CO-AUTHOR OF *THE FATTENING OF AMERICA: HOW THE ECONOMY MAKES US FAT, IF IT MATTERS, AND WHAT TO DO ABOUT IT.*

The health care industry also has a role in the ***National Strategy to Combat Obesity***. Insurance companies have to pay out excessive amounts of money for obesity-related chronic diseases such as hypertension and diabetes. Preventive services may cause increased costs for the insurer up front, but reduced rates of obesity will lower costs over time.

Health economists, however, have noted that the current U.S. healthcare system is not set up to focus on obesity prevention. According to Eric Finkelstein, co-author of "The Fattening of America", private insurers reap few benefits from paying for prevention programs as the majority of the cost-savings are realized when their customers age out of private insurance and are covered under Medicare. He argues that since the federal government would benefit from any prevention and wellness programs instituted by private insurers, the government should offer financial incentives that make it profitable for these private companies to provide preventive benefits

As part of the ***National Strategy to Combat Obesity***, insurance companies should:

- **Promote Prevention Efforts in the Marketplace**
  - Offering more prevention-focused benefit options to employers could improve long-term health and make an economic difference. This should extend to providing prevention support and offering healthy food and activity capabilities to their own employees as well.

- **Work with Companies of All Sizes**
  - Insurers should work with small- and medium-sized employers to provide programs that are affordable.

- **Insurance Companies Should Not Discriminate Based on a Person's Weight**
  - Obesity or overweight should not be used as a risk factor for determining eligibility for insurance or coverage of treatment. Insurers should reimburse for all evidence-based services and treatments. *(See Section 3: State Responsibilities and Policies for a discussion on state insurance coverage laws.)*

I. FOOD AND BEVERAGE INDUSTRIES

> "The overwhelming presence of food and beverage advertising in American life is a powerful part of the context that cannot be ignored in a discussion of eating and obesity trends in the United States.[392]"
>
> — Consumers Union, Publisher of *Consumer Reports*

The ***National Strategy to Combat Obesity*** must include the food industry. According to the Center for Science in the Public Interest, there are 3,800 calories available in the food supply for each person each day. The average American, however, needs only 2,350 calories per day.[393]

Not only do we have an overabundance of food, particularly of foods that are low in nutritional value, but marketing campaigns encourage consumers of all ages with messages to buy and eat more. According to *Advertising Age*, the food, beverage, and candy industry ranked sixth in advertising buys in 2004 with a combined total of $6.84 billion spent on U.S. advertising, while the restaurant industry spent a total of $4.42 billion and ranked 13th in overall advertising spending.[394]

A separate IOM report on food marketing to children reports that $10 billion a year is spent to advertise foods, beverages and meals to children and youth, $5 billion of which was for TV advertising.[395]

Total U.S. Advertising Dollars (2004) Food, Beverage, and Candy Companies & Restaurants[396]

Company	Total U.S. Advertising (in millions)	Rank
McDonald's	$ 1,388.9	18
PepsiCo	$ 1,262.2	22
Nestle	$ 1,028.3	31
General Mills	$ 912.5	35
Yum Brands	$ 779.4	46
Mars, Inc.	$ 739.8	50
Kellogg Co.	$ 647.1	56
Burger King Corp.	$ 542.1	67
Coca Cola Co.	$ 540.5	68
Sara Lee Corp	$ 528.9	71
Wendy's International	$ 435.8	83
Campbell Soup Co.	$ 425.3	84
Cadbury Schweppes	$ 374.8	91
ConAgra Foods	$ 363.8	95

Note: Figures are for 2004 advertising dollars. This includes 'unmeasured media' i.e. marketing strategies used by food companies such as direct mail, sales promotion, couponing, catalogs, and special events.

As part of the ***National Strategy to Combat Obesity***, the food, beverage, and marketing industries should:

- **Develop and Promote Products that Encourage Healthful Eating**
  - ▲ The food industry should undertake a review of the ingredients it uses and, when possible, reformulate food products. For example, using only whole grains and lowering sodium levels across the board.

Inform Customers about Healthy Options

- Providing customers with healthy options and additional product information and nutritional values can be good for both health and the bottom line. The food and beverage industry should provide consistent nutrition labeling to consumers, based on product size. Industry should seek the input of parents and other community members to establish standards and practices for marketing products to children.

Improve Access to Healthy Foods in All Communities

- The Grocery Manufacturers Association (GMA) should encourage members to open new supermarkets in underserved communities where they can provide these communities with more access to fresh fruits and vegetables and other healthy food options. Working with local communities, GMA members should develop feasibility studies to assess the economic viability of opening new outlets.

SUPERMARKETS EXPERIMENT WITH NUTRITION LABELING

The Maine-based supermarket chain, Hannaford Bros., developed one of the first nutritional rating systems for grocery store shoppers in 2006. The system, Guiding Stars, rates meat, dairy, fresh produce, and packaged goods on their nutritional content and awards either a 1-, 2-, or 3-star rating to the product.[397] One-star is "good nutritional value"; 2-stars are "better nutritional value"; and 3-stars are "best nutritional value." Out of a total of more than 25,500 rated food items throughout the stores, more than one-quarter (28 percent) receive one, 2 or 3 stars.[398]

According to store officials, the Guiding Star system has had a major impact on shoppers' buying habits as consumers flock to products with stars. For instance, sales of cereals, breads, canned and jarred foods, dried pasta, snack foods, and beverages with one, 2 or 3 stars grew steadily at 2-and-a-half-times the rate of those without stars.[399] Given that over 70 percent of the products sold in Hannaford stores that were evaluated failed to receive a single star, some experts wonder if ratings systems such as Guiding Stars could spur food manufacturers to make healthier items.

The ratings system, developed by a team of nutritionists and public-health experts, uses a formula that credits a food's score for the presence of vitamins and minerals, fiber and whole grains. It debits the score for trans fats, saturated fats, cholesterol, added sugars, and added sodium. The criteria support the recommendations of the 2005 DGAs and are meant to be used in tandem with the Nutrition Facts label and the ingredient list.

Currently, Guiding Stars is used in 164 supermarkets across New England and New York. Hannaford Bros.' parent company, a Belgium-based firm, is introducing the Guiding Stars system at its Florida chain, Sweetbay, and plans to expand to Food Lion, a supermarket chain present in the southeast and mid-Atlantic regions of the United States.

WARNING LABELS ON VENDING MACHINES -- THE UNIVERSITY OF VIRGINIA EXPERIENCE

In May 2004, the University of Virginia Health System placed so-called warning labels on the 120 vending machines located on its premises. The warning labels used the stop-light model to distinguish among the nutritional values of snack foods. A red label indicated the item contained 201 calories or more (or 10.1 percent of more saturated fats); a yellow label indicated the item contained between 141 and 200 calories (or 5.1 percent to 10 percent saturated fat); a green label was placed on items 140 calories or less (and less than 5 percent saturated fat.)[400] In addition, the university added a 5-cent tax to the cost of red items. Proceeds from this levy were donated to the university's Children's Fitness Program. Large signs describing the stop-light system and tax were placed next to each vending machine.

After one year, red-labeled snack sales decreased 5.3 percent, yellow-labeled snack sales increased 30.7 percent, and green-labeled snack sales increased 16.5 percent.[401] The 5-cent tax raised $6,700. The university is now comparing sales of color-coded items in one of its hospital cafeterias with the sale of non-color-coded items in a second hospital cafeteria to see if the plan merits expansion to vending machines and cafeteria programs in schools throughout the state.

J. AGRIBUSINESS AND FARMERS

> "We strive to fulfill consumer needs for great-tasting, high-quality fresh vegetables, and affordable healthy food choices, but we need agricultural policy priorities to assist us in that effort.[402]"
>
> — Maureen Torrey Marshall, Co-chair of the United Fresh Fruit & Vegetable Association

According to USDA, Americans do not eat enough fruit and vegetables. A 2008 study found that based on USDA daily recommended levels, Americans need to boost fruit consumption by 132 percent and overall vegetable consumption by 31 percent. Certain subgroups of vegetables such as legumes would need to be increased by 431 percent; orange vegetables by 183 percent; and dark green vegetables by 175 percent. Meanwhile, starchy vegetables, such as potatoes, need to be decreased by 35 percent.[403]

The study notes, however, that the U.S. food production system is "currently incapable of providing sufficient levels of fruit and vegetables for all to consume a healthy diet."[404] In fact, 60 percent of all fresh fruits and vegetables consumed in the U.S. are imported.[405]

One reason so much of the fruit and vegetables Americans consume is imported is that the majority of U.S. farm acreage is devoted to growing cash crops such as soy, wheat, corn, and rice. Critics of domestic U.S. farm policy charge that farm subsidies have led to the overproduction of corn and soybeans. These cheap, surplus crops are used to make high fructose corn syrup and hydrogenated vegetable oils, which enter the American diet as excess sugar and fat. According to the Institute for Agriculture Trade and Policy, a Minnesota-based public policy organization working to ensure fair and sustainable food, farm, and trade systems, "our misguided farm policy is making poor eating habits an economically sensible choice in the short term."[406]

As part of the ***National Strategy to Combat Obesity***, agribusinesses and farmers should:

- **Farmers' Markets Should Be Equipped to Redeem Food Stamps and WIC Coupons.**
  - ▲ Farmers should work with local and state governments to equip farmers' markets with the necessary technology to process electronic food stamp debit cards and WIC program cards.

- **Work with Schools and Community Groups to Develop Urban Gardens**
  - ▲ Farmers and agribusiness should collaborate with schools and community groups to develop urban gardens. Agribusiness can provide materials while farmers can provide technical support to urban gardeners. Urban gardens provide access to fresh fruits and vegetables to communities who might otherwise not be able to purchase these healthy foods in their neighborhoods.

K. ROLE FOR INCREASED RESEARCH AND EVALUATION

> "If we want more evidence-based practice, we need more practice-based evidence.[407]"
>
> — Lawrence W. Green, Former Director, Office of Science & Extramural Research, Public Health Practice Program Office, Centers for Disease Control and Prevention (CDC)

There is a growing body of research on nutrition, physical activity, obesity, and obesity-related health outcomes and associated interventions. Public health officials, however, argue that more effort, money, and evaluation of obesity-prevention programs are needed in order to develop a set of evidence-based, proven interventions. There is also a need for research "on how to frame the obesity issue in order to gain support for public health interventions," according to scientists at Yale University's Rudd Center for Food Policy and Obesity. [408]

As part of the ***National Strategy to Combat Obesity***, researchers should:

- **Translate Research into Practice**
  - Too often researchers publish the results of their trials or interventions and walk away, thinking their job is done. For public health practitioners, however, simply having the results of a new study is not enough. Many of these studies demonstrate the "efficacy" of an intervention or medical treatment while failing to consider how "effective" they will be under real world circumstances. Researchers must do a better job of translating their work into practice, which means considering the full range of environmental and socioeconomic factors that influence people. Researchers must also address cost effectiveness and give public health officials a sense of per capita costs as they attempt to use these small controlled interventions on a community-wide level.

- **Challenge to the Research Community: 4 Key Questions**
  - TFAH has identified 4 key research questions that have not yet been adequately answered and could help provide breakthroughs in developing even more effective obesity prevention and control strategies.

1) Small Changes Make a Big Difference. There is increasing evidence that substantial weight loss is not needed to change health outcomes for obese individuals; in fact, as little as a 5 to 10 percent weight loss can reduce the risk factors for some diseases, including diabetes and some cardiovascular diseases. What are the small changes that work? How does a small change in weight or a small increase in physical activity affect an individual's health?

2) Redefine Success. Too many Americans, including health practitioners, have an unrealistic expectation about how much weight loss is enough to achieve meaningful change. The research community should redefine successful weight loss as it pertains to "controlling or reducing health risks and costs," instead of meeting some unrealistic standard set by society.[409] Researchers and clinicians should communicate the importance of making small changes in order to reduce health risks to the American public in order to counter the unrealistic views most obese individuals and their healthcare providers hold about weight loss.

3) The Cost of Obesity Prevention. What are the costs of various obesity interventions, particularly those that target communities and the environment? What are the per person costs associated with obesity interventions? What does it cost to bring an intervention to scale? Given the substantial investments in obesity prevention and control, researchers should work on developing standardized ways of reporting intervention costs in a

manner that is useful for program planners and policy makers.

4) The Relationships between Income and Culture and Obesity.
Researchers should further examine the economics of eating healthy, including food accessibility and affordability, and racial/ethnic, genetic, and cultural differences. Improved understanding in these areas will lead to better intervention efforts within targeted populations.

L. SPECIAL ISSUES

RACIAL AND ETHNIC DISPARITIES IN OBESITY

Data from several national surveys of U.S. adult, adolescent and child health, reveal large disparities in obesity rates among racial and ethnic minorities.[410,411,412]

Obesity Rates Among U.S. Adults, High School Students and Children by Racial / Ethnic Group

	White	Black	Hispanic
Adults[413]	29.7%	44.9%	36.9%*
High School Students[414]	10.8%	18.3%	16.6%
Children[415]	12.0%	23.5%	18.9%

*Source: Adult data is from 2003-2004 NHANES; high school data is from 2007 YRBSS; child data is from 2003-2004 NSCH. *Note: Under the Hispanic racial/ethnic group, the adult data is for Mexican-Americans while adolescent and child health data is for all Hispanics.*

High obesity rates, poor nutrition, and lack of physical activity are linked to many diseases, including diabetes, hypertension, cancer, and heart disease. These diseases are also found in higher rates among various members of racial-ethnic minorities compared with whites.[416] For instance, 22.6 percent of American Indians/Alaska Natives age 20 years and older suffer from diabetes as do 13.3 percent of African Americans, and 9.5 percent of Hispanics, compared to 8.7 percent of whites.[417]

The disparities in obesity rates are particularly worrisome for children given the numerous long-lasting poor health outcomes associated with childhood obesity. If the current trends continue, CDC estimates that one third of all children - and one-half of black and Hispanic children born in 2000 - will develop diabetes.[418]

In addition to experiencing higher rates of obesity and overweight than white Americans, African Americans and Hispanics are less likely to engage in healthy levels of physical activity.

Physical Inactivity Rates Among U.S. Adults by Sex and Race/Ethnicity[419]

	Male	Female
White	47.7%	50.4%
Black	54.7%	63.9%
Hispanic	58.1%	59.5%

Source: 2005 BRFSS data. Note: Physical inactivity is defined as adults who did not engage in at least 30 minutes a day of moderate-intensity activity on 5 or more days a week, or at least 20 minutes a day of vigorous-intensity activity on 3 or more days a week.

Percentage of U.S. High School Students and Children Not Participating in Recommended Levels of Physical Activity by Racial / Ethnic Group

	White	Black	Hispanic
High School Students	22.4%	32.0%	27.1%
Children	26.5%	30.9%	37.1%

Source: High school student data is from 2007 YRBSS; Child data is from 2003-2004 NSCH. For high school students, it is the percent that did not participate in 60 or more minutes of physical activity on any day.[420] For children, it is the percent that did not participate in physical activity that lasts at least 20 minutes and causes sweating and hard breathing on 3 or more days per week.[421]

Researchers cite a number of factors behind the disparities in obesity rates and physical inactivity levels. These include the following:

- Cultural perceptions of food, eating, physical activity and weight in racial and ethnic communities.[422]
- Physical environments that do not support physical activity, for instance the lack of parks and recreation centers.[423]
- Fast-food restaurants and convenience stores are much more accessible in low-income neighborhoods than chain supermarkets that offer a healthier array of foods including fresh fruits and vegetables.[424]
- Crime rates and perceptions of danger are higher in low-income neighborhoods.[425] Whether real or perceived, having unsafe neighborhoods means a decrease in children walking to school and playing outside and an increase of time spent in front of the television.[426]
- Low-income minority families may have little money left over to buy food, specifically healthy food, which is generally more expensive.[427]
- Longer working hours and commuting times among low-income parents may interfere with time spent buying and preparing food, and transporting children to after-school recreation activities.[428]
- Use of food as a means to deal with stress related to poverty, racial discrimination, violence and abuse.[429]
- Lack of health insurance limits minorities' access to health care providers.

According to the Henry J. Kaiser Family Foundation, racial and ethnic minorities are more likely to be poor than are whites. Over half of Hispanics, African Americans, and American Indians/Alaska Natives are poor or near poor, compared with 26 percent of whites and 33 percent of Asians and Pacific Islanders.[430] African Americans, Hispanics and American Indians/Alaska Natives are also more likely to be uninsured than are whites. Thirty-four percent of Hispanics, 32 percent of American Indians/Alaska Natives, and 21 percent of African Americans are uninsured compared to 13 percent of whites.[431]

Lack of health insurance translates into less access to health care providers and less chance of receiving a diagnosis of obesity. According to a 2006 study, whites are 3 times more likely to receive a diagnosis of obesity than blacks.[432] Given that research suggests that individuals who receive a diagnosis of overweight or obesity from their health care providers are more likely to lose weight than those who do not receive a diagnosis, health care providers in minority-communities should be trained and encouraged to speak with their patients about the health risks associated with obesity, poor nutrition and sedentary lifestyle.[433] Expanding minorities' access to health care and insurance should also be top priorities.

In addition to addressing access to health care, behavior change campaigns to modify eating habits and promote increased physical activity are needed to address some of the cultural issues behind the disparities in obesity. According to the National Institute of Environmental Health Sciences, government should also focus on changes to the built environment.[434] *(See Section 5: National Strategy to Combat Obesity for recommendations on the built environment.)*

Finally, more research, both into the factors behind and the interventions needed to address disparities in obesity, nutrition, and physical activity are needed. A major challenge for academic researchers is likely to be minority communities' distrust of medical research.[435] However, by engaging community members in the research process scientists can ensure that the evidence-base behind obesity disparities is expanded.

CHILDHOOD OBESITY IN RURAL AMERICA

Many Americans may associate living in a rural setting with a healthy lifestyle because it may offer opportunities for physical activity, consuming locally grown produce, access to open land and clean air that invite outdoor activities.[436] But recent studies have found that rural children are just as likely to be obese as urban children.[437,438,439] An analysis from the South Carolina Rural Health Research Center, using the 2003 National Survey on Children's Health data, found that:

- 31.5 percent of rural children aged 10 to 17 years old were overweight or obese, compared to 30.4 percent of urban children.
- 16.5 percent of rural children were obese, compared to 14.4 percent of urban children.
- Rural African-American children had the highest levels of overweight (44.1 percent) and obesity (26.3 percent) compared to all other racial and ethnic groups.
- Children living in the South were most likely to be overweight or obese (33.1 percent), followed by the Midwest (30.2 percent), the Northeast (29.5 percent), and the West (28.1 percent).
- As family income increased, the proportion of children who are overweight decreased significantly among rural and urban residents.
- 25.4 percent of rural children failed to meet physical activity recommendations.
- 40.7 percent of rural children did not participate in any after school sports teams or activities.
- Nearly half of rural children (48 percent) spent at least 2 hours a day with electronic entertainment media (TV viewing, video games, computer use).

Poverty rates are also quite high for rural children, 21 percent of whom live in poverty compared to 18 percent of urban children.[440] According to Save the Children, the leading independent organization promoting children's health and well-being, "children who live in poverty have a greater challenge engaging healthy lifestyle behaviors to support normal growth and development."[441] One challenge is lack of access to healthy foods, beverages, and meals. A 2007 study found more than 800 counties where rural residents live 10 miles from a large food retailer.[442] Another challenge is lack of access to opportunities and facilities for regular physical activity.[443] Poverty and food insecurity are only 2 factors behind the high rates of childhood obesity in rural areas. In addition, children living in rural areas struggle with a lack of resources and infrastructure to support physical activity and healthy eating.[444]

In order to address the problem of rural childhood obesity, in 2005 Save the Children launched the CHANGE (Creating Healthy, Active, and Nurturing Growing-up Environments) Program to increase rural children's access to daily physical activity and a healthy snack. The CHANGE Program operates in 5 rural regions of the U.S. where poverty rates are highest: Appalachia, the Southeast, the Mississippi River Delta, California's Central and San Bernardino Valley, and Native American reservations in the Southwest. During the 2007-2008 school year, the CHANGE program served nearly 7,000 children at 95 sites in 12 states. A large-scale community-based intervention is underway called the CHANGE Study, which is adapting and testing Tufts University's Shape Up Somerville model. The research will identify a package of interventions to reduce rural children's obesity risk and create environments that support healthy lifestyle behaviors. Results are expected in 2010.

BABY BOOMERS AND OBESITY

In 1946, 3.4 million babies were born -- a jump of 22 percent from the previous year, a trend that continued until 1964, creating a population bulge we call "baby boomers."[445] With the first round of baby boomers turning 60, there are questions about the overall health of the generation: Are they living longer and healthier lives? Is the health care system prepared to handle the boomer demographic bulge? Currently, scientists know the following about the baby boomers:

- Access to better food and health care has improved, but consumption of high fat foods and rates of obesity has increased, while rates of physical activity remain unchanged.[446]
- The number of obese Americans 55-64 has increased from 31 percent (1988-1994) to 39 percent (1999-2002).[447]
- A study published in 2005 found that members of the baby boom generation have a higher prevalence of obesity, and became obese at younger ages, than their predecessors in the silent generation.[448]
- A report from the Centers for Medicare and Medicaid Services predicts that unless major health changes occur, U.S. health care spending will reach $4.3 trillion (almost 20 percent of the gross domestic product) by 2017 as the first of the baby boomers begin to enroll in Medicare.[449]
- Sixty-two percent of 50-64 year-olds claim to have at least one of the following obesity-related chronic conditions: diabetes, heart disease, hypertension, cancer, arthritis, and high cholesterol.
- The highest prevalence of obesity occurs among women in their 50's -- fitting squarely into the baby boomer population.[450]
- Individuals obese in middle-age are projected to be twice as expensive to cover under Medicare as healthy weight people.[451]
- Data from a 2007 U.S. Health and Retirement Study shows people in their early to mid-50s reporting more health problems and a lower quality of life than previously described.[452]

While many studies point to startling statistics relating to increasing rates of obesity among the baby boomer population, other analysts are finding contradictory health trends among the boomer generation. For example, descriptions about health in the National Health Interview Survey show a higher percentage of those 50-64 reporting health as "very good" or "excellent" in 2004 than in 1994.[453] Although there is conflicting data, there is no argument that very soon Medicare will be inundated with a population bulge of boomers, many of whom are overweight or obese.

MENTAL HEALTH, STRESS AND OBESITY

There is growing evidence documenting the association between obesity and poor mental health. Researchers in the Adult and Community Health division of CDC analyzed 2006 BRFSS data and found that depression and anxiety are associated with obesity.[454] Adults currently or previously diagnosed with depression were 60 percent more likely to be obese, and those with anxiety disorders were 30 percent more likely to be obese than their non-depressed counterparts.[455] Adults with depression or anxiety were also less likely to engage in regular physical activity.[456]

A separate study analyzing data from more than 41,000 Americans who participated in the National Epidemiologic Survey on Alcohol and Related Conditions found that adults with high BMI ($BMI \geq 30$) were more likely to suffer from mood, anxiety, and personality disorders than people of normal weight ($18.5 \leq BMI < 25$).[457] Even individuals in the moderately overweight category ($25 \leq BMI < 30$) were at an elevated risk of anxiety disorders compared to those of normal weight.[458]

The significant associations between obesity and poor mental health has led CDC researchers to "suggest that public health interventions should address mental and physical health as a combined entity and that programs to simultaneously improve people's mental and physical health should be developed and implemented."[459]

Stress and Obesity

A 2007 study found a direct connection between stress and obesity. Scientists, performing studies on mice, found a chain of molecular events that link chronic stress with obesity. The study found that when stressed and non-stressed mice were fed the same, high-calorie diet, the stressed mice gained twice as much fat.[460] According to the study, the long-term combination of stress and a high fat/high sugar diet will lead to obesity and metabolic syndrome symptoms such as hypertension and glucose intolerance.[461] In addition to the traditional methods of weight loss, researchers suggested also including stress reduction therapy and a neuropeptide Y receptor inhibitor to induce fat "melting."[462]

BINGE EATING DISORDER AND OBESITY

Binge eating disorder is a classified psychiatric disorder which affects more than 7 million adults in the U.S.[463] Binge eating is a compulsive pattern of regular bingeing of unusually large amounts of food and complete loss of control over one's eating patterns.[464] While only 1 to 3 percent of the general population is affected by binge eating disorder, a much higher prevalence, 25 percent or more, has been reported by patients who are obese or seeking help for weight loss.[465] Because long-term weight management is more likely in an individual who is able to control eating patterns, physicians treating obese patients need to address the behavioral and psychological components of binge eating disorders.[466]

WHAT ARE OTHER COUNTRIES DOING?

According to the World Health Organization (WHO), globally there are some 1.6 billion adults (age 15 and older) who are overweight and 400 million adults who suffer from obesity; at least 20 million children under the age of 5 years were overweight globally in 2005.[467] WHO projects by 2015 that approximately 2.3 billion adults will be overweight and more than 700 million will be obese.[468]

The problem is not confined to the industrialized countries; in fact, overweight and obesity are on the rise in less developed countries, particularly in urban settings.

In response to the global obesity problem, in May 2004 WHO adopted the Global Strategy on Diet, Physical Activity and Health.[469] The Global Strategy has 4 main objectives:

1. Reduce risk factors for chronic diseases that stem from unhealthy diets and physical inactivity through public health actions.
2. Increase awareness and understanding of the influences of diet and physical activity on health and the positive impact of preventive interventions.
3. Develop, strengthen and implement global, regional, national policies and action plans to improve diets and increase physical activity that are sustainable, comprehensive and actively engage all sectors.
4. Monitor science and promote research on diet and physical activity.

Although the United States has failed to develop a national plan, WHO reports that there are 36 countries that have adopted national plans regarding diet and physical activity.[470] A searchable database of countries with national plans is available online at http://www.who.int/infobase/dpas/dpas.aspx.

United Kingdom

The British released a cross-sectoral, multi-agency obesity prevention plan in January 2008, "Healthy Weight, Healthy Lives: A Cross-Government Strategy for England", and set out an ambitious goal to be the first major nation to reverse the trend of increasing obesity and overweight among the population.[471] The plan's initial focus is on children and by 2020 the goal is to reduce the proportion of overweight and obese children to 2000 levels.

One of the critical components of the U.K.'s anti-obesity strategy is the national commitment to changing the physical and social environments in communities. The government is redesigning several communities into so-called "healthy towns" that feature bike lanes and facilities to encourage people to commute by bike and foot instead of car. A pilot project in the town of Peterborough led to a 13 percent reduction in car use and a 21 percent increase in walking.[472]

The strategy also includes public service announcements to educate parents about healthy eating habits and activity levels for children. Already, Britain has implemented tough new food-standards for school lunches and other school foods, in addition to requiring schoolchildren to engage in at least 2 hours of physical education and activity a week.[473] The government has also cracked down on food manufacturers and marketers, implementing new rules that limit exposure to fatty, sugary, food ads on children's television.[474]

According to Will Cavendish, Director of Health and Well-Being, United Kingdom Department of Health, there were 2 major factors that led the British government to draft and adopt the comprehensive obesity-prevention plan. First, in October 2007 the British government forecasting office published a report that looked at obesity trends in the United Kingdom and the associated economic costs. The report estimated that by 2050 at least 50 percent of adults and 25 percent of children under age 16 would be obese, which would cost society and business an estimated 49.9 billion pounds a year (or some $100 billion) if the epidemic were not brought under control through dramatic changes across British society.[475] The report's authors compared the problem to global climate change and noted that it would require a government-wide, multi-sectoral approach to solving the problem. "This really changed the environment in the U.K. from one where obesity was a passing interest to one in which obesity is a serious concern," Cavendish said at an April 2008 obesity conference in Washington, D.C.[476]

The second was a national listening tour the newly elected prime minister, Gordon Brown, carried out soon after assuming office in 2007. The tour was to focus on health issues and what stood out, according to Cavendish, was that parents' number one concern was childhood obesity. These 2 factors -- a strong, evidence-based call to action and the political leadership and buy-in -- were enough to get all levels of government working together, according to Cavendish. The national government also put resources behind the national plan: 372 million pounds, or $726 million over the next 3 years.[477]

France

The French government released a national childhood obesity plan in January 2004 that focuses both on primary prevention -- with recommendations for families, teachers, and communities, and secondary prevention -- with recommendations for health professionals.

The French plan also focuses on the importance of social and physical changes to the environment. According to Michel Chauliac, Coordinator, National Nutrition and Health Program, French Ministry of Health, the overall goal is to improve health, with nutrition and physical activity seen as critical components of health. He says the French government wants consumers to make informed choices but realizes that choice is limited by the environment. "So the goal is to improve the nutritional environment."[478]

To improve the nutritional environment, France has:

- Banned vending machines in all schools;
- Mandated nutritional qualities of school meals;
- Incorporated health messages on all manufactured foods and beverages; and
- Considered a possible ban on TV advertisements for children.

The plan is already showing promising results according to French researchers who reported the findings from 2 different studies that showed a leveling off of childhood obesity rates.[479]

APPENDIX A

Methodology for Obesity and Other Rates Using BRFSS

Data for this analysis was obtained from the Behavioral Risk Factor Surveillance System (BRFSS) dataset (publicly available on the web at www.cdc.gov/brfss). The analysis was conducted by Daniel Eisenberg, PhD, and Edward N. Okeke, MBBS, of the Department of Health Management and Policy of the University of Michigan School of Public Health.

BRFSS is an annual cross-sectional survey designed to measure behavioral risk factors in the adult population (18 years of age or older) living in households. Data are collected from a random sample of adults (one per household) through a system of telephone surveys. The BRFSS currently includes data from 50 states, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands. The most recent data available was 2007.

To account for the complex nature of the survey design and obtain estimates accurately representative at the state level, researchers used sample weights provided by the CDC in the dataset. The main purpose of weighting is to reduce bias in population estimates by up-weighting population sub-groups that are under represented and down-weighting those that are over represented in the sample. Also, estimation of variance (which indicates precision and is used in calculating confidence intervals), needs to take into account the fact that the elements in the sample will generally not be statistically independent as a result of the multistage sampling design.

We specified the sampling plan to STATA[480] using the svyset command and the following set of weights: sample weight variable (FINALWT), first-stage stratification variable (STSTR), and primary sampling unit variable (PSU). Omission of the stratification variable in STATA implies no stratification of PSUs prior to first-stage sampling. Omission of the primary sampling unit variable implies one-stage sampling of elements and no clustering of sampled elements. Omission of the sample weight implies equally weighted sample elements. Mean proportions for each variable were estimated using the svy: proportion command.

Variables of interest included BMI, physical inactivity, asthma, smoking, high blood pressure and diabetes. BMI was calculated by dividing self-reported weight in kilograms by the square of self-reported height in metres. Obesity was then defined as calculated BMI greater than or equal to 30 and overweight was defined as calculated BMI greater than or equal to 25 but less than 30. For the physical inactivity variable a binary indicator equal to one was created for adults who reported not engaging in physical activity or exercise during the previous thirty days other than their regular job. For diabetes, researchers created a binary variable equal to one if the respondent reported ever being told by a doctor that he/she had diabetes and for smoking we created a variable equal to 1 if the respondent self-identified as a current smoker. For asthma, all respondents who reported ever being told that they had asthma were coded as 1 and 0 otherwise.

The hypertension variable[481] had to be treated differently because of changes in how the question was asked. Prior to 2003 the question asked was "Have you ever been told by a doctor, nurse or other health professional that you have high blood pressure?" Respondents could answer "yes", "no", or "don't know/not sure", or could refuse to

answer. In 2003 the question was modified so that respondents who said "yes" were asked a follow-up question: "Was this only when you were pregnant?" Respondents answering "yes" to the follow-up question were coded separately. Starting in 2005, yet another category was created: for borderline or pre-hypertensive respondents, bringing the total number of categories to 6 (from 4 in 2001). See Figure 1 below for a summary of the changes.

Figure 1: Summary of Changes in Hypertension Variable

2001	2003	2005
Yes	Yes	Yes
No	No	No
-	**Yes (but female told only during pregnancy)**	**Yes (but female told only during pregnancy)**
	-	**Borderline/Pre-hypertensive**
Don't know/Not sure	Don't know/Not sure	Don't know/Not sure
Refused	Refused	Refused

In order to be able to compare across different years, researchers made several assumptions:

1. Researchers assumed that respondents falling in the "yes (but female told only during pregnancy)" category would have been classified as a "yes" in 2001. This is plausible given that the only difference between 2001 and later years is that if the respondent answered "yes" to the main question, the follow-up question was not asked.
2. For respondents classified as "borderline/pre-hypertensive", researchers made 2 assumptions: first they assumed that in previous years respondents would have been coded as a "yes" and then they assumed that respondents would have been coded as a "no". Researchers ran calculations under both assumptions and the qualitative conclusions were similar.[482] For comparison we also present results calculated only across years in which the question format stayed the same. TFAH used the more conservative estimates in the report.

For all variables researchers calculated rolling 3 year averages, first by averaging data from 2004-2006 and then by averaging data from 2005-2007 (after merging data from the relevant time period).[483] Researchers reported mean proportions for each 3-year period as well as standard errors and 95% confidence intervals for all variables of interest. In addition they carried out a Pearson statistical test of proportions and reported which states experienced a significant increase or decrease (significant at the .05 level) between time periods.

The various sample sizes are included in the spreadsheet. Note: Guam is excluded from the analysis and this is reflected in the sample size. We also excluded all observations with missing values from the analysis.[484]

APPENDIX B

Methodology for State Obesity Plan Review

TFAH researchers searched the public health department and governor's website of each state and D.C. for physical activity, nutrition, and obesity plans. The search took place in April 2008. Several states, including Idaho, Indiana, Kansas, Tennessee, and D.C., had an overall health promotion plan which included a section on obesity, but these were not counted as strategic plans to combat obesity. Virginia and D.C. had state plans aimed at the prevention of obesity only among children, which TFAH counted as strategic plans to combat obesity.

If a plan was not available online, TFAH researchers emailed the most appropriate person or department in that state to inquire whether or not the state had a strategic plan to prevent and treat obesity. States that did not respond to inquiries via email were contacted via the National Association of Chronic Disease Directors. In this way, TFAH was able to confirm the status of each state's obesity plan.

Researchers read and evaluated each state plan based on the following criteria:

Does the state obesity plan involve multiple state agencies?

Does the plan specifically assign roles & responsibilities to state agencies?

Does the plan contain clear and measurable objectives?

Are the plan's objectives related to reducing rates of obesity?

Does the plan link funding to objectives?

Does the plan include private sector (business, industry) and community groups?

Does the plan include provisions regarding a healthier state workforce?

Does the plan have a system for evaluation and review?

Overview of Federal Programs That Impact Obesity

APPENDIX C

The following chart contains an overview the cabinet-level agencies and the federal programs within which impact obesity:

U.S. Department of Agriculture (USDA)	USDA is responsible for a range of food and nutrition programs that impact obesity, including: ■ Nutritional advice and guidance. ■ Nutrition assistance programs. ■ Food and obesity education campaigns. ■ Distribution of food products to schools. ■ Oversight and protection of the nation's agricultural and dairy markets.
AGENCY	**PROGRAM/ INITIATIVES**
Food and Nutrition Services (FNS)	USDA's **Division of Food, Nutrition, and Consumer Services (FNCS)** is central to obesity policies. FNCS is one of 7 agencies in USDA, and it includes 2 departments relating to obesity: **Food and Nutrition Services (FNS)** and the **Center for Nutrition Policy and Promotion (CNPP)**. FNS administers nutrition assistance programs to needy and eligible populations through a variety of food assistance programs and comprehensive nutrition education efforts.[485]
Food and Nutrition Services (FNS)	The **Food Stamp Program** served approximately 26.5 million people in FY 2007 at a cost of $34.8 billion.
Food and Nutrition Services (FNS)	The **National School Lunch Program** is a federally assisted meal program that serves free or low-cost lunches to low-income children throughout the nation. It serves lunch to over 30.1 million children each day in over 101,000 public and nonprofit private schools and residential child care institutions.[486] There are nutritional requirements -- such as offering milk with different fat contents -- that are aligned with the U.S. Dietary Guidelines, and these will be updated to reflect recent changes to the Guidelines. Schools are reimbursed between $2.07 and $2.47 for reduced price and free lunches, respectively.[487] In FY 2006, the federal government spent $8.2 billion on the lunch program.[488] A similar program serves subsidized school breakfasts.
Food and Nutrition Services (FNS)	The **Fresh Fruit & Vegetable Program (FFVP)** provides fresh and dried fruits and fresh vegetables throughout the school day. Participating schools are required to publicize the availability of the fresh fruit, dried fruits and fresh vegetables to the student body. One of the program's goals is to teach students about the importance of good nutrition, including eating fresh fruit and vegetables. The reauthorized Farm Bill provides for a nationwide expansion of the Fresh Fruit and Vegetable Program, and requires state agencies to reach out to schools with significant numbers of children eligible for free or reduced price meals to inform them of their eligibility for the program. The bill also authorizes mandatory funding of $40 million for the program in 2008; $65 million in 2009; $101 million in 2010; $150 million in 2011, and $150 million indexed for inflation in 2012.
Food and Nutrition Services (FNS)	The **Child and Adult Care Food Program (CACFP)** provides meals and snacks to 2.9 million low-income children in day care and 86,000 adults who receive care in nonresidential adult day care centers.[489] Reimbursement for meals is based upon income.
Food and Nutrition Services (FNS)	The **Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)** is a federal grant program that provides supplemental food, counseling, and nutritional education for low-income pregnant or postpartum women and children up to age 5.[490] Fifty-four percent of all U.S. infants received WIC benefits in 2000, as did 25 percent of U.S. children ages 1-4.[491] WIC food packages also provide supplements for the children's mothers. In FY 2007, the federal government spent $5.5 billion on WIC and served about 8.2 million Americans, who on average received about $39 a month for food purchases.[492]

AGENCY	PROGRAM/ INITIATIVES
Food and Nutrition Services (FNS)	The **WIC Farmers' Market Nutrition Program (FMNP)** provides fresh, unprepared, locally grown fruits and vegetables to WIC participants. Established by Congress in 1992, the program served 2.5 million WIC participants in FY 2006 who were able to buy fresh produce from the 14,259 farmers, 2,896 farmers' markets and 2,136 roadside stands that were authorized to accept FMNP coupons.[493] The program generated over $22.4 million in revenues for participating farmers in FY 2006.[494]
Food and Nutrition Services (FNS)	The **Seniors Farmers' Market Nutrition Program (SFMNP)** is another means by which USDA provides low-income citizens, in this case senior citizens, with coupons to buy fresh produce at local participating farmers' markets.[495] In FY 2007, 46 states and federally recognized tribal agencies received grants to operate the SFMNP program. The program received $16 million in FY 2007 and served over 800,000 needy seniors.[496] The new Farm Bill provides $20.6 million in mandatory funding each year for the program over the next 5 years.
Food and Nutrition Services (FNS)	The **Commodity Supplemental Food Program (CSFP)** targets low-income pregnant and breastfeeding women, other new mothers up to one year postpartum, infants, children up to age 6, and elderly people at least 60 years of age by supplementing their diets with USDA commodity foods. The population served is very similar to the WIC program, but CSFP also serves low-income senior citizens and provides food instead of the food vouchers WIC participants receive.[497] In FY 2007, an average of more than 466,000 people participated in CSFP each month, including just under 433,000 elderly people and more than 33,000 women, infants, and children.[498] For FY 2008, Congress appropriated $139.7 million for CSFP.[499] The President's budget would zero out the program in FY 2009.
Food and Nutrition Services (FNS)	The **Center for Nutrition Policy and Promotion (CNPP)** develops nutritional education information and works to disseminate research findings through outreach materials to targeted populations.[500] Dietary guidelines and the Food Pyramid are CNPP's notable initiatives; both were updated in 2005.

U.S. Department of Defense (DOD)	The Department of Defense is responsible for national security.
AGENCY	**PROGRAM/INITIATIVES**
	To combat the growing obesity problem among U.S. servicemen and women, each of the armed services has developed programs to promote fitness and health: the Army has **Weigh to Stay**; the Navy and Marine Corps have **ShipShape**; the Air Force has **Fit to Fight**. These programs use nutrition and fitness counseling to move military personnel and their families toward healthier food choices, exercise habits, and lifestyles.
Military Health System	The U.S. military healthcare system, TRICARE, has a healthy choices initiative called HEALTH (Healthy Eating and Active Living in TRICARE Households) that helps participants reach their desired weight and teaches them how to live a healthier lifestyle. TRICARE members who join HEALTH receive information on healthy meal planning, create a personalized exercise program, and work with a phone counselor and primary care manager to determine individual weight loss goals and how to maintain a healthy weight.[501]
Department of Defense Education Activity (DoDEA)	The **Department of Defense Education Activity (DoDEA)** manages the education programs for children of U.S. military personnel and civilian personnel who are stationed at bases at home and abroad. The 199-school system employees some 8,700 teachers and reaches 88,000 students. The system is set up to handle the needs of these children who change schools frequently due to their parents' assignments. To maintain continuity, the school system teaches from a uniform curriculum and standards. Included in the DoDEA curriculum are lessons on physical activity, nutrition and physical education.[502]

U.S. Department of Education	The Department of Education runs federal education programs and implements and collects data on federal education policies such as No Child Left Behind. The high profile nature of the Department gives the secretary of education the ability to draw national attention to key issues, for instance, childhood obesity and physical inactivity.
AGENCY	**PROGRAM/INITIATIVES**
Office of Safe and Drug-Free Schools (OSDFS)	**Carol M. White Physical Education Program** provides competitive grants to schools and community-based organizations to implement and expand quality PE programs for students in kindergarten through grade 12. The President's budget proposes to zero out this program, which was funded at $75.6 million in FY 2008.

U.S. Environmental Protection Agency (EPA)	The EPA's mission is to protect human health and the environment.
AGENCY	**PROGRAM/INITIATIVES**
	The **EPA Smart Growth Program** helps state and local governments develop communities that are environmentally friendly, preserve open space and historic buildings, and encourage the use of public transportation or active commuting (biking or walking) by putting amenities such as restaurants and businesses near homes. The Smart Growth Program also works on the clean-up of contaminated properties, so-called Brownfields, to ensure that the local residents are part of the economic redevelopment process for these sites. The president's FY 2009 budget proposes $1.191 billion for Healthy Communities and Ecosystems, of which the Smart Growth Program is a small component. That is $36.4 million less than the FY 2008 enacted budget.

U.S. Federal Trade Commission (FTC)	The FTC deals with both consumer protection and fair business competition.
AGENCY	**PROGRAM/INITIATIVES**
	In May 2006, FTC and HHS released a report "Perspectives on Marketing, Self-Regulation, & Childhood Obesity: A Report on a Joint Workshop of the Federal Trade Commission" recommending concrete steps that industry can take to change their marketing and other practices to make progress against childhood obesity. While the report was an important step forward, all the recommendations detailed in the report are voluntary. How many of them will actually be implemented by the food, media and entertainment industries remains to be seen. FTC and HHS have said they will closely monitor industry progress in implementing the recommendations set forth in the report, and issue a follow-up report assessing the progress that industry has made.[503]

U.S. Department of Health and Human Services (HHS)	As the nation's principal agency for protecting the health of all Americans and providing essential human services, HHS has a key role to play in the national effort to combat obesity.
AGENCY	**INITIATIVES/PROGRAMS**
Administration on Aging (AOA)	AOA launched **You Can! Steps to Healthier Aging** in September 2004. The goal of the program was to promote physical activity and sound nutrition in elderly populations. By September 30, 2006 when the campaign ended, a total of more than 2,800 organizations had made a commitment to reach 4.2 million older adults with information and 436,000 with programs.[504]
Centers for Disease Control and Prevention	The **National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP)** at the CDC has been leading the agency's obesity-related initiatives. CDC manages a wide range of programs aimed at combating obesity including state, community, school, and employer-based initiatives, as well as marketing campaigns. A number of CDC's key programs are discussed below. Four of CDC's major obesity-related initiatives are grant-based programs -- **Preventive Health and Health Services Block Grant, Division of Adolescent and School Health (DASH), Division of Nutrition, Physical Activity and Obesity (DNPAO),** and **Division of Adult and Community Health (DACH).**
Centers for Disease Control and Prevention	The **Preventive Health and Health Services Block Grant (PHHSBG)** awarded grants to all 50 states and the District of Columbia in FY 2007. The grants are used "to fill funding gaps in programs that deal with leading causes of death and disability," as well as to enable states to respond rapidly to public health emergencies, such as a foodborne disease outbreak.[505] President Bush's FY 2009 budget proposal recommended zeroing out the PHHSBG, which was funded at $97,270,000 in FY 2008.
Centers for Disease Control and Prevention	The **Division of Nutrition, Physical Activity, and Obesity (DNPAO)** funds programs that use various nutrition and physical activity intervention strategies to address obesity and other chronic diseases. Under the new 5-year grant cycle that began in June 2008, 23 states received funding, 5 fewer than the previous grant cycle. President Bush's FY 2009 budget proposal recommended funding DNPAO at $42,018,000, just slightly below the FY 2008 amount of $ 42,191,000.
Centers for Disease Control and Prevention	The **Division of Adolescent and School Health (DASH)** seeks to prevent health adverse behavior in school-aged children and young adults. DASH's Coordinated School Health Program provides funding for 22 states and one tribe to develop coordinated school health programs. The President's FY 2009 budget proposal recommended $13,553,000 for DASH's Coordinated School Health Program, which deals specifically with nutrition, physical activity, and tobacco slightly below the FY 2008 level of $13,609,000.
Centers for Disease Control and Prevention	The **Division of Adult and Community Health (DACH)** is charged with providing crosscutting chronic disease and health promotion expertise and support to CDC's National Center for Chronic Disease Prevention and Health Promotion. It oversees 2 crucial programs in the fight to prevent and treat obesity: the **Steps Program** and the **Pioneering Healthier Communities Program**. **The Steps Program** funds communities across the country to show how local initiatives can reduce the burden of chronic diseases such as obesity, diabetes, and asthma by encouraging people to be more physically active, eat a healthy diet, and not use tobacco.[506] The President's FY 2009 budget proposes a $9,617,000 cut to the Steps Program, which was funded at $25,158,000 in FY 2008 and $42,904,000 in FY 2007. **The Pioneering Healthier Communities** program, a partnership with the CDC and the YMCA of the USA, addresses physical inactivity, poor nutrition, obesity and related chronic diseases in communities across our nation. Pioneering Healthier Communities impacts 20 new communities each year; over 60 communities have been reached since FY 2005. The President's FY 2009 budget proposal zeroes out the program, a decrease of $2.9 million from FY 2008.
Centers for Disease Control and Prevention	**The National Center for Health Statistics (NCHS)** is the nation's health statistics agency. NCHS data is used to inform public health and health policy.[507] NCHS uses a variety of approaches to collect data including birth and death records, medical records, interview surveys, and direct physical exams and laboratory testing. As the Institute of Medicine has noted, "surveillance is essential to maximize the probability of success and efficiency of effort," in the fight against obesity.[508] As such NCHS should be a key component of the federal government's National Strategy to Combat Obesity. The President's FY 2009 budget proposes $124,701,000 for health statistics, an increase of $11,065,000 over the FY 2008 level of $113,636, 000.

AGENCY	INITIATIVES/PROGRAMS
Centers for Disease Control and Prevention	The **Behavioral Risk Factor Surveillance System (BRFSS)** is the only consistent source of state and community level data on overweight and obesity available to state and local health departments. In addition to overweight and obesity data, BRFSS enables the analysis of related health risks, such as diabetes, physical inactivity, and hypertension, as demonstrated by this report. The Presidents FY 2009 budget proposes $7,269,000 for the BRFSS, a decrease from $7,299,000 from FY 2008.
Centers for Disease Control and Prevention	The **Healthier Worksite Initiative** is a website CDC developed for its own employees "with the vision of making CDC a work site where 'healthy choices are easy choices,' and sharing the 'lessons learned' with other federal agencies."[509] Resources including program design tools and information, policies, and toolkits are available online at http://www.cdc.gov/hwi.
Centers for Medicare and Medicaid Services (CMS)	Medicare and Medicaid pay over half of the nation's bill to treat obesity-related conditions -- $39 billion out of a total of $75 billion in direct medical costs each year. CMS, through its decisions regarding coverage of obesity prevention and treatment services, can dramatically affect the course of the obesity epidemic.
Food and Drug Administration (FDA)	In March 2004, the Food and Drug Administration released the Calories Count report, the result of an interagency working group on obesity.[510] The report includes recommendations to strengthen food labeling, to educate consumers about maintaining a healthy diet and weight and to encourage restaurants to provide calorie and nutrition information. It also recommends increasing enforcement to ensure food labels accurately portray serving size, revising and reissuing guidance on developing obesity drugs and strengthening coordinated scientific research to reduce obesity and to develop foods that are healthier and low in calories. In 2007, FDA partnered with the Cartoon Network to launch Spot the Block, a media campaign targeted at 'tweens' that seeks to educate children on how to better use the Nutrition Facts label. The program's objective is to "combat childhood obesity by empowering 'tweens' to look for and use the Nutrition Facts on the food label."[511] The FDA also reviews drugs and medical devices that are used for medical management of obesity.
Health Resources and Services Administration (HRSA)	HRSA seeks to expand health care for all Americans and is structured to focus on specific populations. **The Maternal and Child Health Bureau (MCHB)** coordinates several obesity-related programs, including one component of the Bright Futures initiative and the National Adolescent Health Information Center (NAHIC). The President's FY 2009 budget proposes to cut HRSA's total program level by almost $1 billion, from $6.916 billion in FY 2008, to $5.921 billion.[512] That includes a $39 million reduction in maternal and child health programs, from $849 million in FY 2008 to $809 million in FY 2009.
Indian Health Service (IHS)	The mission of the Indian Health Service (IHS) is "to elevate the health status of American Indian and Alaska Natives (AI/AN) to the highest possible level."[513] Large disparities remain between the general U.S. population and the American Indian/ Native Alaskan population. For instance, one in 5 American Indian/ Alaskan Native children are overweight compared to one in 5 children in the general U.S. population. Many of the obesity prevention initiatives are funded via IHS's **Hospitals and Health Clinics'** public and community health initiatives, such as Health Promotion and Disease Prevention, which counts obesity and physical activity and exercise as 2 of its primary prevention focus areas, and the Chronic Care Initiative. The President's FY 2009 proposed budget for Hospitals and Health Clinics seeks $1.522 billion, an increase of $37.9 million from FY 2008.[514]
National Institutes of Health (NIH)	In FY 2007, NIH funded $661 million in obesity research. The complexity of obesity -- both its causes and treatments -- led to the creation of the **Obesity Research Task Force**, which implements the Strategic Plan for NIH Obesity Research. The Plan focuses on 4 areas: lifestyle modification; medical approaches; linkages between obesity and health, specifically the detection of biomarkers and other molecular factors that serve as early warning signs for the development of obesity-related health problems; and health disparities among certain racial, ethnic, and socioeconomic populations.[515] The Plan coordinates research across all 25 NIH Institutes, Centers, and Offices. Research studies examine clinical and population-based outcomes across the short-, intermediate-, and the long-term. Given the complexity of obesity research, it is difficult to gauge how much money NIH spends on obesity-related research each year. However, on obesity research alone, NIH's FY 2009 professional budget estimate is $658 million, $2 million less than in FY 2008.

AGENCY	INITIATIVES/PROGRAMS
National Institutes of Health (NIH)	**We Can! (Ways to Enhance Children's Activity & Nutrition)** is a national program designed as a one-stop resource for parents and caregivers interested in practical tools to help children 8-13 years old stay at a healthy weight. Tips and fun activities focus on three critical behaviors: improved food choices, increased physical activity and reduced screen time. The program is a collaboration of 4 Institutes of the National Institutes of Health (NIH): the National Heart, Lung, and Blood Institute (NHLBI), the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), the National Institute of Child Health and Human Development (NICHD) and the National Cancer Institute (NCI).
National Institutes of Health (NIH)	**Media-Smart Youth: Eat, Think, and Be Active!** is an interactive after-school education program for young people ages 11 to 13. It is designed to help teach them about the complex media world around them, and how it can affect their health -- especially in the areas of nutrition and physical activity. This program was created by the National Institute of Child Health and Human Development (NICHD).
Office of Disease Prevention and Health Promotion	The **Office of Disease Prevention and Health Promotion (ODPHP)** develops and coordinates a wide range of national disease prevention and health promotion strategies. Together with the U.S. Department of Agriculture (USDA), ODPHP publishes the Dietary Guidelines for Americans every 5 years. The Office is also responsible for setting national health goals via the Healthy People reports. Issued every 10 years, ODPHP is currently in the early phases of developing Healthy People 2020.
Office of the Surgeon General	The Surgeon General is America's preeminent health educator, providing leadership and management of public health and advocating for scientifically credible and healthy lifestyle directions.[516] The position has been filled by Acting Surgeon General Steven K. Galson since 2006, when President Bush failed to renew the 4-year term of then Surgeon General Richard Carmona. Acting Surgeon General Galson has made childhood obesity a top prevention priority of his tenure. In November 2007, his office launched the "Childhood Overweight and Obesity Prevention Initiative, Healthy Youth for a Healthy Future," which targets overweight and obesity prevention and promotes healthy lifestyles for children.[517] The initiative includes checklists for parents and caregivers, schools and teachers, and communities to help children be physically active and support healthy eating habits.
Office of Women's Health (OWH)	OWH sponsors a number of initiatives related to obesity prevention and control, including the **WOMAN Challenge**, or **W**omen and girls **O**ut **M**oving **A**cross the **N**ation. The WOMAN Challenge is a free 8-week challenge that encourages women and girls to walk 10,000 steps or get 30 minutes of moderate exercise every day.[518] Now in its ninth year, The WOMAN Challenge is launched in May to coincide with National Women's Health Week. The president's FY 2009 proposed budget for OWH is $28 million, a $3 million decrease from FY 2008.
President's Council on Physical Fitness and Sports (PCPFS)	The President's Council on Physical Fitness and Sports was established in 1956 by President Dwight D. Eisenhower after a study found American children less fit than European youths. The Council, which is a group of 20 members appointed to serve at the pleasure of the president, advises the president through the Secretary of Health and Human Services about physical activity, sports and overall fitness. The Council also recommends programs, supports health initiatives, and collaborates with public and private sector groups to emphasize the importance of regular physical activity and fitness, for Americans of all ages and abilities. PCPFS is housed at HHS and advises the President and Secretary of HHS on ways to encourage more Americans to become physically fit and active. The PCPFS communicates with the public on the importance of exercise; increases physical activity participation and opportunities by encouraging related efforts in schools and communities; collaborates with business, industry, government and labor organizations on innovative programs to reduce the financial and health care costs associated with physical inactivity; and cooperates with medical, dental and other allied health care professional associations to encourage patient counseling on physical activity and fitness habits and practices.

U.S. Department of Housing and Urban Development (HUD)	HUD's mission is to increase home ownership, support community development and increase access to affordable housing free from discrimination. As part of its mission, HUD works to improve the living environment of low-income Americans.
AGENCY	**PROGRAM/INITIATIVES**
	The **Community Development Block Grant** (CDBG) program provides communities with resources to address a wide range of unique community development needs. Grants can be used to develop viable communities by providing decent housing, a suitable living environment, and opportunities to expand economic opportunities. CDBG funds can be used for park and recreation projects which can affect physical activity. The president's FY 2009 budget contains $3 billion for the CDBG program, a $866 million decrease from FY 2008.

U.S. Department of the Interior	The Department of the Interior is the nation's principal conservation agency responsible for protecting federal lands and managing natural resources. Parks and open spaces provide opportunities for Americans to engage in physical activity.
AGENCY	**PROGRAM/INITIATIVES**
Bureau of Land Management	The **Take it Outside: Children and Nature Initiative** is a new initiative to "to encourage more children and their families to spend more time outdoors on the public lands; to improve the overall health of our Nation's children; and to promote stewardship of the public lands."[519] The budget for this program is minimal at $225,000.
National Parks Service	The **National Parks Service** undertook a review of its assets and resources in 2006 in order to address the role NPS can play in promoting and providing healthy recreational activities. The report "Health, Recreation and Our National Parks" details the many ways NPS can offer opportunities for Americans' to improve their overall fitness and health[520] NPS has developed a number of programs and initiatives to foster healthy living, several of which are detailed below. The president's FY 2009 budget requests $2.1 billion, an increase of $160.9 million from FY 2008.
National Parks Service	The **Land and Water Conservation Fund (LWCF)'s** goal is to "meet state and locally identified public outdoor recreation resources needs to strengthen the health and vitality of the American People."[521] The federal program awards grant monies to state and local governments and solicits matching dollar amounts from state and local governments, as well as the private sector, to acquire land for recreation, develop new recreation facilities, and improve existing facilities. In FY 2008, LWCF awarded $23 million in grants.[522] However, the president's FY 2009 budget zeroes out these funds for LWCF State Assistance grants. Instead, revenues from the management of the Outer Continental Shelf will be used for Stateside LWCF Grants. FY 2009 is the first year of this new arrangement and the president's budget request is for $6.3 billion.
National Parks Service	**Healthy Parks/ Healthy Living** "is a park-based program intended to promote the daily recreational benefits inherent in urban national parks and encourage local park visitors to participate in healthy activities and outdoor recreational opportunities in a manner that supports the agency's mission of stewardship."[523]
National Parks Service	The **Rivers, Trails, and Conservation Assistance Program** helps local groups plan and develop new trails, greenways, and open space that are close to home and encourage regular physical activity.[524] The program offers technical assistance to community groups, nonprofits and local, state, and federal government agencies to conserve rivers, preserve open space, and develop trails and greenways. FY 2007 funding for this initiative was about $8.3 million. The president's FY 2009 budget reduces this program by $314,000.

Office of Personnel and Management	OPM is responsible for building a high-quality and diverse federal workforce, based on merit system principles. This is accomplished by recruiting citizens to federal service, connecting job applicants with federal agencies and departments, and administering retirement, health benefits, long-term care, and life insurance programs.
AGENCY	**PROGRAM/INITIATIVES**
	In an effort to reduce the demands on the health care system and associated costs, OPM manages the **HealthierFeds** initiative, which educates the federal civilian workforce and retirees about healthy living and best health care strategies. In partnership with **Federal Employees Health Benefits Program (FEHB)** carriers, OPM runs a web site that offers practical information on nutrition, physical activity, and prevention (http://www.healthierfeds.opm.gov/) The FEHB, like Medicare and Medicaid, is a federal program that is bearing the ever-increasing health care costs associated with obesity. In FY 2009 the program is expected to cover over 8 million federal employees, annuitants, and their dependents and pay out benefits of $37.4 billion, an increase of $2.3 billion from FY 2008.

According to a 2003 study, every additional 30-minute time period a person spends in a car each day translates into a 3 percent greater chance of being obese.[525]

U.S. Department of Transportation (DOT)	The Department of Transportation's mission is to "serve the United States by ensuring a fast, safe, efficient, accessible and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future."[526]
AGENCY	**PROGRAM/INITIATIVES**
Federal Highway Administration	**Safe Routes to School** provides funding for programs and projects such as building safer street crossings and establishing programs that encourage children and their parents to walk and bicycle safely to school. The president's FY 2009 budget request for this program is $183 million, up $33 million from FY 2008.
Federal Highway Administration	The **Pedestrian Road Show** is a toolkit DOT put together to help communities identify and address their pedestrian safety problems and build more walk-able communities.
Federal Highway Administration	**Transportation Enhancements Activities** are federally funded, community-based projects that expand travel choices and enhance the transportation experience by improving the cultural, historic, aesthetic and environmental aspects of our transportation infrastructure.[527] The federal government reimburses up to 80 percent of the cost of approved TE programs. There are 12 eligible activities that qualify for the TE program. Of these 12 there are several that could arguably promote physical activity: ■ Provision of pedestrian and bicycle facilities; ■ Provision of pedestrian and bicycle safety and education activities; ■ Acquisition of scenic or historic easements and sites; ■ Rehabilitation and operation of historic transportation buildings, structures, or facilities; and ■ Conversion of abandoned railway corridors to trails. The president's FY 2009 budget request for this program is $660 million.
Federal Highway Administration	**The Non-motorized Transportation Pilot Program**, part of the 2005 Transportation Bill, established programs in 4 U.S. communities (Columbia, Missouri; Marin County, California; Minneapolis-St. Paul, Minnesota; and Sheboygan County, Wisconsin.) to develop a "network of non-motorized transportation infrastructure facilities, including sidewalks, bicycle lanes, and pedestrian and bicycle trails, that connect directly with transit stations, schools, residences, businesses, recreation areas, and other community activity centers."[528] Each community can receive $6.25 million in grant money each year for this project. Funding has remained constant at $25 million per fiscal year since FY2006.[529]

U.S. Department of Treasury	The Treasury Department is responsible for promoting economic prosperity and ensuring the financial security of the United States. Among the Treasury Department's responsibilities is the regulation of financial markets and tax collection.
AGENCY	**PROGRAM/INITIATIVES**
	In the area of tax collection and the tax code, the Department of Treasury is able to issue rulings clarifying tax deductions. In fact, in 2002 the Treasury Department issued Revenue Ruling 2002-19 which changed the philosophy of the Internal Revenue Service by allowing weight-loss program deductions for obesity and as a treatment for hypertension.[530] The Treasury Department did not go as far as to extend the tax deduction for exercise programs that are recommended by physicians to foster weight loss among obese and overweight patients.

The VA serves over 6 million veterans; nearly 70 percent are overweight, of whom approximately 30 percent are obese.[531]

U.S. Department of Veterans Affairs (VA)	The U.S. Department of Veterans Affairs provides patient care and federal benefits to veterans and their dependents.
AGENCY	**PROGRAM/INITIATIVES**
	The VA together with HHS implements **HealthierUS Veterans**, a program to educate veterans about the health risks of obesity and diabetes. One component of the HealthierUS Veterans initiative is the **MOVE! (Managing Overweight/Obesity for Veterans Everywhere) Program**. The MOVE! Program is a weight management and physical activity initiative designed for veterans enrolled in the VA health care system who want assistance with managing their weight. The program relies on evidence-based methods that focus on behavior, nutrition, and physical activity. VA primary care providers give each veteran enrolled in MOVE! a pedometer, a brochure that explains how to use the pedometer, and an exercise prescription for recommended physical activity, such as a number of daily steps to walk. All providers have been encouraged to give their patients similar activity guidance[532]

References

1 U.S. Centers for Disease Control and Prevention. "Overweight and Obesity - Introduction." U.S. Department of Health and Human Services. http://www.cdc.gov/nccdphp/dnpa/obesity/index.htm (accessed June 17, 2008).

2 U.S. Centers for Disease Control and Prevention, National Center for Health Statistics. "Prevalence of Overweight and Obesity Among Adults: United States, 2003-2004." U.S. Department of Health and Human Services. http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overweight/overwght_adult_03.htm (accessed June 17, 2008).

3 U.S. Department of Health and Human Services, National Center for Health Statistics. *Prevalence of Overweight Among Children and Adolescents: United States, 1999.* Hyattsville, MD: National Center for Health Statistics; 2001. http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overwght99.htm..(accessed July 14, 2008).

4 Ogden, C.L., M.D. Carroll, and K.M. Flegal. "High Body Mass Index for Age among U.S. Children and Adolescents, 2003-2006." *Journal of the American Medical Association* 299, no. 20 (2008): 2401-2405.

5 Gregg, E.W., J. Yiling, B.L. Cadwell, et al. "Secular Trends in Cardiovascular Disease Risk Factors According to Body Mass Index in US Adults." *Journal of the American Medical Association* 293, no. 15 (2005): 1868-1874.

6 National Institutes of Diabetes and Digestive and Kidney Diseases. "Do You Know the Health Risks of being Overweight?" U.S. Department of Health and Human Services. http://win.niddk.nih.gov/publications/health_risks.htm (accessed April 18, 2007).

7 American Heart Association and American Stroke Association. *Heart Disease and Stroke Statistics - 2008 Update.* Dallas, TX: American Heart Association, 2008.

8 Beydoun, M.A., H.A. Beydoun, and Y. Wang. "Obesity and Central Obesity as Risk Factors for Incident Dementia and Its Subtypes: A Systematic Review and Meta-Analysis." *Obesity Review* 9, no. 3 (2008): 204-218.

9 Petry, N. M., D. Barry, R. H. Pietrzak, and J. A. Wagner. "Overweight and Obesity Are Associated with Psychiatric Disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions." *Psychosomatic Medicine* 70, no. 3 (2008): 288-297.

10 Wang, Y., X. Chen, Y. Song, B. Caballero, and L.J. Cheskin. "Association between Obesity and Kidney Disease: A Systematic Review and Meta-Analysis." *Kidney International* 73, no. 1 (2008): 19-33.

11 Trust for America's Health. *Healthy Women: The Path to Healthy Babies, The Case for Preconception Care.* Washington, D.C.: TFAH, 2008.

12 American Diabetes Association. "Total Prevalence of Diabetes & Pre-Diabetes." American Diabetes Association. http://diabetes.org/diabetes-statistics/prevalence.jsp (accessed April 18, 2008).

13 Whitaker, R.C., J.A. Wright, M.S. Pepe, K.D. Seidel, and W.H. Dietz. "Predicting Obesity in Young Adulthood from Childhood and Parental Obesity." *New England Journal of Medicine* 37, no. 13 (1997): 869-873.

14 Serdula, M.K., D. Ivery, R.J. Coates, D.S. Freedman, D.F. Williamson, and T. Byers. "Do Obese Children become Obese Adults? A Review of the Literature." *Preventive Medicine* 22, no.2 (1993):167-177.

15 U.S. Centers for Disease Control and Prevention. "Overweight and Obesity - Consequences." U.S. Department of Health and Human Services. http://www.cdc.gov/nccdphp/dnpa/obesity/childhood/consequences.htm (accessed June 17, 2008).

16 U.S. Centers for Disease Control and Prevention. "Preventing Obesity and Chronic Diseases through Good Nutrition and Physical Activity." U.S. Department of Health and Human Services, http://www.cdc.gov/nccdphp/publications/factsheets/Prevention/obesity.htm. (accessed April 14, 2008).

17 Ogden, C.L., M.D. Carroll, and K.M. Flegal. "High Body Mass Index for Age among U.S. Children and Adolescents, 2003-2006." *Journal of the American Medical Association* 299, no. 20 (2008): 2401-2405.

18 Wang, Y. and M.A. Beydoun. "The Obesity Epidemic in the United States - Gender, Age, Socioecononomic, Racial/Ethnic, and Geographic Characteristics: A Systematic Review and Meta-Regression Analysis." *Epidemiologic Reviews* 29 (2007): 6-28.

19 U.S. Food and Drug Administration. "The Facts about Weight Loss Products and Programs." U.S. Department of Health and Human Services. http://www.cfsan.fda.gov/~dms/wgtloss.html (accessed June 5, 2008).

20 The CPT code set, maintained by the American Medical Association, is used by physicians and other health care providers to bill for medical services and procedures. Obesity-related HCPCS (Health Care Financing Administration Common Procedure Coding Systems) Level II codes were also selected. These codes are used for products, supplies, and services not included in the CPT codes but often covered by Medicare and other insurers.

21 U.S. Centers for Disease Control and Prevention, National Center on Vital Statistics. *Health, United States, 2003.* Atlanta, GA: U.S. Department of Health and Human Services, 2003.

22 Ibid.

23 Stunkard, A. J. and T. A. Wadden, eds. *Obesity: Theory and Therapy.* Second ed. New York, NY: Raven Press, 1993.

24 National Research Council. *Diet and Health: Implications for Reducing Chronic Disease Risk.* Washington, D.C.: National Academy Press, 1989.

25 Ibid.

26 Barlow, S.E. "Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report." *Pediatrics* 120, suppl 4 (2007): S164-S192.

27 Squires, S. "One Number Doesn't Fit All." *The Washington Post.* July 5, 2005.

28 Ibid.

29 Ibid.

30 Parker-Pope, T. "Watch Your Girth." *The New York Times,* May 13, 2008.

31 Ibid.

32 Ibid.

33 Freedman, D. S., L. K. Khan, M. K. Serdula, W. H. Dietz, S. R. Srinivasan, and G. S. Berenson. "The Relation of Childhood BMI to Adult Adiposity: The Bogalusa Heart Study." *Pediatrics* 115, no. 1 (2005): 22-27.

34 Freedman, D. S., H. S. Kahn, Z. Mei, L. M. Grummer-Strawn, W. H. Dietz, S. R. Srinivasan, and G. S. Berenson. "Relation of Body Mass Index and Waist-to-Height Ratio to Cardiovascular Disease Risk Factors in Children and Adolescents: The Bogalusa Heart Study." *The American Journal of Clinical Nutrition* 86, no. 1 (2007): 33-40.

35 Must, A., J. Spadano, E. H. Coakley, A. E. Field, G. Colditz, and W. H. Dietz. "The Disease Burden Associated with Overweight and Obesity." *The Journal of the American Medical Association* 282, no. 16 (1999): 1523-1529.

36 Parker-Pope, T. "Watch Your Girth." *The New York Times,* May 13, 2008.

37 American Medical Association (AMA). *Expert Committee Recommendations on the Assessment, Prevention, and Treatment of Child and Adolescent Overweight and Obesity.* Chicago, IL: AMA, 2007, http://www.ama-assn.org/ama1/pub/upload/mm/433/ped_obesity_recs.pdf (accessed April 22, 2008).

38 Ogden, C.L., M.D. Carroll, and K.M. Flegal. "High Body Mass Index for Age among U.S. Children and Adolescents, 2003-2006." *Journal of the American Medical Association* 299, no. 20 (2008): 2401-2405.

39 Ebbeling, C.B. and D.S. Ludwig. "Tracking Pediatric Obesity: An Index of Uncertainty?" *Journal of the American Medical Association* 299, no. 20 (2008): 2442-2443.

40 U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *National Survey of Children's Health 2003.* Rockville, MD: U.S. Department of Health and Human Services, 2005, http://www.mchb.hrsa.gov/overweight/techapp.htm (accessed April 22, 2008).

41 U.S. Centers for Disease Control and Prevention. "Youth Risk Behavior Surveillance -- United States, 2007." *Morbidity and Mortality Weekly Report* 57, no. SS-4 (2008): 1-136.

42 Polhamus, B., K. Dalenius, E. Borland, B. Smith, and L. Grummer-Strawn. *Pediatric Nutrition Surveillance 2006 Report.* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2007.

43 Ezzati, M., H. Martin, S. Skjold, S. Vander Hoorn, and C. J. Murray. "Trends in National and State-Level Obesity in the USA after Correction for Self-Report Bias: Analysis of Health Surveys." *Journal of the Royal Society of Medicine* 99, no. 5 (May, 2006): 250-257.

44 Putnam, J., J. Allshouse, and L. S. Kantor. "U.S. per Capita Food Supply Trends: More Calories, Refined Carbohydrates, and Fats." *Food Review* 25, no. 3 (2002): 1-14.

45 National Institutes of Diabetes and Digestive and Kidney Diseases. "Do You Know the Health Risks of being Overweight?" U.S. Department of Health and Human Services. http://win.niddk.nih.gov/publications/health_risks.htm (accessed April 18, 2007).

46 Cowie, C.C., K.F. Rust, D.D. Byrd-Hold, et al. "Prevalence of Diabetes and Impaired Fasting Glucose in Adults in the U.S. Population: National Health and Nutrition Examination Survey 1999-2002." *Diabetes Care* 29, no. 6 (2006): 1263-1268.

47 Ibid.

48 U.S. Centers for Disease Control and Prevention. "Number of People with Diabetes Continues to Increase." U.S. Department of Health and Human Services. http://cdc.gov/Features/DiabetesFactSheet/ (accessed June 26, 2008).

49 U.S. Centers for Disease Control and Prevention. *CDC Protecting Health for Life: The State of the CDC, Fiscal Year 2004.* Atlanta, GA: U.S. Department of Health and Human Services, 2005.

50 U.S. Centers for Disease Control and Prevention. "Number of People with Diabetes Continues to Increase." U.S. Department of Health and Human Services. http://cdc.gov/Features/DiabetesFactSheet/ (accessed June 26, 2008).

51 Narayan, K. M., J. P. Boyle, L. S. Geiss, J. B. Saaddine, and T. J. Thompson. "Impact of Recent Increase in Incidence on Future Diabetes Burden: U.S., 2005-2050." *Diabetes Care* 29, no. 9 (Sep, 2006): 2114-2116.

52 American Diabetes Association. "Total Prevalence of Diabetes & Pre-Diabetes." American Diabetes Association. http://diabetes.org/diabetes-statistics/prevalence.jsp (accessed April 18, 2008).

53 Ibid.

54 The Diabetes Prevention Program Research Group. "The Diabetes Prevention Program." *Diabetes Care* 25, no. 12 (2002): 2165-2171.

55 U.S. Centers for Disease Control and Prevention. "National Diabetes Fact Sheet - General Information." U.S. Department of Health and Human Services. http://www.cdc.gov/diabetes/pubs/general05.htm#what (accessed April 21, 2008).

56 Kaufman, F.R. "Type 2 Diabetes in Children and Young Adults: A 'New Epidemic'." *Clinical Diabetes* 20, no. 4 (October 1, 2002): 217-218.

57 Ibid.

58 American Diabetes Association. "Preventing Type 2 Diabetes in Children and Teens." *Diabetes Spectrum* 18, no. 4 (October 1, 2005): 249-250.

59 Cavallo, J. "Who Has Diabetes?" *Juvenile Diabetes Research Foundation Countdown* (Spring 2006): 10-19.

60 Writing Group for the SEARCH for Diabetes in Youth Study Group, D. Dabelea, R. A. Bell, R. B. D'Agostino Jr, G. Imperatore, J. M. Johansen, B. Linder, et al. "Incidence of Diabetes in Youth in the United States." *The Journal of the American Medical Association* 297, no. 24 (2007): 2716-2724.

61 Kaufman, F.R. "Type 2 Diabetes in Children and Young Adults: A 'New Epidemic'." *Clinical Diabetes* 20, no. 4 (October 1, 2002): 217-218.

62 American Diabetes Association. "Total Prevalence of Diabetes & Pre-Diabetes." American Diabetes Association. http://diabetes.org/diabetes-statistics/prevalence.jsp (accessed April 18, 2008).

63 U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. "Physical Activity and Fitness-Improving Health, Fitness, and Quality Of Life through Daily Physical Activity." *Prevention Report,* 16, no. 4 (July 2002): 1-15. http://odphp.osophs.dhhs.gov/pubs/prevrpt/02Volume16/Iss4Vol16.pdf (accessed May 12, 2008).

64 American Heart Association. *Heart Disease and Stroke Statistics - 2006 Update.* Dallas, TX: American Heart Association, 2006.

65 Ibid.

66 National Institutes of Diabetes and Digestive and Kidney Diseases. "Do You Know the Health Risks of being Overweight?" U.S. Department of Health and Human Services. http://win.niddk.nih.gov/publications/health_risks.htm (accessed April 18, 2007).

67 Ibid.

68 The Obesity Society. "Obesity Statistics - U.S. Trends." The Obesity Society. http://www.obesity.org/statistics/obesity_trends.asp (accessed April 18, 2008).

69 National Institutes of Diabetes and Digestive and Kidney Diseases. "Do You Know the Health Risks of being Overweight?" U.S. Department of Health and Human Services. http://win.niddk.nih.gov/publications/health_risks.htm (accessed April 18, 2007).

70 U.S. Centers for Disease Control and Prevention. "Obesity in the News: Helping Clear the Confusion." Power Point Presentation, May 25, 2005.

71 American Cancer Society. *Cancer Facts and Figures 2007.* Atlanta, GA: American Cancer Society, 2007.

72 U.S. Centers for Disease Control and Prevention. "Obesity in the News: Helping Clear the Confusion." Power Point Presentation, May 25, 2005.

73 Beydoun, M.A., H.A. Beydoun, and Y. Wang. "Obesity and Central Obesity as Risk Factors for Incident Dementia and Its Subtypes: A Systematic Review and Meta-Analysis." *Obesity Review* 9, no. 3 (2008): 204-218.

74 Petry, N. M., D. Barry, R. H. Pietrzak, and J. A. Wagner. "Overweight and Obesity Are Associated with Psychiatric Disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions." *Psychosomatic Medicine* 70, no. 3 (2008): 288-297.

75 Ibid.

76 Wang, Y., X. Chen, Y. Song, B. Caballero, and L.J. Cheskin. "Association between Obesity and Kidney Disease: A Systematic Review and Meta-Analysis." *Kidney International* 73, no. 1 (2008): 19-33.

77 Ibid.

78 Felson, D.T., and Y. Zhang. "An Update on the Epidemiology of Knee and Hip Osteoarthritis with a View to Prevention." *Arthritis and Rheumatism* 41, no. 8 (1998):1343-1355.

79 U.S. Centers for Disease Control and Prevention. "NHIS Arthritis Surveillance." U.S. Department of Health and Human Services. http://www.cdc.gov/arthritis/data_statistics/national_data_nhis.htm#excess (accessed June 26, 2008).

80 Warner, J. "Small Weight Loss Takes Big Pressure off Knee." *WebMD Health News.* http://www.webmd.com/osteoarthritis/news/20050629/small-weight-loss-takes-pressure-off-knee (accessed June 26, 2008).

81 Ogden, C.L., M.D. Carroll, and K.M. Flegal. "High Body Mass Index for Age among U.S. Children and Adolescents, 2003-2006." *Journal of the American Medical Association* 299, no. 20 (2008): 2401-2405.

82 Institute of Medicine (IOM). *Childhood Obesity in the United States: Facts and Figures.* Washington, D.C.: IOM, September 2004.

83 Daniels, S.R., F.R. Greer and the Committee on Nutrition. "Lipid Screening and Cardiovascular Health in Childhood." *Pediatrics* 122, no. 1 (2008): 198-208.

84 U.S. Department of Health and Human Services (USDHHS). *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity.* Washington, D.C.: USDHHS, 2001.

85 Ibid.

86 Levine, S., B. Maloney, B. Schulte, and R. Stein. "How Obesity Harms a Child's Body." *The Washington Post,* May 18, 2008.

87 American College of Obstetricians and Gynecologists. *Adolescents and Obesity - A Resource Guide.* Washington, D.C.: American College of Obstetricians and Gynecologists, 2007. http://www.acog.org/departments/AdolescentHealthCare/AdolescentsandObesity.pdf (accessed May 28, 2008).

88 Trust for America's Health. *Healthy Women: The Path to Healthy Babies, The Case for Preconception Care.* Washington, D.C.: TFAH, 2008.

89 U.S. Centers for Disease Control and Prevention. "Recommendations to Improve Preconception Health and Health Care-United States." *Morbidity and Mortality Weekly Report* 55, no. 4 (2006): RR-6.

90 Chu, S.Y., D.J. Bachman, W.M. Callaghan, et al. "Association between Obesity during Pregnancy and Increased Use of Health Care." *New England Journal of Medicine* 358, no. 14, (April 2008): 1444-1453.

91 Ibid.

92 U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for Americans, 2005.* 6th Edition, Washington, D.C.: U.S. Government Printing Office, 2005

93 Centers for Disease Control and Prevention. *Physical Activity for Everyone.* http://www.cdc.gov/nccdphp/dnpa/physical/everyone/recommendations/older_adults.htm (accessed July 1, 2008).

94 U.S. Department of Health and Human Services and U.S. Department of Agriculture. Dietary Guidelines for Americans, 2005. 6th Edition, Washington, DC: U.S. Government Printing Office, January 2005

95 U.S. Centers for Disease Control and Prevention. *Behavioral Risk Factor Surveillance System Survey Data.* Atlanta, GA: U.S. Department of Health and Human Services, 2006.

96 U.S. Centers for Disease Control and Prevention. *Behavioral Risk Factor Surveillance System Survey Data* . Atlanta, GA: U.S. Department of Health and Human Services, 2005.

97 Blair, S.N. "The Importance of Fitness in Children and Adults." Presentation at the IOM Annual Meeting, October 16, 2000. http://www.iom.edu/CMS/7622/7625.aspx (accessed April 18, 2008).

98 U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, and Division of Nutrition and Physical Activity. *Promoting Physical Activity: A Guide for Community Action.* Vol. 1. Champaign, IL: Human Kinetics, 1999.

99 U.S. Centers for Disease Control and Prevention. "Trends in Leisure-Time Physical Inactivity by Age, Sex, and race/ethnicity—United States, 1994-2004." *Morbidity and Mortality Weekly Report* 54, no. 39 (Oct 7, 2005): 991-994.

100 U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, and Division of Nutrition and Physical Activity. *Promoting Physical Activity: A Guide for Community Action*. Vol. 1. Champaign, IL: Human Kinetics, 1999.

101 Ibid.

102 Nader, P.R., R.H. Bradley, R.M. Houts, S. L. McRitchie, and M. O'Brien. "Moderate-to-Vigorous Physical Activity from Ages 9 to 15 Years." *Journal of the American Medical Association* 300, no. 3 (2008): 295-305.

103 U.S. Centers for Disease Control and Prevention. "Youth Risk Behavior Surveillance – United States, 2007." *Morbidity and Mortality Weekly Report* 57, no. SS-4 (2008): 1-136.

104 Ibid.

105 Ibid.

106 Ibid.

107 Ibid.

108 Exercise is Medicine. *A Newsletter Promoting the Benefits of Activity*. Volume 1, Spring 2008.

109 Andreyeva, T., R. Puhl, and K.D. Brownell. "Changes in Perceived Weight Discrimination among Americans: 1995-1996 through 2004-2006." *Obesity* 16, no. 5 (2008):1129-1134.

110 Roehling, M.V., P.V. Roehling, and S. Pichler. "The Relationship between Body Weight and Perceived Weight-Related Employment Discrimination: The Role of Sex and Race." *Journal of Vocational Behavior,* 71, no. 2 (2007): 300-318.

111 Pingitore, R., R. Dugoni, S. Tindale, and B. Spring. "Bias against Overweight Job Applicants in a Simulated Employment Interview." *Journal of Applied Psychology* 79, no. 6 (1994): 909-917.

112 Baum, C.L. and W.F. Ford. "The Wage Effects of Obesity: A Longitudinal Study." *Health Economics* 13, no. 9 (2004):885-899.

113 Rudd Center for Food Policy and Obesity. *Weight Bias: The Need for Public Policy*. New Haven, CT: Yale University, 2008.

114 Ibid.

115 Neumark-Sztainer, D., M. Story, and T. Harris. "Beliefs and Attitudes about Obesity among Teachers and School Health Care Providers Working with Adolescents." *Journal of Nutrition Education* 31, no. 1 (1999): 3-9.

116 O'Brien, K.S., J.A. Hunter, and M. Banks. "Implicit Anti-Fat Bias in Physical Educators: Physical Attributes, Ideology, and Socialisation." *International Journal of Obesity* 31, no. 2 (2007): 308-314.

117 Canning, H. and J. Mayer. "Obesity-Its Possible Effects on College Acceptance." *New England Journal of Medicine* 275 (1966): 1172-1174.

118 Rudd Center for Food Policy and Obesity. *Weight Bias: The Need for Public Policy*. New Haven, CT: Yale University, 2008.

119 Ibid.

120 Ibid.

121 Amy, N.K., A. Aalborg, P. Lyons, and L Keranen. "Barriers to Routine Gynecological Cancer Screening for White and African-American Obese Women." *International Journal of Obesity* 30, no. 1 (2006): 147-155.

122 Olson, C.L., H.D. Schumaker, and B.P Yawn. "Overweight Women Delay Medical Care." *Archives of Family Medicine* 3, no. 10 (1994): 888-892.

123 Fontaine, K.R., M.S. Faith, D.B. Allison, and L.J Cheskin. "Body Weight and Health Care among Women in the General Population." *Archives of Family Medicine,* 7, no. 4 (1998): 381-384.

124 Rand, C.S., and A.M. Macgregor. "Morbidly Obese Patients' Perceptions of Social Discrimination Before and After Surgery for Obesity." *Southern Medical Journal* 83, no. 12 (1990): 1398-1395.

125 Schwimmer J.B., T.M. Burwinkle, and J.W. Varni. "Health-Related Quality of Life of Severely Obese Children and Adolescents." *Journal of the American Medical Association* 289, no. 14 (2003): 1851-1853.

126 U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for Americans, 2005*. 6th Edition, Washington, D.C.: U.S. Government Printing Office, 2005

127 McGinnis, M. J. *Obesity: An American Public Health Epidemic, Strategies to Better Understand it and Change America's Behavior.* Washington, D.C.: National Institute for Health Care Management, 2004.

128 Putnam, J., J. Allshouse, and L. S. Kantor. "U.S. per Capita Food Supply Trends: More Calories, Refined Carbohydrates, and Fats." *Food Review* 25, no. 3 (2002): 1-14.

129 U.S. Centers for Disease Control and Prevention. "Trends in Intake of Energy and Macronutrients —United States, 1971-2000." *Morbidity and Mortality Weekly Report* 53, no. 4 (2004): 80-82.

130 Briefel, R. R. and C. L. Johnson. "Secular Trends in Dietary Intake in the United States." *Annual Review of Nutrition* 24, (2004): 401-431.

131 Nielsen, S. J. and B. M. Popkin. "Patterns and Trends in Food Portion Sizes, 1977-1998." *Journal of the American Medical Association* 289, no. 4 (2003): 450-453.

132 Putnam, J., J. Allshouse, and L. S. Kantor. "U.S. per Capita Food Supply Trends: More Calories, Refined Carbohydrates, and Fats." *Food Review* 25, no. 3 (2002): 1-14.

133 Ibid.

134 Ibid.

135 Ibid.

136 Ibid.

137 Cleveland, L. *National Food Consumption Survey, 1977-78*. Washington, D.C.: U.S. Department of Agriculture, 1979.

138 U.S. Centers for Disease Control and Prevention, National Center for Health Statistics. "DHHS-USDA Dietary Survey Integration - What We Eat in America." U.S. Department of Health and Human Services, http://www.cdc.gov/nchs/about/major/nhanes/faqs.htm (accessed April 18, 2008).

139 U.S. Centers for Disease Control and Prevention, National Center for Health Statistics. *Health, United States, 2007: With Chartbook on Trends in the Health of Americans*. Washington, D.C.: U.S. Department of Health and Human Services, 2007.

140 Ibid.

141 Segal, D. "Objects on Your Plate May Be Smaller Than They Appear." *The Washington Post,* April 13, 2008.

142 Pollan, M. "Supersize Me Organically." *The New Farm.* http://www.newfarm.org/features/2005/0805/pollen/index2_print.shtml. (accessed May 22, 2008).

143 Ibid.

144 Martin, A. "Will Diners Swallow This?" *The New York Times,* March 25, 2007.

145 Ibid.

146 U.S. Centers for Disease Control and Prevention, National Center for Health Statistics. "Calorie Consumption on the Rise in United States, Particularly Among Women." News Release, February 5, 2004. http://www.cdc.gov/nchs/PRESSROOM/04news/calorie.htm (accessed May 22, 2008).

147 Martin, A. "Will Diners Swallow This?" *The New York Times,* March 25, 2007.

148 Ibid.

149 U.S. Centers for Disease Control and Prevention. "Preventing Obesity and Chronic Diseases Through Good Nutrition and Physical Activity." U.S. Department of Health and Human Services, http://www.cdc.gov/nccdphp/publications/factsheets/Prevention/obesity.htm. (accessed April 14, 2008).

150 Ibid.

151 Rosen, B. and L. Barrington. *Weights & Measures: What Employers Should Know about Obesity.* New York, NY: The Conference Board, April 2008.

152 Ibid.

153 Ostbye, T., J. M. Dement, and K. M. Krause. "Obesity and Workers' Compensation: Results from the Duke Health and Safety Surveillance System." *Archives of Internal Medicine* 167, no. 8 (2007): 766-773.

154 The Robert Wood Johnson Foundation, the American Stroke Association, and the American Heart Association. *A Nation at Risk: Obesity in the United States, A Statistical Sourcebook.* Dallas, TX: American Heart Association, 2005. http://www.americanheart.org/downloadable/heart/1114880987205NationAtRisk.pdf (accessed April 14, 2008).

155 Pronk, N. P., B. Martinson, R. C. Kessler, A. L. Beck, G. E. Simon, and P. Wang. "The Association between Work Performance and Physical Activity, Cardiorespiratory Fitness, and Obesity." *Journal of Occupational and Environmental Medicine* 46, no. 1 (2004): 19-25.

156 Ostbye, T., J. M. Dement, and K. M. Krause. "Obesity and Workers' Compensation: Results from the Duke Health and Safety Surveillance System." *Archives of Internal Medicine* 167, no. 8 (2007): 766-773.

157 Pronk, N. P., B. Martinson, R. C. Kessler, A. L. Beck, G. E. Simon, and P. Wang. "The Association between Work Performance and Physical Activity, Cardiorespiratory Fitness, and Obesity." *Journal of Occupational and Environmental* 46, no. 1 (2004): 19-25.

158 Aldana, S. G. and N. P. Pronk. "Health Promotion Programs, Modifiable Health Risks, and Employee Absenteeism." *Journal of Occupational and Environmental* 43, no. 1 (2001): 36-46.

159 Gordian Health Solutions. *Managing the Obesity Problem: A Case Study with Measurable Results.* Nashville, TN: Gordian Health Solutions, 2007.

160 Wang, F., T. McDonald, L. J. Champagne, and D. W. Edington. "Relationship of Body Mass Index and Physical Activity to Health Care Costs among Employees." *Journal of Occupational and Environmental Medicine* 46, no. 5 (2004): 428-436.

161 Burton, W. N., C. Y. Chen, A. B. Schultz, and D. W. Edington. "The Economic Costs Associated with Body Mass Index in a Workplace." *Journal of Occupational and Environmental Medicine* 40, no. 9 (1998): 786-792.

162 Xiang, H., G. A. Smith, J. R. Wilkins, G. Chen, S. G. Hostetler, and L. Stallones. "Obesity and Risk of Nonfatal Unintentional Injuries." *American Journal of Preventive Medicine* 29, no. 1 (2005): 41-45.

163 Ostbye, T., J. M. Dement, and K. M. Krause. "Obesity and Workers' Compensation: Results from the Duke Health and Safety Surveillance System." *Archives of Internal Medicine* 167, no. 8 (2007): 766-773.

164 Ibid.

165 Berger, E. "Emergency Departments Shoulder Challenges of Providing Care, Preserving Dignity for the 'Super Obese.'" *Annals of Emergency Medicine* 50, no. 4 (2007): 443-445.

166 Zezima, K. "Increasing Obesity Requires New Ambulance Equipment." *The New York Times,* April 8, 2008.

167 Ibid.

168 Berger, E. "Emergency Departments Shoulder Challenges of Providing Care, Preserving Dignity for the 'Super Obese.'" *Annals of Emergency Medicine* 50, no. 4 (2007): 443-445.

169 Foreman, C.T. Remarks made as moderator of the panel "Changing the Food Environment," part of the Transatlantic Public Policy Approaches to Tackling Obesity and Diet-Related Disease conference held in Washington, D.C. on April 8, 2008.

170 Lyons, A.A., J. Park, and C. H. Nelson. "Food Insecurity and Obesity: A Comparison of Self-Reported and Measured Height and Weight." *American Journal of Public Health* 98, no. 4 (2008): 751-757.

171 Monsivais, P., and A. Drewnowski. "The Rising Cost of Low-Energy-Density Foods." *Journal of the American Dietetic Association* 107, no. 12 (2007): 2017-2076.

172 Ibid.

173 Lubrano, A. "Food Costs Likely to Boost Obesity in Poor." *Philadelphia Inquirer,* May 6, 2008.

174 K. Downey. "Hunger Pains: As Economy Slows, Charities Face Tall Order to Feed Needy." *The Washington Post,* B01, April 8, 2008.

175 Ibid.

176 Booth, M., C. Chirico, B. Edwards, and K. Gramp. *Monthly Budget Review Fiscal Year 2008: A Congressional Budget Office Analysis.* Washington, D.C.: Congressional Budget Office, 2008, http://www.cbo.gov/ftpdocs/90xx/doc9023/03-2008-MBR.pdf (accessed April 16, 2008).

177 Eckholm, E. "As Jobs Vanish and Prices Rise, Food Stamp Use Nears Record." *The New York Times,* March 31, 2008.

178 Food and Nutrition Service. "Women, Infants, and Children." U.S. Department of Agriculture. http://www.fns.usda.gov/wic/ (accessed April 16, 2008).

179 Parham, P. *Written Testimony of Penny Parham, Administrative Director, Department of Food and Nutrition, Miami-Dade County, Florida, Public Schools Before the Committee on Education and Labor United States House of Representatives.* Miami, FL: Miami-Dade County Public Schools, March 4, 2008. http://edlabor.house.gov/testimony/2008-03-04-PennyParham.pdf

180 Ibid.

181 Glod, M. "Schools Get a Lesson in Lunch Line Economics: Food Costs Unravel Nutrition Initiatives." *The Washington Post*, A01, April 14, 2008.

182 Hecht, K. *Testimony before the Committee on Education and Labor, House of Representatives.* San Francisco, CA: California Food Policy Advocates, 2008, http://edlabor.house.gov/testimony/2008-03-04-KennethHecht.pdf (accessed April 16, 2008).

183 U.S. Centers for Disease Control and Prevention. "CDC's State Based Nutrition and Physical Activity Program to Prevent Obesity and other Chronic Diseases." U.S. Department of Health and Human Services. http://www.cdc.gov/nccdphp/dnpa/obesity/state_programs/index.htm. (accessed April 15, 2008).

184 Ibid.

185 Utah Department of Health, Bureau of Health Promotion. *Tipping the Scales Toward a Healthier Population: The Utah Blueprint to Promote Healthy Weight for Children, Youth, and Adults.* Salt Lake City, UT: Utah Department of Health, 2006. http://health.utah.gov/obesity/docs/Blueprint.pdf. (accessed April 9, 2008).

186 Arkansas Department of Health. *Changing the Culture of Health in Arkansas: A Coordinated Approach to Health Promotion and Prevention of Chronic Diseases and Related Complications.* Little Rock, AR: Arkansas Department of Health, 2005. http://www.healthyarkansas.com/disease/chronic_disease_plan2006.pdf. (accessed April 3, 2008).

187 Veugelers, P.J. and A.L. Fitzgerald. "Effectiveness of School Programs in Preventing Childhood Obesity: A Multilevel Comparison." *American Journal of Public Health* 95, no. 3 (2005): 432-435.

188 U.S. Department of Agriculture (USDA). *Incorporating the 2005 Dietary Guidelines for Americans into School Meals.* SP 04-2008. Washington, D.C.: USDA, 2007.

189 Ibid.

190 U.S. Department of Agriculture, Food and Nutrition Service, Office of Research, Nutrition and Analysis. *School Nutrition Dietary Assessment Study-III, Vol. I: School Foodservice, School Food Environment, and Meals Offered and Served.* Alexandria, VA: USDA, 2007.

191 Wharton, C.M., M. Long, and M.B. Schwartz. "Changing Nutrition Standards in Schools: The Emerging Impact on School Revenue." *Journal of School Health* 78, no. 5 (2008): 245-252.

192 Pennsylvania Department of Education, Division of Food and Nutrition. *Nutrition Standards for Competitive Foods in Pennsylvania Schools for the School Nutrition Incentive.* Harrisburg, PA: Pennsylvania Department of Education, July 27, 2007. http://www.pde.state.pa.us/food_nutrition/lib/food_nutrition/nutrition_guidelines_r_3_-final.pdf (accessed July 23, 2008).

193 Wharton, C.M., M. Long, and M.B. Schwartz. "Changing Nutrition Standards in Schools: The Emerging Impact on School Revenue." *Journal of School Health* 78, no. 5 (2008): 245-252.

194 Ibid.

195 U.S. Department of Agriculture, Food and Nutrition Service, Office of Research, Nutrition and Analysis. *School Nutrition Dietary Assessment Study-III, Vol. I: School Foodservice, School Food Environment, and Meals Offered and Served.* Alexandria, VA: USDA, 2007.

196 Ibid.

197 Finkelstein, D.M., E.L. Hill, and R.C. Whitaker. "School Food Environments and Policies in U.S. Public Schools." *Pediatrics* 122, no. 1 (2008): e251-e259. (E-pub ahead of print.)

198 U.S. Department of Agriculture, Food and Nutrition Service. *Foods Sold in Competition with USDA School Meal Programs: A Report to Congress.* Washington, D.C.: U.S. Department of Agriculture, 2001. http://www.fns.usda.gov/cnd/Lunch/CompetitiveFoods/report_congress.htm (accessed April 25, 2008).

199 Ibid.

200 U.S. Government Accountability Office (GAO). *School Meal Programs: Competitive Foods Are Widely Available and Generate Substantial Revenues for Schools.* Washington, D.C.: GAO, 2005. http://www.gao.gov/new.items/d05563.pdf (accessed May 28, 2008).

201 Center for Science in the Public Interest (CSPI). *State School Foods Report Card 2007.* Washington, D.C.: CSPI, 2007.

202 Institute of Medicine. *Nutrition Standards for Foods in Schools: Leading the Way Toward Healthier Youth.* Washington, D.C.: National Academies Press, 2007.

203 Wharton, C.M., M. Long, and M.B. Schwartz. "Changing Nutrition Standards in Schools: The Emerging Impact on School Revenue." *Journal of School Health* 78, no. 5 (2008): 245-252.

204 Ibid.

205 Institute of Medicine. *Preventing Childhood Obesity: Health in the Balance.* Washington, D.C.: The National Academies Press, 2005.

206 Menschik, D., S. Ahmed, M. H. Alexander, and R.W. Blum. "Adolescent Physical Activities as Predictors of Young Adult Weight." *Archives of Pediatrics Adolescent Medicine* 162, no. 1 (2008): 29-33.

207 Institute of Medicine. *Preventing Childhood Obesity: Health in the Balance.* Washington, D.C.: The National Academies Press, 2005.

208 U.S. Centers for Disease Control and Prevention. "Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People." *MMWR Recommendations and Reports* 46, no. RR-6 (1997): 1-36. http://www.cdc.gov/mmwr/preview/mmwrhtml/00046823.htm (accessed May 5, 2008).

209 American Academy of Pediatrics, Committee of Sports Medicine and Fitness, and Committee on School Health. "Physical Fitness and Activity in Schools." *Pediatrics* 105, no. 5 (2000): 1156-1157.

210 U.S. Centers for Disease Control and Prevention. "Youth Risk Behavior Surveillance – United States, 2007." *Morbidity and Mortality Weekly Report* 57, no. SS-4 (2008): 1-136.

211 Field, T., M. Diego, and C. E. Sanders. "Exercise is Positively Related to Adolescents' Relationships and Academics." *Adolescence* 36, no. 141 (2001): 105-110.

212 Lee, S.M., C.R. Burgeson, J.E. Fulton, and C.G. Spain. "Physical Education and Physical Activity: Results From the School Health Policies and Programs Study 2006." *Journal of School Health* 77, no. 8 (2007): 435-463.

213 National Association for Sport and Physical Education (NASPE). *What Constitutes a Quality Physical Education Program?* Reston, VA: NASPE, 2003.

214 Hillman, C. H., K. I. Erickson, and A. F. Kramer. "Be Smart, Exercise Your Heart: Exercise Effects on Brain and Cognition." *Nature Reviews Neuroscience* 9, no. 1 (2008): 58-65.

215 Shephard, R. J. "Response of Brain, Liver, Kidney, and Other Organs and Tissues to Regular Physical Activity." Chap. 8, *In Physical Activity and Health,* edited by C. Bouchard, S. N. Blair and W. L. Haskell, 127-140. Champaign, IL: Human Kinetics, Inc., 2007.

216 Shephard, R. J. "Habitual Physical Activity and Academic Performance." *Nutrition Reviews* 54, no. 4, Pt 2 (1996): S32-6.

217 Trost, S.G. *Physical Education, Physical Activity and Academic Performance: Research Brief.* San Diego, CA: Active Living Research, Robert Wood Johnson Foundation, 2007.

218 Ibid

219 Carlson, S. A., J. E. Fulton, S. M. Lee, et al. "Physical Education and Academic Achievement in Elementary School: Data from the Early Childhood Longitudinal Study." *American Journal of Public Health* 98, no. 4 (2008): 721-727.

220 Shephard, R. J. "Habitual Physical Activity and Academic Performance." *Nutrition Reviews* 54, no. 4, Pt 2 (1996): S32-6.

221 Castelli, D., C.H. Hillman, S.M. Buck, and H.E. Erwin. "Physical Fitness and Academic Achievement in Third- and Fifth-Grade Students." *Journal of Sport and Exercise Psychology* 29, no. 2 (2007): 239-252.

222 Nelson, M.C., and P. Gordon-Larsen. "Physical Activity and Sedentary Behavior Patterns Are Associated with Selected Adolescent Health Risk Behaviors." *Pediatrics* 117, no. 4 (2006): 1281-1290.

223 Trost, S.G. *Physical Education, Physical Activity and Academic Performance: Research Brief.* San Diego, CA: Active Living Research, Robert Wood Johnson Foundation, 2007.

224 Coe, D.P., J.M. Pivarnik, C.J. Womack, M.J. Reeves, and R.M. Malina. "Effect of Physical Education and Activity Levels on Academic Achievement in Children." *Medicine and Science in Sports and Exercise* 38, no. 8 (2006): 1515-1519.

225 CARDIAC WV Project. "Methods." CARDIAC WV Project. http://www.cardiacwv.org/methods.htm (accessed May 27, 2008).

226 The Associated Press. "Screening Shows Obesity Down Among W. Va. Children." *The Associated Press,* May 22, 2008.

227 Ibid.

228 Foster, G. D., S. Sherman, K. E. Borradaile, et al. "A Policy-Based School Intervention to Prevent Overweight and Obesity." *Pediatrics* 121, no. 4 (2008): e794-802.

229 This assessment does not include a comprehensive review of all food tax policies in all states. Some states with a general food tax that covers "junk food" may not be included in this evaluation.

230 Center for Science in the Public Interest (CSPI). "CSPI to Urge Taxes on Junk Foods to Fund Health Campaigns." News Release, May 25, 2000. http://www.cspinet.org/new/tax_junkfood.html (accessed April 25, 2008).

231 Finkelstein, E. A. and L. Zuckerman. *The Fattening of America: How the Economy Makes Us Fat, If It Matters, and What to Do About It.* Hoboken, NJ: John Wiley & Sons, Inc., 2008.

232 Brownell, K. D. "The Chronicling of Obesity: Growing Awareness of its Social, Economic, and Political Contexts." *Journal of Health Politics, Policy and Law* 30, no. 5 (2005): 955-964.

233 Jacobson, M.H. and K.D. Brownell. "Small Taxes on Soft Drinks and Snack Foods to Promote Health." *American Journal of Public Health* 90, no. 6 (2000): 854-857.

234 Mississippi Health Advocacy Program (MHAP). *Removing the Grocery Tax on Healthy Foods as a Public Health Policy.* Jackson, MS: MHAP, 2007.

235 Monsivais, P., and A. Drewnowski. "The Rising Cost of Low-Energy-Density Foods." *Journal of the American Dietetic Association* 107, no. 12 (2007): 2017-2076.

236 The American Medical Association. "AMA Adopts Policies to Promote Healthier Food Options to Fight Obesity in America." News Release, June 27, 2007. http://www.ama-assn.org/ama/pub/category/17768.html (accessed May 27, 2008).

237 National Restaurant Association. *2007 State Legislative Session Summary.* Washington, D.C.: National Restaurant Association, 2007.

238 Center for Science in the Public Interest (CSPI). *Nutrition Labeling in Chain Restaurants – State and Local Bills/Regulations - 2007-2008.* Washington, D.C.: CSPI, 2008. http://www.cspinet.org/nutritionpolicy/MenuLabelingBills2007-2008.pdf (accessed May 27, 2008).

239 Ibid.

240 The Rudd Center for Food Policy and Obesity. *A Case Study of California's Menu Labeling Legislation.* New Haven, CT: Yale University, 2008. http://www.yaleruddcenter.org/what/policy/pdfs/CaliforniaSB120MenuLabelCaseStudy.pdf (accessed May 27, 2008).

241 Center for Science in the Public Interest (CSPI). *Nutrition Labeling in Chain Restaurants – State and Local Bills/Regulations - 2007-2008.* Washington, D.C.: CSPI, 2008. http://www.cspinet.org/nutritionpolicy/MenuLabelingBills2007-2008.pdf (accessed May 27, 2008).

242 Arizona Department of Health Services. "Arizona Smart Choice Program - Criteria for Approved Menu Items." Arizona Department of Health Services. http://www.azsmartchoice.com/CriteriaAppovMenu.htm (accessed May 27, 2008).

243 Center for Science in the Public Interest (CSPI). *Anyone's Guess. The Need for Nutrition Labeling at Fast-Food and Other Chain Restaurants.* Washington, D.C.: CSPI, 2003. http://www.cspinet.org/restaurantreport.pdf (accessed May 27, 2008).

244 National Restaurant Association. "House Vote to Prevent Frivolous Lawsuits Against Restaurants, Food Manufacturers: Just Plain Common Sense." Press Release, March 10, 2004. http://www.restaurant.org/pressroom/print/index.cfm?ID=833 (accessed April 25, 2008).

245 Hulse, C. "Vote in House Offers a Shield in Obesity Suits." *New York Times,* March 11, 2004.

246 Center for Science in the Public Interest (CSPI). "'Big Food' to Win Special Protection in House of Representatives." News Release, March 10, 2004. http://www.cspinet.org/new/200403102.html (accessed April 25, 2008).

247 109th Congress. *Healthy Places Act of 2007.* S.1067. 2nd sess. (March 29, 2007) and 109th Congress. *Healthy Places Act of 2007.* H.R. 398. 2nd sess. (February 2, 2007).

248 McCann, B. and R. Ewing. *Measuring the Health Effects of Sprawl: A National Analysis of Physical Activity, Obesity, and Chronic Disease.* Washington, D.C.: Smart Growth America and the Surface Transportation Policy Project, 2003. www.smartgrowthamerica.org/report/HealthSprawl8.03.pdf (accessed April 25, 2008).

249 Prevention Institute. *Improving the Nutrition and Physical Activity Environment in California.* Oakland, CA: Prevention Institute, 2002. http://preventioninstitute.org/nutrition_PA.html. (accessed April 25, 2008).

250 U.S. Department of Health and Human Services. *Healthy People 2010. 2nd Edition.* Washington, D.C.: U.S. Government Printing Office, 2000.

251 McDonald, N. C. "Active Transportation to School: Trends among U.S. Schoolchildren, 1969-2001." *American Journal of Preventive Medicine* 32, no. 6 (2007): 509-516.

252 U.S. Centers for Disease Control and Prevention. "Barriers to Children Walking and Biking to School—United States, 1999." *Morbidity and Mortality Weekly Report* 51, no. 32 (2002): 701-704.

253 Powell, K. E., L. Martin, and P. P. Chowdhury. "Places to Walk: Convenience and Regular Physical Activity." *American Journal of Public Health* 93, no. 9 (2003): 1519-1521.

254 Giles-Corti, B. and R. J. Donovan. "The Relative Influence of Individual, Social, and Physical Environment Determinants of Physical Activity." *Social Science & Medicine* 54, no. 12 (2002): 1793-1812.

255 Robert Wood Johnson Foundation. *Grant Results: Researchers Review State Policies on Promoting Walking and Biking - Identify Five with Greatest Potential to Work.* Princeton, NJ: RWJF, 2005, http://www.rwjf.org/reports/grr/046958.htm (accessed April 10, 2008).

256 110th Congress. *Complete Streets Act of 2008.* S. 2686. 2nd sess. (March 3, 2008).

257 McDonald, N. C. "Active Transportation to School: Trends among U.S. Schoolchildren, 1969-2001." *American Journal of Preventive Medicine* 32, no. 6 (2007): 509-516.

258 Ewing R., Forinash C., and Schroeer W. "Neighborhood Schools and Sidewalk Connections: What Are the Impacts on Travel Mode Choice and Vehicle Emissions?" *Transportation Research News* 237 (March-April 2005): 1-7. http://onlinepubs.trb.org/Onlinepubs/trnews/trnews237environment.pdf (April 30, 2008).

259 Staunton, C.E., D. Hubsmith, and W. Kallins. "Promoting Safe Walking and Biking to School: The Marin County Success Story." *American Journal of Public Health* 93, no. 9 (2003): 1431-1434.

260 Patch, D. "Three Communities Get $422,400 in State Grants for Sidewalks." *Toledo Blade,* January 23, 2008.

261 Wisniewski, M. "Feds Foot Bill So Kids Can Walk to School." *The Chicago Sun-Times,* March 7, 2008.

262 California Department of Transportation. "Caltrans Awards $52 Million in Safe Routes to School Funding." Press Release, March 18, 2008. http://www.dot.ca.gov/hq/paffairs/news/pressrel/08pr4.htm (accessed May 2, 2008).

263 "North Coast Communities Receive Safe Routes to School Funding." *The Eureka Reporter,* March 29, 2008, http://www.eurekareporter.com/article/080329-communities-get-safe-routes-to-school-funding (accessed May 2, 2008).

264 For example, a law may fix a standard or direct an administrative agency to adopt one or a potential range of standards through an administrative process.

265 Cleveland Clinic. "Laparoscopic Weight Loss Surgery." http://my.clevelandclinic.org/services/laparoscopic_surgery/hic_laparoscopic_weight_loss_surgery.aspx (accessed July 2, 2008).

266 Newswise. "Insurance Coverage for Obesity is a Model for the Nation." http://www.newswise.com/p/articles/view/507650. (accessed July 2, 2008).

267 Mant, D. "Effectiveness of Dietary Intervention in General Practice." *American Journal of Clinical Nutrition* 65, no. Suppl 6 (1997):1933S-1938S.

268 Newswise. "Insurance Coverage for Obesity is a Model for the Nation." http://www.newswise.com/p/articles/view/507650. (accessed July 2, 2008).

269 Ibid.

270 Heubeck, E. "Reimbursement Offers Hope for More Obesity Counseling: New Pay Programs/AMA Guidelines Could Fuel the Fight Against Pediatric Obesity. *DOC News 4,* no. 9 (September 2007). http://docnews.diabetesjournals.org/cgi/content/full/4/9/8 (accessed July 2, 2008).

271 Ibid.

272 Ibid.

273 Goldfarb, B. "Medicare Issues Bariatric Surgery Policy Guidelines." *DOC News,* May 2006. http://docnews.diabetesjournals.org/cgi/reprint/3/5/1-a.pdf (accessed July 2, 2008).

274 Ibid.

275 Barlow, S.E. and the Expert Committee. "Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report." *Pediatrics* 120, Suppl 4 (2007): S164-S192.

276 U.S. Department of Health and Human Services. "HHS Announces Revised Medicare Obesity Coverage Policy." News Release, July 15, 2004. http://www.hhs.gov/news/press/2004pres/20040715.html (accessed July 14, 2008).

277 StateHealthFacts.org. "Total Medicaid Enrollment, FY2005." Kaiser Family Foundation. http://statehealthfacts.org/comparemaptable.jsp?ind=198&cat=4 (accessed July 14, 2008).

278 Doering, C. "USDA Revises Food Program for Women and Children." *Reuters,* December 6, 2007.

279 Institute of Medicine. *WIC Food Packages: Time for a Change.* Washington, D.C.: The National Academies Press, 2005.

280 Daniels, P., D. Whitford, A. Bartholomew and P. Mitchell. "The New WIC Food Packages." Presentation at the National WIC Association's 18th Annual Washington Leadership Conference and WIC Food Package Implementation Summit. Washington, D.C., March 11, 2008.

281 Ibid.

282 Information provided to TFAH by the National WIC Association during a meeting at TFAH offices on April 17, 2008.

283 U.S. Centers for Disease Control and Prevention. "Breastfeeding Practices - Results from the National Immunization Survey." U.S. Department of Health and Human Services. http://www.cdc.gov/breastfeeding/data/NIS_data/data_2004.htm (accessed May 2, 2008).

284 Womenshealth.gov. "Health Risks of Not Breastfeeding." U.S. Department of Health and Human Services. http://www.4woman.gov/Breastfeeding/index.cfm?page=519 (accessed May 2, 2008).

285 United States Department of Agriculture. (USDA) "Food Stamp Program Participation and Costs." USDA. http://www.fns.usda.gov/pd/fssummar.htm (May 9, 2008).

286 Baum, C. *The Effects of Food Stamps on Obesity.* Washington, D.C.: Economic Research Service, United States Department of Agriculture, September 2007. http://www.ers.usda.gov/Publications/CCR34/CCR34.pdf (accessed June 3, 2008).

287 Ver Ploeg, M., L. Mancino, and B.H. Lin. *Food and NutritionAssistance Programs and Obesity: 1976-2002.* Washington, D.C.: Economic Research Service, USDA, 2007. http://www.ers.usda.gov/Publications/ERR48/ERR48.pdf (May 9, 2008).

288 Baum, C. *The Effects of Food Stamps on Obesity.* Washington, D.C.: Economic Research Service, United States Department of Agriculture, September 2007. http://www.ers.usda.gov/Publications/CCR34/CCR34.pdf (accessed June 3, 2008).

289 American Heart Association. "American Heart Association Meeting Report: People on Food Stamps Can't Afford Heart-Healthy Meals – Abstract 3698." News Release, November 9, 2004.

290 Center for Science in the Public Interest (CSPI). "Policy Options to Promote Nutrition and Activity." CSPI. http://www.cspinet.org/nutritionpolicy/policy_options.html

291 Baum, C. *The Effects of Food Stamps on Obesity.* Washington, D.C.: Economic Research Service, United States Department of Agriculture, September 2007. http://www.ers.usda.gov/Publications/CCR34/CCR34.pdf (accessed June 3, 2008).

292 Richardson, J. Child *Nutrition and WIC Programs: Background and Recent Funding.* Washington, D.C.: Congressional Research Service, The Library of Congress, 2006.

293 Ibid.

294 U.S. Department of Agriculture. *Farm Bill: Title IV Nutrition.* Washington, D.C.: USDA, 2007.

295 Ibid.

296 Sisson, A. "Fruit and Vegetable Consumption by Low-Income Americans." *Nutrition Noteworthy* 5, no. 1 (2002): 1-7.

297 Cotterill, R.W. and A.W. Franklin. *The Urban Grocery Store Gap.* Hartford, CT: Storrs Food Marketing Policy Center, University of Connecticut, 1995.

298 Morris, P. M. *Higher Prices, Fewer Choices: Shopping for Food in Rural America.* Washington, D.C.: Public Voice for Food and Health Policy, 1990.

299 Putnam, J., J. Allshouse, and L.S. Kantor. "U.S. Per Capita Food Supply Trends: More Calories, Refined Carbohydrates, and Fats." *Food Review* 25, no. 3 (2002): 1-14.

300 Institute for Agriculture and Trade Policy. *Food without Thought: How U.S. Farm Policy Contributes to Obesity.* Minneapolis, MN: Institute for Agriculture and Trade Policy, 2006.

301 Richardson, J. Child *Nutrition and WIC Legislation in the 108th and 109th Congresses.* Washington, D.C.: Congressional Research Service, The Library of Congress, 2006.

302 National Coalition for Promoting Physical Activity. *Letter to Congress Concerning No Child Left Behind Legislation.* June 12, 2007.

303 Jeffrey, R.W. and J. Utter. "The Changing Environment and Population Obesity in the United States." *Obesity Research* 11, Suppl (2003): 12S-22S.

304 Ross, R. and I. Janssen. "Physical Activity, Fitness, and Obesity." Chap. 11, In *Physical Activity and Health,* edited by C. Bouchard, S. N. Blair and W. L. Haskell. 1st ed. Vol. 1, 173-189. Champaign, IL: Human Kinetics, 2007.

305 Hedley, A.A., C.L. Ogden, C.L. Johnson, M.D. Carroll, L.R. Curtin, and K.M. Fegal. "Prevalence of Overweight and Obesity Among U.S. Children, Adolescents, and Adults; 1999-2002." *Journal of the American Medical Association* 292, no. 23 (2004): 2847-2850.

306 Haskell, W. L., S. N. Blair, and C. Bouchard. "An Integrated View of Physical Activity, Fitness and Health." Chap. 23, In *Physical Activity and Health,* edited by C. Bouchard, S. N. Blair and W. L. Haskell. Vol. 1, 359-374. Champaign, IL: Human Kinetics, 2007.

307 U.S. Department of Transportation, Bureau of Transportation Statistics. *National Survey of Pedestrian and Bicyclist Attitudes and Behaviors Highlights Report.* Washington, D.C.: U.S. Department of Transportation, 2002.

308 Girl Scouts. "Girl Scouts and Congresswoman Mary Bono Join Forces to Support Children's Health." News Release, June 13, 2007. http://www.girlscouts.org/news/news_releases/2007/healthy_living.asp (accessed June 3, 2008).

309 GovTrack.us. H.R. 2677—110th Congress (2007): IMPACT Act, *GovTrack.us (database of federal legislation)*http://www.govtrack.us/congress/bill.xpd?bill=h110-2677&tab=summar (accessed Jun 3, 2008).

310 GovTrack.us. "H.R. 3895—110th Congress (2007): MEAL Act". *GovTrack.us (database of federal legislation)*http://www.govtrack.us/congress/bill.xpd?bill=h110-3895&tab=summary (accessed Apr 22, 2008)

311 110th Congress. *Complete Streets Act of 2008*. S. 2686. 2nd sess. (March 3, 2008).

312 Note: Some U.S. Centers for Disease Control and Prevention suggest the use of the term "cooperative agreement" and others suggest the use of the term "grant" for these programs.

313 U.S. Centers for Disease Control and Prevention. "CDC's State-Based Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases." U.S. Department of Health and Human Services. http://www.cdc.gov/nccdphp/dnpa/obesity/state_programs/index.htm (accessed June 3, 2008).

314 U.S. Centers for Disease Control and Prevention. "Our Mission: Four Strategies to Promote National School Health." U.S. Department of Health and Human Services. http://www.cdc.gov/HealthyYouth/about/mission.htm (accessed June 3, 2008).

315 U.S. Centers for Disease Control and Prevention (CDC). *Steps to a HealthierUS Program: Preventing Chronic Diseases Through Local Community Action.* Atlanta, GA: CDC, 2007.

316 U.S. Centers for Disease Control and Prevention. "FY 2009 Budget Submission Centers For Disease Control And Prevention Discretionary All-Purpose Table." U.S. Department of Health and Human Services. http://www.cdc.gov/fmo/PDFs/FY07-09_Functional_Table.pdf (accessed May 28, 2008).

317 Institute of Medicine. *Preventing Childhood Obesity: Health in the Balance.* Washington, D.C.: The National Academies Press, 2005.

318 National Center for Health Statistics. *Health, United States, 2006 with Chartbook on Trends in the Health of Americans.* Hyattsville, MD: U.S. Government Printing Office, 2006. http://www.cdc.gov/nchs/data/hus/hus06.pdf#073 (accessed April 28, 2008).

319 Institute of Medicine. *Preventing Childhood Obesity: Health in the Balance.* Washington, D.C.: The National Academies Press, 2005.

320 Institute of Medicine. *Progress in Preventing Childhood Obesity: How Do We Measure Up?* Washington, D.C.: The National Academies Press, 2007.

321 U.S. Department of Health and Human Services. *Healthy People 2010. 2nd Edition.* Washington, D.C.: U.S. Government Printing Office, 2000.

322 Office of the Surgeon General. *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity.* Rockville, MD: U.S. Department of Health and Human Services, 2001.

323 Perreault, L., Y. Ma, S. Dagogo-Jack, et al. "Sex Differences in Diabetes Risk and the Effect of Intensive Lifestyle Modification in the Diabetes Prevention Program." *Diabetes Care* (Epub ahead of print, Mar 20, 2008).

324 Kohl, H.W. "Physical Activity and Cardiovascular Disease: Evidence for a Dose Response." *Medicine and Science in Sports and Exercise* 33, no. Suppl 6 (2001): S472-S483.

325 Katzmarzyk, P.T. and I. Janssen. "The Economic Costs Associated with Physical Inactivity and Obesity in Canada: An Update." *Canadian Journal of Applied Physiology* 29 (2004): 90-115.

326 Pescatello, L.S., B.A. Franklin, R. Fagard, W.B. Farquhar, G.A. Kelley, and C.A. Ray. "American College of Sports Medicine Position Stand: Exercise and Hypertension." *Medicine and Science in Sports and Exercise* 36 (2004): 533-553.

327 Alcazar, O., R.C. Ho, and L.J. Goodyear. "Physical Activity, Fitness and Diabetes Mellitus." Chap. 21, In *Physical Activity and Health,* edited by C. Bouchard, S. N. Blair and W. L. Haskell. Vol. 1, 191-204. Champaign, IL: Human Kinetics, 2007.

328 Institute of Medicine. *Progress in Preventing Childhood Obesity: How Do We Measure Up?* Washington, D.C.: The National Academies Press, 2007.

329 Ibid.

330 Institute of Medicine. *Preventing Childhood Obesity: Health in the Balance.* Washington, D.C.: The National Academies Press, 2005.

331 Institute of Medicine. *Progress in Preventing Childhood Obesity: How Do We Measure Up?* Washington, D.C.: The National Academies Press, 2007.

332 Institute of Medicine. *Preventing Childhood Obesity: Health in the Balance.* Washington, D.C.: The National Academies Press, 2005.

333 U.S. Department of Housing and Urban Development. *Interim Survey of Children.* Washington, D.C.: U.D. Department of Housing and Urban Development, 2001. http://www.huduser.org/Research/IxIchildF.pdf (accessed April 30, 2008).

334 Abt Associates Inc. and the National Bureau of Economic Research. *Moving to Opportunity Interim Impacts Evaluation.* Washington, D.C.: U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 2003. http://www.huduser.org/Publications/pdf/MTOFullReport.pdf (accessed April 30, 2008).

335 Jones, B.H., M.W. Bovee, and J.J. Knapik. "Associations among Body Composition, Physical Fitness and Injury in Men and Women Army Trainees." Chap. 9, In *Body Composition and Physical Performance: Applications for the Military Services,* edited by B. M. Marriott and J. Grumstrup-Scott. Vol. 1, 141-174. Washington, D.C.: National Academies Press, 1992.

336 Hsu, L.L., R.L. Nevin, S.K. Tobler, and M.V. Rubertone. "Trends in Overweight and Obesity among 18-Year-Old Applicants to the United States Military, 1993-2006." *The Journal of Adolescent Health* 41, no. 6 (2007): 610-612.

337 Basu, S. "Military Not Immune From Obesity 'Epidemic.'" *U.S. Medicine,* March 25, 2004. http://www.usmedicine.com/dailyNews.cfm?dailyID=187 (accessed May 1, 2008).

338 Hoffman, M. "55 Percent of Airmen Overweight." *Air Force Times,* April 30, 2008. http://www.airforcetimes.com/news/2008/04/airforce_fat_AF_042808w/ (accessed April 30, 2008).

339 Cable News Network. "Discharged Servicemen Dispute Military Weight Rules." *CNN.com,* September 6, 2000. http://www.cnn.com/2000/HEALTH/09/06/military.obesity/index.html (accessed May 2, 2008).

340 U.S. Department of Defense PharmacoEconomic Center. "Pharmacoeconomic Analysis of Obesity Treatment." *PEC Update* 97, no. 5 (1997): 1-17. http://www.pec.ha.osd.mil/Updates/97%20PDFs/97-05.PDF (accessed June 4, 2008).

341 The average cost of recruiting and training a replacement enlisted member were adjusted for inflation for 2008 based on the change in the Consumer Price Index (CPI) from fourth quarter 2006 to fourth quarter 2007. TFAH used the Consumer Price Index calculation, which is the inflation measure used by the U.S. Department of Labor, Bureau of Labor Statistics. http://www.bls.gov/home.htm (accessed June 4, 2008).

342 Dall, T.M., Y. Zhang, Y.J. Chen, et al. "Cost Associated with Being Overweight and with Obesity, High Alcohol Consumption, and Tobacco Use within the Military Health System's TRICARE Prime-Enrolled Population." *American Journal of Health Promotion* 22, no. 2 (2007): 120-139.

343 Freking, K. "Government to Unveil Fitness Test for Adults." *The Associated Press,* May 14, 2008.

344 Ibid.

345 Center for Science in the Public Interest (CSPI). "Why It's Hard to Eat Well and Be Active in America Today." CSPI. http://www.cspinet.org/nutritionpolicy/food_advertising.html (accessed May 14, 2008).

346 Institute of Medicine. *Progress in Preventing Childhood Obesity: How Do We Measure Up?* Washington, D.C.: The National Academies Press, 2007.

347 Ibid.

348 National Governors Association. *Healthy America: Wellness Where We Live, Work and Learn. Call to Action: An Agenda for America's Governors.* Washington, D.C.: National Governors Association, 2006. http://www.nga.org/Files/pdf/0602HEALTHYAMCALL.PDF (accessed May 13, 2008).

349 Institute of Medicine. *Progress in Preventing Childhood Obesity: How Do We Measure Up?* Washington, D.C.: The National Academies Press, 2007.

350 National Governors Association. *Creating Healthy States: Actions for Governors.* Washington, D.C.: National Governors Association, 2006. http://www.nga.org/Files/pdf/0602CREATINGHEALTHYSTATESACTIONS.PDF (accessed May 13, 2008.)

351 Institute of Medicine. *Progress in Preventing Childhood Obesity: How Do We Measure Up?* Washington, D.C.: The National Academies Press, 2007.

352 Ewing, R. and B. McCann. *Measuring the Health Effects of Sprawl: A National Analysis of Physical Activity, Obesity and Chronic Disease.* Smart Growth America, Washington D.C., 2003. http://www.smart-growthamerica.org/report/HealthSprawl8.03.pdf. (May 1, 2008).

353 California Center for Public Health Advocacy, PolicyLink, and the UCLA Center for Health Policy Research. *Designed for Disease: The Link Between Local Food Environments and Obesity and Diabetes.* Davis, CA: California Center for Public Health Advocacy, 2008.

354 Sallis, J. F. and K. Glanz. "The Role of Built Environments in Physical Activity, Eating, and Obesity in Childhood." *The Future of Children* 16, no. 1 (2006): 89-108.

355 Ewing, R. and B. McCann. *Measuring the Health Effects of Sprawl: A National Analysis of Physical Activity, Obesity and Chronic Disease.* Smart Growth America, Washington D.C., 2003. http://www.smart-growthamerica.org/report/HealthSprawl8.03.pdf. (May 1, 2008).

356 Simon, P., C.J. Jarosz, T. Kuo, and J.E. Fielding. *Menu Labeling as a Potential Strategy for Combating the Obesity Epidemic: A Health Impact Assessment.* Los Angeles, CA: Los Angeles County Department of Public Health, 2008.

357 New York City Department of Health and Mental Hygiene. "Board of Health Votes to Require Chain Restaurants to Display Calorie Information in New York City." Press Release, January 22, 2008. http://www.nyc.gov/html/doh/html/pr2008/pr008-08.shtml (accessed May 1, 2008).

358 The Associated Press. "New York Begins Citing Restaurants That Lack Calorie Counts on Menus." *The Associated Press,* May 5, 2008.

359 Saul, S. "Conflict on the Menu." *The New York Times,* February 16, 2008.

360 Active Living by Design. "Active Seattle: Community Partnership." Robert Wood Johnson Foundation. http://www.activelivingbydesign.org/cgi-bin/albd.org/view_services.cgi?request=show_public_home&dept_id=121 (accessed June 3, 2008).

361 Moore, L. V. and A. V. Diez Roux. "Associations of Neighborhood Characteristics with the Location and Type of Food Stores." *American Journal of Public Health* 96, no. 2 (2006): 325-331.

362 Giang, T., A. Karpyn, H. Burton Laurison, A. Hiller, and R.D. Perry. "Closing the Grocery Gap in Underserved Communities: The Creation of the Pennsylvania Fresh Food Financing Initiative." *Journal of Public Health Management Practice* 14, no. 3 (2008): 272-279.

363 Ibid.

364 Baker, E. A., M. Schootman, E. Barnidge, and C. Kelly. "The Role of Race and Poverty in Access to Foods that Enable Individuals to Adhere to Dietary Guidelines." *Preventing Chronic Disease* 3, no. 3 (2006): A76.

365 Cubbin, C. and M.A. Winkleby. "Food Availability, Personal Constraints, and Community Resources." *Journal of Epidemiology and Community Health* 61, no. 11 (2007): 932.

366 The Reinvestment Fund. "Bringing Supermarkets to Underserved Communities." TRF. http://www.trfund.com/stories/supermarkets.html (accessed May 5, 2008).

367 Shulman, R. "Groceries Grow Elusive For Many in New York City, With Rents Soaring, Stores Are Being Demolished for Condos." *The Washington Post,* February 19, 2008.

368 Rivera, R. "Council Vote for Good Health May Weaken Business at Groceries in Poor Neighborhoods." *The New York Times,* February 28, 2008.

369 New Orleans Food Policy Advisory Committee. *Building Healthy Communities: Expanding Access to Fresh Food Retail.* New Orleans, LA: New Orleans Food Policy Advisory Committee, 2007. http://www.no-hunger.org/news/FPAC-pr/REPORT%20FINAL.pdf (accessed May 5, 2008).

370 Troeh, E. "Food Shopping a Challenge in New Orleans." *National Public Radio,* March 28, 2007.

371 Ibid.

372 Institute of Medicine. *Preventing Childhood Obesity: Health in the Balance.* Washington, D.C.: The National Academies Press, 2005.

373 Partnership to Fight Chronic Disease. *Keeping America Healthy: A Guide to Successful Programs.* Washington, D.C. June 2008.

374 Story, M. K.M. Kaphingst, and S. French. "The Role of Schools in Obesity Prevention." *The Future of Children,* 16, no. 1 (2006): 1-34.

375 Gleason, P., C. Suitor, and U.S. Food and Nutrition Service. *Children's Diets in the Mid-1990s: Dietary Intake and Its Relationship with School Meal Participation, Special Nutrition Programs, Report no. CN-01-CD1.* Alexandria, VA.: U.S. Dept of Agriculture, Food and Nutrition Service, 2001.

376 Brescoll, V.L., R. Kersh, and K.D. Brownell. "Assessing the Feasibility and Impact of Federal Childhood Obesity Policies." *The Annals of the American Academy of Political and Social Science* 615, no. 1 (2008): 178-194.

377 Nihiser, A.J., S.M. Lee, H. Wechsler, et al. "Body Mass Index Measurement in Schools." *The Journal of School Health* 77, no. 10 (2007):651-671.

378 Ibid.

379 Institute of Medicine. *Progress in Preventing Childhood Obesity: How Do We Measure Up?* Washington, D.C.: The National Academies Press, 2007.

380 Ibid.

381 Noguchi, Y. "Costs of Obesity Add to Business Overhead." *National Public Radio,* May 23, 2008.

382 Hertz, R.P., A.N. Unger, M. McDonald, M.B. Lustik, and J. Biddulph-Krentar. "The Impact of Obesity on Work Limitations and Cardiovascular Risk Factors in the U.S. Workforce." *Journal of Occupational and Environmental Medicine* 46, no. 12 (2004): 1196-1203.

383 Institute of Medicine. *Progress in Preventing Childhood Obesity: How Do We Measure Up?* Washington, D.C.: The National Academies Press, 2007.

384 American Academy of Pediatrics. "Policy Statement: Breastfeeding and the Use of Human Milk." *Pediatrics* 115, no. 2 (2005): 496-506.

385 Ibid.

386 U.S. Department of Health and Human Services. *Healthy People 2010. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health.* 2 vols. Washington, D.C.: U.S. Government Printing Office, November 2000.

387 Ryan A.S., W. Zhou, and M.B. Arensberg. "The Effect of Employment Status on Breastfeeding in the United States." *Women's Health Issues* 16, no. 5 (2006): 243-251.

388 National Conference of State Legislatures. "50 State Summary of Breastfeeding Laws - Updated April 2008." National Conference of State Legislatures. http://www.ncsl.org/programs/health/breast50.htm (accessed May 13, 2008).

389 Abdulwadud O.A. and M.E. Snow. "Interventions in the Workplace to Support Breastfeeding for Women in Employment." *Cochrane Database System Review* 18, no. 3 (2007):CD006177.

390 Ibid.

391 Finkelstein, E. A. and L. Zuckerman. *The Fattening of America: How the Economy Makes Us Fat, If It Matters, and What to Do About It.* Hoboken, NJ: John Wiley & Sons, Inc., 2008.

392 Consumers Union. *Out of Balance: Marketing of Soda, Candy, Snacks and Fast Foods Drowns Out Healthful Messages.* San Francisco, CA: Consumers Union, September 2005.

393 Center for Science in the Public Interest (CSPI). "Why It's Hard to Eat Well and Be Active in America Today." CSPI. http://www.cspinet.org/nutritionpolicy/food_advertising.html (accessed May 14, 2008).

394 Crain Communications Inc. and the Ad Age Group. "50th Annual 100 Leading National Advertisers." *Advertising Age,* June 27, 2005.

395 Institute of Medicine. *Food Marketing to Children and Youth: Threat or Opportunity?* Washington, D.C.: The National Academies Press, 2006, p.5.

396 Crain Communications Inc. and the Ad Age Group. "50th Annual 100 Leading National Advertisers." *Advertising Age,* June 27, 2005.

397 Hannaford Bros. "What is Guiding Stars?" Hannaford Bros. http://www.hannaford.com/Contents/Healthy_Living/Guiding_Stars/index.shtml (accessed May 29, 2008).

398 Hannaford Bros. "Grocery Shoppers Are Following Stars to More Nutritious Choices." News Release, September 6, 2007.

399 Ibid.

400 Garson, A. and C.L. Engelhard. "Attacking Obesity: Lessons from Smoking." *Journal of the American College of Cardiology* 49, no. 16 (2007): 1673-1675.

401 Ibid.

402 Torrey Marshall, M. "Development of 2007 Farm Bill: Prepared Statement by Maureen Torrey Marshall to the Committee on Agriculture, United States House of Representatives." Washington, D.C.: United Fresh Produce Association, June 26, 2006. http://www.unitedfresh.org/assets/files/Maureen%20Torrey%20Marshall%202007%20Farm%20Bill%20testimony.pdf (accessed May 14, 2008).

403 Hamm, M. W. "Linking Sustainable Agriculture and Public Health: Opportunities for Realizing Multiple Goals." *Journal of Hunger and Environmental Nutrition* (In Press): 1-14.

404 Ibid.

405 U.S. Food and Drug Administration. *Food Protection Plan: An Integrated Strategy for Protecting the Nation's Food Supply.* Washington, D.C.: U.S. Department of Health and Human Services, 2007.

406 Institute for Agriculture and Trade Policy. *Food without Thought: How U.S. Farm Policy Contributes to Obesity.* Minneapolis, MN: Institute for Agriculture and Trade Policy, March 2006.

407 Green, L. W. and J. M. Ottoson. "From Efficacy to Effectiveness to Community and Back: Evidence-Based Practice Vs Practice-Based Evidence." Presented at the Conference From Clinical Trials to Community: The Science Of Translating Diabetes and Obesity Research, Bethesda, MD, National Institutes of Health, January 12-13, 2004, http://www.niddk.nih.gov/fund/other/Diabetes-Translation/conf-publication.pdf (accessed May 15, 2008).

408 Schwartz, M.B. and Brownell, K.D. "Actions Necessary to Prevent Childhood Obesity: Creating the Climate for Change." *Journal of Law, Medicine & Ethics* 35, no. 1 (2007): 78-89.

409 George Washington Univesity School of Public Health and Health Services, Department of Health Policy. *Re-Visioning Success: How Stigma, Perceptions of Treatment, and Definitions of Success Impact Obesity and Weight Management in America. A Research Report for the STOP Obesity Alliance.* Washington, D.C.: George Washington University, 2007.

410 Ogden, C.L., M.D. Carroll, M.A. McDowell, and K.M. Flegal. *Obesity among Adults in the United States- No Change Since 2003-2004. NCHS Data Brief No 1.* Hyattsville, MD: National Center for Health Statistics, 2007.

411 U.S. Centers for Disease Control and Prevention. "Youth Risk Behavior Surveillance – United States, 2007." *Morbidity and Mortality Weekly Report* 57, no. SS-4 (2008): 1-136.

412 U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *National Survey of Children's Health 2003.* Rockville, MD: U.S. Department of Health and Human Services, 2005, http://www.mchb.hrsa.gov/overweight/techapp.htm (accessed April 22, 2008).

413 Ogden, C.L., M.D. Carroll, L.R. Curtin, et al. "Prevalence of Overweight and Obesity in the United States, 1999-2004." *Journal of the American Medical Association* 295, no. 13 (2006):1549-1555.

414 U.S. Centers for Disease Control and Prevention. "Youth Risk Behavior Surveillance – United States, 2007." *Morbidity and Mortality Weekly Report* 57, no. SS-4 (2008): 1-136.

415 U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *National Survey of Children's Health 2003.* Rockville, MD: U.S. Department of Health and Human Services, 2005.

416 American Obesity Association. "Obesity in Minority Populations." American Obesity Association. http://obesity1.tempdomainname.com/subs/fastfacts/Obesity_Minority_Pop.shtml. (accessed June 6, 2008).

417 American Diabetes Association. "Total Prevalence of Diabetes and Pre-Diabetes." American Diabetes Association. https://www.diabetes.org/diabetes-statistics/prevalence.jsp. (accessed June 9, 2008).

418 Olden, K. and S.L. White. "Health-Related Disparities: Influence of Environmental Factors." *Medical Clinics of North America* 89, no. 4 (2005): 721-738.

419 U.S. Centers for Disease Control and Prevention. "Prevalence of Regular Physical Activity Among Adults — United States, 2001 and 2005." *Morbidity and Mortality Weekly Report* 56, no. 46 (2007): 1209-1212.

420 U.S. Centers for Disease Control and Prevention. "Youth Risk Behavior Surveillance – United States, 2007." *Morbidity and Mortality Weekly Report* 57, no. SS-4 (2008): 1-136.

421 U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *National Survey of Children's Health 2003.* Rockville, MD: U.S. Department of Health and Human Services, 2005.

422 Kumanyika, S.K., M.C. Whitt-Glover, T.L. Gary, et al. "Expanding the Obesity Research Paradigm to Reach African American Communities." *Preventing Chronic Disease* 4, no. 4 (2007). http://www.cdc.gov/pcd/issues/2007/oct/07_0067.htm. (accessed June 6, 2008).

423 Ibid.

424 Yancey, A.K. and S.K. Kumanyika. "Bridging the Gap: Understanding the Structure of Social Inequities in Childhood Obesity." *American Journal of Preventive Medicine* 33, no. 4S (2007): S172-S174.

425 Loukaitou-Sideris, A. "Crime Prevention and Active Living." *American Journal of Health Promotion* 21, no. 4 Suppl (2007):380-389.

426 Day, K. "Active Living and Social Justice: Planning for Physical Activity in Low-Income, Black, and Latino Communities." *Journal of the American Planning Association* 72, no. 1 (2006):88-99.

427 Bhattacharya, J., T. DeLeire, S. Heider, and J. Currie. "Heat or Eat? Cold-Weather Shocks and Nutrition in Poor American Families." *American Journal of Public Health* 93, no. 7 (2003):1149-54.

428 Day, K. "Active Living and Social Justice: Planning for Physical Activity in Low-Income, Black, and Latino Communities." *Journal of the American Planning Association* 72, no. 1 (2006):88-99.

429 Kumanyika, S.K., M.C. Whitt-Glover, T.L. Gary, et al. "Expanding the Obesity Research Paradigm to Reach African American Communities." *Preventing Chronic Disease* 4, no. 4 (2007). http://www.cdc.gov/pcd/issues/2007/oct/07_0067.htm. (accessed June 6, 2008).

430 The Henry J. Kaiser Family Foundation. *Key Facts: Race, Ethnicity & Medical Care.* Washington, D.C.: The Henry J. Kaiser Family Foundation, 2007.

431 Ibid.

432 Neal, D., G. Magwood, C. Jenkins, and C.L. Hossler. "Racial Disparity in the Diagnosis of Obesity among People with Diabetes." *Journal of Health Care for the Poor and Underserved* 17, no. 2 Suppl (2006); 106-115.

433 Levy, B.T. and P.S. Williamson. "Patient Perceptions and Weight Loss of Obese Adults." *The Journal of Family Practice* 27, no. 3 (1988): 285-290.

434 Olden, K. and S.L. White. "Health-Related Disparities: Influence of Environmental Factors." *Medical Clinics of North America* 89, no. 4 (2005): 721-738.

435 Kumanyika, S.K., M.C. Whitt-Glover, T.L. Gary, et al. "Expanding the Obesity Research Paradigm to Reach African American Communities." *Preventing Chronic Disease* 4, no. 4 (2007). http://www.cdc.gov/pcd/issues/2007/oct/07_0067.htm. (accessed June 6, 2008).

436 Liu, J., K.J. Bennett, N. Harun, X. Zheng, J.C. Probst, and R.R. Pate. *Overweight and Physical Inactivity among Rural Children Aged 10-17: A National and State Portrait.* Columbia, SC: South Carolina Rural Health Research Center, 2007.

437 Ibid.

438 Tudor-Locke, C. J.J. Kronenfeld, S.S. Kim, M. Benin, and M. Kuby. "A Geographical Comparison of Prevalence of Overweight School-aged Children: The National Survey of Children's Health 2003." *Pediatrics* 120, no. 4 (2007): e1043-1050.

439 Lutfiyya, M.N., M.S. Lipsky, J. Wisdom-Behounek, and M. Inpanbutr-Martinkus. "Is Rural Residency a Risk Factor for Overweight and Obesity for U.S. Children?" *Obesity* 15, no. 9 (2007):2348-2356.

440 U.S. Department of Agriculture, Economic Research Service. *Rural Children at a Glance.* Washington, D.C.: USDA, 2005. Available at www.ers.usda.gov/publications/EIB1/EIB1.pdf.

441 Save the Children. *CHANGE for Children in Rural America.* Washington, D.C.: Save the Children, 2008. Available at http://www.savethechildren.org/programs/us-literacy-and-nutrition/STC_USP-CHANGE_brochure-FINAL-5-27-08.pdf.

442 Morton, L.W., and T.C. Blanchard. *Starved for Access: Life in Rural America's Food Deserts.* Columbia, MO: Rural Sociological Society, 2007. Available at http://www.ruralsociology.org/pubs/RuralRealities/RuralRealities1-4.pdf.

443 Walker, J.N., J.M. Del Rosso, and A.K. Held. *Nutrition and Physical Activity Assessment of Children in Rural America.* Westport, CT: Save the Children, 2005.

444 Save the Children. *CHANGE for Children in Rural America.* Washington, D.C.: Save the Children, 2008. Available at http://www.savethechildren.org/programs/us-literacy-and-nutrition/STC_USP-CHANGE_brochure-FINAL-5-27-08.pdf.

445 Valeo, T. "Growing Old, Baby-Boomer Style." *CBS NEWS Online,* January 10, 2006. http://www.cbsnews.com/stories/2006/01/10/health/webmd/printable1195879.shtml (accessed May 13, 2008).

446 Leveille, S.G., C.C. Wee, and L.I. Iezzoni. "Trends in Obesity and Arthritis among Baby Boomers and Their Predecessors, 1971-2002." *American Journal of Public Health* 95, no. 9 (2005): 1607-1613.

447 Valeo, T. "Growing Old, Baby-Boomer Style." *CBS NEWS Online,* January 10, 2006. http://www.cbsnews.com/stories/2006/01/10/health/webmd/printable1195879.shtml (accessed May 13, 2008).

448 Leveille, S.G., C.C. Wee, and L.I. Iezzoni. "Trends in Obesity and Arthritis among Baby Boomers and Their Predecessors, 1971-2002." *American Journal of Public Health* 95, no. 9 (2005): 1607-1613.

449 Centers for Medicaid and Medicare Services. *National Health Expenditure Projections 2007-2017.* Washington, D.C.: U.S. Department of Health and Human Services, 2007. http://www.cms.hhs.gov/NationalHealthExpendData/Downloads/proj2007.pdf (accessed May 13, 2008).

450 Kuczmarski, R.J., K.M. Flegal, S.M. Campbell, and C.L Johnson. "Increasing Prevalence of Overweight among U.S. Adults." *Journal of the American Medical Association* 272, no. 3 (1994): 205-211.

451 Daviglus, M.L., K. Liu, L.L Yan, et al. "Relation of Body Mass Index in Young Adulthood and Middle Age to Medicare Expenditures in Older Age." *Journal of the American Medical Association* 292, no. 22 (2004): 2743-2749.

452 National Institute on Aging, National Institutes of Health, and U.S. Department of Health and Human Services. *Growing Older in America: The Health and Retirement Study.* Washington, D.C. U.S. Department of Health and Human Services, 2007. http://hrsonline.isr.umich.edu/docs/databook/HRS_Text_WEB.pdf (accessed May 13, 2008).

453 Rotstein, G. "Boomer Health Decline Reported: Are They Less Well Than Earlier Group? Or is it Imagined?" *Pittsburgh Post Gazette,* March 18, 2007.

454 Rauscher, M. "Depression, Anxiety Tied to Unhealthy Habits." *Reuters,* March 5, 2008.

455 Ibid.

456 Ibid.

457 Petry, N. M., D. Barry, R. H. Pietrzak, and J. A. Wagner. "Overweight and Obesity are Associated with Psychiatric Disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions." *Psychosomatic Medicine* 70, no. 3 (2008): 288-297.

458 Ibid.

459 Strine, T. W., A. H. Mokdad, S. R. Dube, et al. "The Association of Depression and Anxiety with Obesity and Unhealthy Behaviors among Community-Dwelling U.S. Adults." *General Hospital Psychiatry* 30, no. 2 (2008): 127-137.

460 National Institutes of Health. "Stress, Obesity Link Found." U.S. Department of Health and Human Services. http://www.nih.gov/news/research_matters/july2007/07092007stress.htm. (accessed May 8, 2008).

461 Kuo, L., J. Kitlinska, J. Tilan, et al. "Neuropeptide Y Acts Directly in the Periphery on Fat Tissue and Mediates Stress-Induced Obesity and Metabolic Syndrome." *Nature Medicine* 13, no. 7 (2007): 803-811.

462 Zukowska, Z. "New Science behind Obesity: How Stress Can Make You Fat." Power Point Presentation.

463 Hudson, J., E. Hiripi, H. Pope, and R. Kessler. "The Prevalence and Correlates of Eating Disorders in the National Comorbidity Survey Replication." *Biological Psychiatry* 61, no. 3 (2007): 348-358.

464 American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorder,* 4th ed. Washington, D.C. American Psychiatric Association, 2000.

465 Pull, C. "Binge Eating Disorder." *Current Opinion in Psychiatry* 17, no. 1 (2004): 43-48.

466 Mayo Clinic.com. "Binge-eating disorder." Mayo Clinic.com. http://www.mayoclinic.com/health/binge-eating-disorder/DS00608. (accessed May 30, 2008).

467 World Health Organization (WHO). "Obesity and Overweight." WHO. http://www.who.int/mediacentre/factsheets/fs311/en/index.html (accessed May 19, 2008).

468 Ibid.

469 World Health Organization (WHO). "Global Strategy: Overall Goal." WHO. http://www.who.int/dietphysicalactivity/goals/en/index.html (accessed May 19, 2008).

470 World Health Organization (WHO). "Global Strategy on Diet, Physical Activity and Health: Member State Documents." WHO. http://www.who.int/infobase/dpas/dpas.aspx (accessed April 8, 2008).

471 Cross Government Obesity Unit, Department of Health and Department of Children, Schools and Families. *Healthy Weight, Healthy Lives: A Cross-Government Strategy for England.* London, England: H.M. Government, 2008.

472 BBC News. "Q&A: Anti-Obesity Strategy." *BBC.* January 23, 2008.

473 Cross Government Obesity Unit, Department of Health and Department of Children, Schools and Families. *Healthy Weight, Healthy Lives: A Cross-Government Strategy for England.* London, England: H.M. Government, 2008.

474 Comments by Tim Lobstein, International Obesity Taskforce, International Association for the Study of Obesity, participant in the panel "Changing the Food Environment," part of the Transatlantic Public Policy Approaches to Tackling Obesity and Diet-Related Disease conference held in Washington, D.C. on April 8, 2008.

475 Foresight. *Tackling Obesities: Future Choices - Summary of Key Messages.* London, England: Government Science Office, October 2007. http://www.foresight.gov.uk/Obesity/obesity_final/20.pdf (accessed May 19, 2008).

476 Comments by Dr. Will Cavendish, Director of Health and Well-Being, United Kingdom Department of Health, participant in the panel "Changing the Food Environment," part of the Transatlantic Public Policy Approaches to Tackling Obesity and Diet-Related Disease conference held in Washington, D.C. on April 8, 2008.

477 Cross Government Obesity Unit, Department of Health and Department of Children, Schools and Families. *Healthy Weight, Healthy Lives: A Cross-Government Strategy for England.* London, England: H.M. Government, 2008.

478 Comments by Dr. Michel Chauliac, Coordinator, National Nutrition and Health Program, French Ministry of Health, participant in the panel "Changing the Food Environment," part of the Transatlantic Public Policy Approaches to Tackling Obesity and Diet-Related Disease conference held in Washington, D.C. on April 8, 2008.

479 Reuters. "Child Obesity Rates Level Off in France." *International Herald Tribune,* May 15, 2008.

480 StataCorp. *Stata Statistical Software: Release 9.* College Station, TX: StataCorp LP, 2005.

481 The high blood pressure question is part of a rotating core of questions which is asked in alternating years by all states: in this case 2001, 2003, 2005 etc.

482 One can think about this as an upper and lower bound on the true estimate because it is reasonable to think that some borderline hypertensives would have answered "yes" in previous years while others would have answered "no".

483 For hypertension the 3-year averages were calculated over 2001/2003/2005 and 2003/2005/2007.

484 In all cases, observations with missing values accounted for less than 5 percent of the total number of observations.

485 Food and Nutrition Service, U.S. Department of Agriculture. "About FNS." USDA. http://www.fns.usda.gov/fns/about.htm (accessed May 1, 2008).

486 U.S. Department of Agriculture, Food and Nutrition Service. *National School Lunch Program.* Washington, D.C.: U.S. Department of Agriculture, July 2007. http://www.fns.usda.gov/cnd/Lunch/AboutLunch/NSLPFactSheet.pdf (accessed April 30, 2008).

487 Ibid.

488 Ibid.

489 U.S. Department of Agriculture, Food and Nutrition Service. "Child and Adult Care Food Program." USDA. http://www.fns.usda.gov/cnd/care/CACFP/aboutcacfp.htm (accessed April 30, 2008).

490 U.S. Department of Agriculture, Food and Nutrition Services. *WIC The Special Supplemental Nutrition Program for Women, Infants and Children.* Washington, D.C.: U.S. Department of Agriculture, 2006. http://www.fns.usda.gov/wic/WIC-Fact-Sheet.pdf (accessed June 3, 2008).

491 Committee to Review the WIC Food Packages, Food and Nutrition Board. *WIC Food Packages: Time for a Change.* Washington, D.C.: National Academies Press, 2005.

492 U.S. Department of Agriculture, Food and Nutrition Service. "WIC Program Participation and Costs." U.S. Department of Agriculture. http://www.fns.usda.gov/pd/wisummary.htm (accessed April 30, 2008).

493 U.S. Department of Agriculture, Food and Nutrition Service. "WIC Farmers' Market Nutrition Program." U.S. Department of Agriculture. http://www.fns.usda.gov/wic/FMNP/FMNPfaqs.htm (accessed April 30, 2008).

494 Ibid.

495 U.S. Department of Agriculture, Food and Nutrition Service. *Senior Farmers' Market Nutrition Program.* Washington, D.C.: U.S. Department of Agriculture, 2007.

496 Ibid.

497 U.S. Department of Agriculture, Food and Nutrition Service. "Commodity Supplemental Food Program." U.S. Department of Agriculture. http://www.fns.usda.gov/fdd/programs/csfp/about-csfp.htm (accessed April 30, 2008).

498 U.S. Department of Agriculture, Food and Nutrition Service. *Commodity Supplemental Food Program Fact Sheet.* Washington, D.C.: U.S. Department of Agriculture, April 2008. http://www.fns.usda.gov/fdd/programs/csfp/pfs-csfp.pdf (accessed April 30, 2008).

499 Ibid.

500 U.S. Department of Agriculture. "Center for Nutrition Policy and Promotion." U.S. Department of Agriculture. http://www.usda.gov/cnpp/. (accessed June 3, 2008).

501 TRICARE. "Healthy Choices Initiatives Inside DoD." TRICARE.mil. http://www.tricare.mil/healthychoices/init.cfm (accessed June 4, 2008).

502 Department of Defense Education Activity. "About DEA." U.S. Department of Defense. http://www.dodea.edu/home/about.cfm (accessed May 1, 2008).

503 Federal Trade Commission. "FTC, HHS Release Report on Food Marketing and Childhood Obesity: Recommends Actions by Food Companies and the Media." News Release, May 2, 2006. http://www.ftc.gov/opa/2006/05/childhoodobesity.shtm (accessed April 30, 2008).

504 Administration on Aging. "You Can." U.S. Department of Health and Human Services. http://www.aoa.gov/youcan/ (accessed April 29, 2008).

505 U.S. Centers for Disease Control and Prevention. "The Preventive Health and Health Services Block Grant." U.S. Department of Health and Human Services. http://www.cdc.gov/nccdphp/blockgrant/ (accessed April 29, 2008).

506 U.S. Centers for Disease Control and Prevention (CDC). *Steps to a HealthierUS Program: Preventing Chronic Diseases Through Local Community Action.* Atlanta, GA: CDC, 2007.

507 U.S. Centers for Disease Control and Prevention, National Center for Health Statistics. "About NCHS." U.S. Department of Health and Human Services. http://www.cdc.gov/nchs/about.htm (accessed April 29, 2008).

508 Institute of Medicine. *Progress in Preventing Childhood Obesity: How Do We Measure Up?* Washington, D.C.: The National Academies Press, 2007.

509 U.S. Centers for Disease Control and Prevention. "Healthier Worksite Initiative - About Us." U.S. Department of Health and Human Services. http://www.cdc.gov/nccdphp/dnpa/hwi/about_us/index.htm. (accessed June 26, 2008.)

510 U.S. Food and Drug Administration. *Calories Count: Report of the Working Group on Obesity.* Washington, D.C.: U.S. Department of Health and Human Services, March 2004. http://www.cfsan.fda.gov/~dms/owg-toc.html (accessed May 1, 2008).

511 U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition. "Spot the Block - Campaign at a Glance." U.S. Department of Health and Human Services. http://www.cfsan.fda.gov/~dms/spotcaag.html (accessed April 29, 2008).

512 U.S. Department of Health and Human Services. *U.S. Department of Health and Human Services Budget in Brief Fiscal Year 2009.* Washington, D.C.: U.S. Department of Health and Human Services, 2008. http://www.hhs.gov/budget/09budget/2009BudgetInBrief.pdf (accessed May 29, 2008).

513 Indian Health Service. "Health Promotion and Disease Prevention - Welcome." U.S. Department of Health and Human Services. http://www.ihs.gov/NonMedicalPrograms/HPDP/index.cfm (accessed June 27, 2008).

514 U.S. Department of Health and Human Services (DHHS). *Fiscal Year 2009 – Indian Health Service Justification of Estimates for Appropriations Committees.* Washington, D.C.: DHHS, 2008.

515 National Institutes of Health. "Strategic Plan for NIH Obesity Research." U.S. Department of Health and Human Services. http://obesityresearch.nih.gov/about/strategic-plan.htm (accessed April 29, 2008).

516 Office of the Surgeon General. "About the Office of the Surgeon General." U.S. Department of Health and Human Services. http://www.surgeongeneral.gov/aboutoffice.html#dutiessg. (accessed May 1, 2008).

517 U.S. Department of Health and Human Services, Office of the Surgeon General. "Childhood Obesity Prevention." U.S. Department of Health and Human Services. http://www.surgeongeneral.gov/obesityprevention.html (accessed April 29, 2008).

518 U.S. Department of Health and Human Services, Office of Women's Health. "WOMAN Challenge: Woman and Girls Out Moving Across the Nation." U.S. Department of Health and Human Services. http://www.4woman.gov/woman/index.cfm (accessed April 30, 2008).

519 United States Department of the Interior, Bureau of Land Management. *"Take It Outside: Children and Nature Initiative" Program Announcement and Incentive Funding, Project Criteria and Application Process Information, Information Bulletin No. 2008-045.* Washington, D.C.: U.S. Department of the Interior, 2008.

520 U.S. Department of the Interior, National Park Service. "Improve your Life: Be Fit, Have Fun, Get Healthy in Your National Parks." Press Release, June 12, 2006. http://home.nps.gov/applications/digest/headline.cfm?type=PressReleases&id=659&urlarea=npsnews (accessed April 30, 2008).

521 U.S. Department of the Interior, National Park Service. *Land and Water Conservation Fund State Assistance Program 2007 Annual Report.* Washington, D.C.: U.S. Department of the Interior, 2007.

522 U.S. Department of the Interior, National Park Service. "Current Funding for Grants." U.S. Department of the Interior. http://www.nps.gov/ncrc/programs/lwcf/funding.html (accessed May 28, 2008).

523 U.S. Department of the Interior, National Park Service. "Pathways to Healthy Living: Health Projects." U.S. Department of the Interior. http://www.nps.gov/ncrc/portals/health/healthprojects.htm (accessed April 30, 2008).

524 Ibid.

525 Frank, L. D., M. A. Andresen, and T. L. Schmid. "Obesity Relationships with Community Design, Physical Activity, and Time Spent in Cars." *American Journal of Preventive Medicine* 27, no. 2 (2004): 87-96.

526 U.S. Department of Transportation. "Mission and History." U.S. Department of Transportation. http://www.dot.gov/mission.htm (accessed April 30, 2008).

527 U.S. Department of Transportation, Federal Highway Administration. "Transportation Enhancement Activities." U.S. Department of Transportation. http://www.fhwa.dot.gov/environment/te/ (accessed April 30, 2008).

528 Federal Highway Administration. "Bicycle and Pedestrian Provisions in (SAFETEA-LU) Not Codified in Title 23." U.S. Department of Transportation. http://www.fhwa.dot.gov/environment/bikeped/legtealu.htm (accessed May 8, 2008).

529 Federal Highway Administration. "Fact Sheets on Highway Provisions." U.S. Department of Transportation. http://www.fhwa.dot.gov/safetealu/factsheets/nonmotorized.htm (accessed May 8, 2008).

530 Posey, C.L. "Deduction or Distraction? The U.S. Treasury's Stance on Obesity." *The CPA Journal,* July 2003.

531 U.S. Department of Veterans Affairs. "MOVE! Weight Management Program." U.S. Department of Veterans Affairs. (accessed June 3, 2008).

532 U.S. Department of Veterans Affairs. "HealthierUS Veterans: A Prescription for Health." U.S. Department of Veterans Affairs. http://www.healthierusveterans.va.gov/PrescriptionForHealth.asp (accessed May 1, 2008).

1730 M Street, NW, Suite 900
Washington, DC 20036
(t) 202-223-9870
(f) 202-223-9871