

NEW YORK STATE
STRATEGIC PLAN

for

**Overweight
and Obesity**
Prevention

Developed through partnerships with the
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Introduction

- A. Executive Summary
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A. Executive Summary

The epidemic of overweight and obesity has become one of the most critical public health threats for New Yorkers and Americans. This epidemic has affected all age groups, boys and girls, men and women, and reached across racial/ethnic and socioeconomic groups. Obesity rates increased slightly during the 1970's, but escalated for both children and adults during the 1980's and 1990's. While the rate of increase may be slowing among adults, there are no signs that the epidemic of childhood obesity is abating. In fact, overweight and obesity are increasing problems in young children, setting the stage for the obesity epidemic to continue far into the future. As a result, for the first time in history, children are predicted to have a shorter life expectancy than their parents.

By 2010, some have predicted that the root causes of the obesity epidemic—poor nutrition and physical inactivity—will become the leading underlying causes of preventable deaths in the U.S. The costs, both financial and personal, associated with obesity are also increasing, in part, because obesity leads to higher rates of many diseases, including heart disease, stroke, diabetes, cancer, asthma, arthritis, disability and a number of psychological conditions, including depression.

Stopping the obesity epidemic will not be easy, but there are precedents for

success in other public health endeavors. It will require the input, hard work, skills, talents and perseverance of many people, a wide array of organizations and groups, including the medical, educational, non-profit and business communities, academia and government. While there is a role for individual behavior change, population-focused prevention efforts require both decreasing environmental barriers to and supporting healthy food choices and physically active lifestyles. A multi-faceted public health policy campaign is needed, with special attention to selected groups, including Hispanics, Blacks, and Native Americans, and communities experiencing health disparities and social and physical environments unsupportive of healthy eating and physical activity.

To address this important issue in New York State (NYS), the State Department of Health coordinated a strategic planning process involving a broad array of stakeholders and experts represented by the 33-member steering committee, six workgroups, two site-specific workgroups and 14 community forums held throughout New York State. The discussions identified lack of funding and resources to implement efforts in each community, transportation issues, school non-compliance with state policies governing physical education, and lack of

communication between parents and children as barriers to improving physical activity and nutrition to prevent obesity.

To decrease overweight and obesity, community participants identified their top three priorities as: 1) increase the proportion of New Yorkers who are physically active; 2) increase perception of obesity as a public health risk and use of Body Mass Index to improve early recognition, and 3) increase access to healthy food choices, particularly by low-income populations.

Participants expressed the most interest in 1) improving access to physical activity opportunities, 2) fruit and vegetable consumption, and 3) improving the school environment to promote physical activity and improved nutrition.

This report summarizes the deliberations of this working group, outlines goals and objectives, and highlights strategies and action steps that are critical to controlling this epidemic.

Strategic Plan Vision

All New Yorkers will achieve and maintain a healthy weight.

Strategic Plan Mission

To decrease the prevalence of overweight and obesity, and to reduce the burden of obesity-related diseases by improving healthy eating and increasing physical activity.

Goal 1

Increase the awareness of overweight and obesity as a major public health threat.

Objective 1a

Increase the perception that overweight and obesity are significant public health risks by a wide array of stakeholders including the healthcare community and the general public.

Objective 1b

Increase the proportion of persons who know the health risks (hypertension, dyslipidemia, insulin resistance, etc.) and diseases (i.e., diabetes, cardiovascular disease, cancer, arthritis, asthma, disability) associated with overweight and obesity.

Objective 1c

Increase the proportion of persons aware of the economic impact (i.e., increased healthcare and insurance costs, increased absenteeism) associated with overweight, obesity and obesity-related diseases.

Objective 1d

Increase the proportion of persons who know the environmental, socioeconomic and personal factors (poor nutrition, physical inactivity) that contribute to obesity.

Goal 2

Increase early recognition of overweight and/or excessive weight gain.

Objective 2a

Increase the proportion of healthcare providers who routinely monitor, track and inform patients and/or parents of weight gain or growth:

- ◆ For adults, using Body Mass Index (BMI) to screen for overweight and obesity
- ◆ For children, aged 2-18 years, using gender-specific BMI-for-age-percentiles
- ◆ For infants, aged 0-2 years using gender-specific weight-for-height percentiles
- ◆ For pregnant women, using weight gain charts based on a woman's pre-pregnancy BMI

Objective 2b

Increase the proportion of adults who know their own weight status (based on BMI) and their children's weight status (based on gender-specific BMI-for-age percentile).

Objective 2c

Increase the proportion of schools that collect accurate height and weight measurements (required by New York State Education Department at school entrance and in grades 1, 3, 7 and 10), calculate BMI, and communicate pupils' weight status (based on BMI percentile) to the NYS Department of Health.

Objective 2d

Increase the proportion of [pregnant women] who gain the optimal recommended amount of weight [as defined by Institute of Medicine (IOM) Guidelines] based on a woman's pre-pregnant weight during their pregnancies (HP 2010, 16-12).

Goal 3

Improve management (medical and non-medical) of people who are overweight or obese and those with obesity-related diseases.

Objective 3a

Increase the proportion of people appropriately counseled by medical and allied healthcare providers about achieving and maintaining a healthy weight.

Objective 3b

Improve management of obesity-related diseases.

Objective 3c

Reduce barriers that impede medical and allied healthcare professionals from managing (providing behavioral, nutritional, medical and surgical treatment) individuals who are overweight or obese.

Goal 4

Increase initiation, exclusivity and duration of breastfeeding during infancy.

Objective 4a

Increase the proportion of mothers who exclusively breastfeed their babies in early postpartum to 75% and at 6 months to 50%, and increase the proportion of mothers who breastfeed at one year of age to 25% (HP 2010, 16-19).

Objective 4b

Reduce racial/ethnic, income, and age disparities in breastfeeding rates.

Objective 4c

Increase the proportion of medical and allied healthcare providers who counsel women about breastfeeding during prenatal period, at the time of delivery and postpartum and who provide lactation support services.

Objective 4d

Increase protection, promotion and support for breastfeeding by mothers in the workplace.

Goal 5

Improve lifelong healthy eating.

Objective 5a

Increase awareness and knowledge about healthy eating.

Objective 5b

Increase the proportion of persons who balance caloric intake with energy expenditure to achieve and maintain a healthy weight.

Objective 5c

Increase the proportion of persons aged 2 years and older who meet dietary recommendations for calcium [by increasing consumption of low-fat or fat-free milk or dairy products] (HP 2010, 19-11).

Objective 5d

Increase the proportion of persons aged 2 years and older who consume at least three daily servings of vegetables, with at least one-third being dark green or orange vegetables (HP 2010, 19-6), and at least 2 servings per day of fruits (HP 2010, 19-5).

Objective 5e

Increase the proportion of children and adolescents whose intake of meals and snacks at [childcare centers,] schools, [and after-school programs] contributes to good overall dietary quality (HP 2010, 19-15).

Objective 5f

Increase food security among [NYS] households and, in so doing, reduce hunger (HP 2010, 19-18).

Goal 6

Increase lifelong physical activity.

Objective 6a

Increase the proportion of adolescents and adults aware of current physical activity guidelines and recommendations.

Objective 6b

Increase the proportion of adults aged 18 and older who meet current recommendations for physical activity, specifically:

- ◆ Reduce to at most 20 percent the proportion of adults aged 18 and older who engage in no leisure-time physical activity (HP 2010, 22-1) (See Figure 19).
- ◆ Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day (HP 2010, 22-2), and/or vigorous physical activity for at least 20 minutes per day (HP2010, 22-3).

Objective 6c

Increase the proportion of worksites offering employer-sponsored physical activity and fitness programs (HP 2010, 22-13).

Objective 6d

Increase the proportion of [children and] adolescents [aged 2-18] years who engage in moderate physical activity for at least [60] minutes per day on five or more of the previous seven days (HP 2010, 22-6; NASPE).

Objective 6e

Increase the proportion of schools that comply with NYS Department of Education physical education regulations.

Objective 6f

Increase the proportion of [children and] adolescents who spend at least 50% of school physical education class time being physically active (HP 2010, 22-10).

Objective 6g

Increase the proportion of [NYS's] public and non-public schools that require daily physical education classes for all students (HP 2010, 22-8).

Objective 6h

Increase the number/proportion of trips made by walking, bicycling [and other means of self-propulsion (e.g., wheelchairs, rollerblading)] (HP 2010, 22-14 and 22-15).

Goal 7

Decrease exposure to television and other recreational screen time.

Objective 7a

Increase awareness and knowledge of recommendations to limit television viewing and other recreational screen time.

Objective 7b

Increase the proportion of [children,] adolescents, [and adults] who view television [and other recreational screen time] no more than two hours per day (HP 2010, 22-11; AAP).

Objective 7c

Increase media literacy.

Objective 7d

Decrease exposure by children and youth to advertisement for products associated with increased risk of obesity.

Goal 8

Increase policy and environmental supports for physical activity and healthy eating, including breastfeeding.

Objective 8a

Increase the number/proportion of institutional and environmental policies that promote energy balance.

Objective 8b

Increase the proportion of childcare centers, schools and worksites that have 1) assessed, 2) developed plans, 3) implemented and 4) evaluated changes to their nutrition and physical activity environments.

Objective 8c

Increase the availability and accessibility of affordable, healthy foods and beverages.

Objective 8d

Increase the availability and accessibility of affordable places to be physically active.

Objective 8e

Increase advocacy and public support for initiatives, policies and legislation that eliminate barriers to healthy food choices and physically active lifestyles.

Goal 9

Increase and maintain effective public health responses to the obesity epidemic in NYS.

Objective 9a

Increase availability, accessibility and sustainability of support and financial resources for overweight/obesity prevention activities.

Objective 9b

Strengthen statewide, regional and local infrastructure to promote coordination among partners across the state and within each region.

Objective 9c

Enhance communication and collaboration among the overweight/obesity prevention program, community partners and statewide stakeholders.

Goal 10

Expand surveillance and program evaluation to prevent overweight and obesity.

Objective 10a

Analyze, synthesize and disseminate existing data related to overweight, obesity, obesity-related diseases, nutrition, physical activity, television viewing, breastfeeding, food insecurity and related issues to monitor progress toward achieving program goals.

Objective 10b

Summarize and disseminate science-based best practices for the prevention of overweight and obesity on an ongoing basis.

Objective 10c

Enhance, expand and strengthen surveillance to ensure that information is available across the population and within defined geographic areas.

Objective 10d

Develop and implement data collection systems to evaluate the impact of the overweight and obesity prevention program.

Objective 10e

Evaluate the design, implementation and effectiveness of interventions to reduce overweight and obesity and to improve health outcomes.

Objective 10f

Increase the number and diversity of obesity prevention programs across age, gender, educational levels, income levels and racial/ethnic groups that are being evaluated.

B. Foreword

The epidemic of overweight and obesity has become one of the most critical public health threats for New Yorkers and Americans. This epidemic has affected all age groups, boys and girls, men and women, and reached across racial/ethnic and socioeconomic groups. Obesity rates increased slightly during the 1970's, but escalated for both children and adults during the 1980's and 1990's. While the rate of increase may be slowing among adults, there are no signs that the epidemic of childhood obesity is abating. In fact, overweight and obesity are increasing problems in young children, setting the stage for the obesity epidemic to continue far into the future. As a result, for the first time in history, children are predicted to have a shorter life expectancy than their parents.

By 2010, some have predicted that the root causes of the obesity epidemic—poor nutrition and physical inactivity—will become the leading underlying causes of preventable deaths in the U.S. The costs, both financial and personal, associated with obesity are also increasing, in part, because obesity leads to higher rates of many diseases, including heart disease, stroke, diabetes, cancer, asthma, arthritis, disability and a number of psychological conditions, including depression.

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for success in other public health endeavors. It will require the input, hard work, skills, talents and perseverance of many people, a wide array of organizations and groups, including the medical, educational, non-profit and business communities, academia and government. While there is a role for individual behavior change, population-focused prevention efforts require both decreasing environmental barriers to and supporting healthy food choices and physically active lifestyles. A multi-faceted public health policy campaign is needed, with special attention to selected groups, including Hispanics, Blacks, and Native Americans, and communities experiencing health disparities and social and physical environments unsupportive of healthy eating and physical activity.

Beginning in January 2003, the New York State Department of Health embarked on a strategic planning process to address the problem of overweight and obesity in NYS. In February 2003, the department summarized current efforts in nutrition, physical activity and obesity prevention and applied for and received funding from The Centers for Disease Control and Prevention (CDC) Division of Nutrition and Physical Activity in July 2003.

The following steps were undertaken to develop a strategic plan to prevent overweight and obesity in New York State.

1. In August 2003, a Steering Committee (**Appendix I**) comprised of 32 experts from the medical, professional and business communities, governmental agencies, and advocates provided guidance to the Department in the planning process.

2. An inventory of NYS resources to prevent or reduce overweight or obesity was completed in the fall of 2003. A Planning Team (**Appendix II**) guided the plan development process.

3. Six workgroups were formed based on recommendations by the CDC Physical Activity and Nutrition Program that four key focus areas (breastfeeding, television viewing, physical activity and fruits and vegetables) be included.

Key Focus areas

- ◆ Critical periods (perinatal period, infancy and breastfeeding)
- ◆ Nutrition and dietary determinants (caloric balance, fruits and vegetables)
- ◆ Physical activity
- ◆ Television viewing and media
- ◆ Surveillance and program evaluation

Each workgroup developed goals, specific objectives and strategies guided by the research evidence. State and national data, surveillance and evaluation findings, published professional guidelines, previous NYS chronic disease prevention plans (cancer, cardiovascular disease, diabetes, arthritis and disability), obesity prevention plans

from other states (such as Pennsylvania, Massachusetts, Colorado, Texas, and North Carolina), the New England Coalition for Health Promotion and Disease Prevention's (NECON) "Strategic Plan for the Prevention and Control of Overweight and Obesity in New England" (2003) and the Institute of Medicine's (IOM) draft report, "Preventing Childhood Obesity: Health in the Balance" (2004) were used to inform this process and the resultant goals and strategies.

4. To elicit community input, 14 Community Forums were held across NYS between December 2003 and February 2004. Approximately 300 community members participated in these forums to identify gaps in the proposed plan goals and strategies, to provide comments and feedback, and to identify and recruit additional partners and stakeholders for plan implementation at the state and local levels. A community forum participant database was developed to assess the diversity of representation, recruit local and regional partners, and identify priority objectives and issues across different regions of the state.

5. In October 2004, two site-specific workgroups were held to provide additional opportunities for stakeholders to review the draft plan goals, objectives and strategies and to offer continued involvement and participation in developing the plan

and guidance in implementation priorities. One workgroup focused on school and childcare settings and included professionals from the educational community and related organizations. The second workgroup focused on the healthcare and worksite settings. Participants included NYS representatives of professional and medical organizations such as the Medical Society of the State of New York, healthcare representatives of NYS businesses and employer groups (including the NYS Business Council) and individual businesses, medical

directors of managed care plans and university-based obesity researchers. Over 75 people participated in these two one-day meetings.

6. This report, the *New York State Strategic Plan for Overweight and Obesity Prevention*, was published in early 2005. It is only the first step toward achieving the vision that all New Yorkers will achieve and maintain a healthy weight. Implementing the proposed strategies will require continued and sustained commitment from a wide array of stakeholders.

C. Call to Action

The goals and strategies outlined in this report set forth an ambitious agenda that must be undertaken in order to achieve the vision of a healthy New York. No single individual, organization, agency, community, political jurisdiction, or elected official can bring about such far-reaching changes alone. Collaboration, teamwork and resource-sharing will be required at every level: among state and local agencies, provider and consumer groups, business leaders, education and medical communities, advertising and marketing groups, the media, and government.

The real work in any planning process is in the implementation. This Obesity Prevention Plan is New York's vision of what needs to be done to achieve success. This Plan is not intended to define

the multiple steps and actions needed to realize implementation but rather provide New Yorkers with a road map to guide the work. The Steering Committee will be responsible for providing advice and organizing statewide, regional, and local implementation plans including mobilizing partners, identifying priorities and monitoring and measuring successes. Obesity Prevention Plan Implementation Teams will be created around the ten broad goal areas.

All organizations and all individuals are invited to participate in one or more of these Teams. Indeed, more participation is desirable and will be promoted. It is only by working together that the vision that *all New Yorkers will achieve and maintain a healthy weight* will become a reality for our state's citizens.

The Broome County Healthy Heart Program

The Broome County Healthy Heart Program implemented an 8-week community-based campaign to increase walking among 40-65 year olds called "BC Walks." The campaign included paid media (TV, radio and print), as well as unpaid media coverage, a speakers' bureau, and numerous community events. A pre and post survey of a random sample of the target audience found that 47% of Broome County respondents had increased their total weekly walking time compared to 35% in the comparison community, and 41% of Broome County respondents increased their weekly walking by at least 30 minutes compared with 30% in the comparison community.

Background

- A. Obesity as a Major Public Health Threat
- B. Early Recognition of Overweight and Obesity
- C. Obesity-related Diseases
- D. Breastfeeding
- E. Nutrition and Dietary Determinants
- F. Physical Activity
- G. Television Viewing, Media, Advertising
- H. Policy and Environmental Changes
- I. Surveillance, Program Evaluation and Research

A. Obesity as a Major Public Health Threat

Causes of Obesity Epidemic

Overweight and obesity are caused by a complex array of genetic, metabolic, and behavioral interactions across a number of relevant social, environmental and policy contexts that influence eating and physical activity. The general consensus of obesity experts and researchers is that humans evolved to live in a very different environment than that in which they find themselves today. For hundreds of thousands of years, food was scarce and humans needed to work hard physically to survive. Because famine was not uncommon, there was biological pressure and survival advantage to be able to store energy as fat for the lean times. Unfortunately, there are parts of the world where famine still is commonplace. But for most of the Western world, food is now abundant, cheap and very available, while very little physical activity is required in the typical course of daily living. Over the past three decades, increases in the proportion of meals eaten outside of the home, parental working hours, television and other media use, changes in marketing patterns and the school food environment have exacerbated the health effects of this historic shift in

living conditions. The world has become an adverse environment for maintaining healthy body weight.

The profound increases in overweight and obesity rates seen in NYS and U.S. children and adults have also been seen internationally, both in developed and in developing countries. The rapidly increasing prevalence of obesity, with its associated adverse health, social and economic consequences, calls for immediate action based on the best available evidence as opposed to waiting for the best possible evidence (IOM, 2004). As we move forward, however, continued evaluation will be needed to assess the impacts of interventions and changes in policies and legislation.

Prevalence

Overweight and obesity are relative and span a continuum. Prevalence rates, however, require and depend on the definitions used. The most common and currently recommended definitions of overweight and obesity are based on a ratio of weight to height called Body Mass Index (BMI) (**Table 1**).

Experts at the CDC have been reluctant to classify children and teens as

Table 1. Classifications for weight status based on Body Mass Index (BMI)

	Adults (based on BMI)	Children, aged 2–18 years (based on sex-specific BMI-for-age percentiles)
Underweight	Less than 18.5 kg/m ²	Less than 5 th percentile
Healthy weight	18.5 – 24.9 kg/m ²	5 th to less than 85 th percentile
Overweight	25.0 – 29.9 kg/m ²	85 th to less than 95 th percentile
Obese (Class 1)	30.0 – 34.9 kg/m ²	95 th percentile or higher
Obese (Class 2)	35.0 – 39.9 kg/m ²	—
Obese (Class 3)	40.0 kg/m ² or higher	—

Source: NIH Publication no. 98-4083. Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report. NHLBI (National Heart, Lung, and Blood Institute); 1998.

obese, suggesting instead that the terms “at-risk of overweight” and “overweight” be used because the ratios reflect measures of weight, not fat. They also raised concerns about possibly labeling children. The Institute of Medicine’s (IOM) report “Preventing Childhood Obesity” (2004), however, argues that “childhood obesity” is a stronger term because it conveys a better sense of health risks than does “childhood overweight.” BMI, however, is more highly correlated with body fat (National Research Council 1989), and associated with increased risk of hypertension, dyslipidemia, glucose intolerance, type 2 diabetes and arthritis in children and teens. In adults, the BMI cut point of 25 kg/m² (which is approximately 10% above ideal body weight) and 30 kg/m² are based on epidemiologic data showing

increasing morbidity (cardiovascular disease, diabetes, cancer, arthritis and disability) and mortality at a BMI greater than 25 kg/m², and even greater increases in risk for individuals with a BMI above 30 kg/m² (NHLBI, 1998).

The increased overweight and obesity prevalence among adult New Yorkers is similar to that seen among adults in the U.S. Based on self-reported height and weight, the proportion of NY adults who are either overweight or obese (i.e., BMI greater than 25 kg/m²) increased 36%, from 42% to 57% between 1990 and 2002 respectively. During this same 13-year time period, the proportion of NY adults who would be classified as obese (i.e., BMI greater than 30 kg/m²) more than doubled, increasing from 10% to 21% (**Figure 1**).

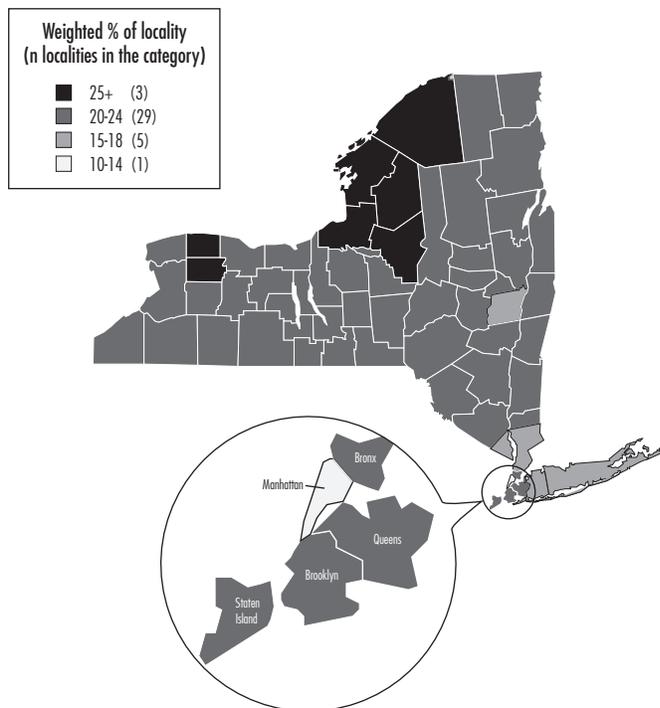
Figure 1: Trends in overweight and obesity among New York State adults

Source: 1990-2003 Behavioral Risk Factor Surveillance System (BRFSS)



Figure 2: Obesity among New York adults by locality

Sources: NYS, BRFSS 2003, age-adjusted to the 2000 U.S. population, based on self-reported height and weight. US- NHANES, 1999-2002, J Am Med Assn 2004;291:2847-2850.



The prevalence rates of obesity in NYS were comparable to the national rates in 2001 based on self-reported height and weight (20.9% vs. 20.3% respectively) (BRFSS, 2001).

Prevalence rates are lowest in the borough of Manhattan, in New York City, shown in light blue (10% to 14%) and highest (25% or higher, shown in red) in Orleans, Genesee, St. Lawrence, Jefferson, Lewis, Oswego, and Oneida counties of upstate NY. Hispanics have the highest prevalence of overweight (46%) of any ethnic group in NYS, while Blacks have the highest prevalence of obesity (30%). The prevalence of overweight and obesity in men is higher than women (65% vs. 49% respectively). However, the prevalence of obesity is higher among women compared to men (19% vs. 16% respectively). Based on measured height and weight (NHANES 1999-2004) the percentage of U.S. adults who are obese (30.4%) is more than double the Healthy People 2010 target level of 15% (Figure 3).

Obesity rates based on self-reported height and weight data (BRFSS) for NYS and the U.S. also exceed the target level. The percentages of adults at a healthy weight (i.e., BMI between 18.5 kg/m² and 24.9 kg/m²) are 33% based on measured data for U.S. adults, and 43%, based on self-reported height and weight for NYS adults. These rates are much lower than the Healthy People 2010 target of 60% (Figure 4).

It should be noted that data based on measured height and weight are approximately 50% higher than rates based on self-reported data. In NHANES 1999-2000, obesity prevalence did not differ across racial/ethnic categories for adult men. But among adult women, non-Hispanic Black women had the highest obesity rate (50.8%), White women had the lowest, (30.6%), and the prevalence of obesity among Hispanic women fell in between (40.1%).

Figure 3: Proportion of adults aged 20 years and older who are identified as obese (HP 2010 Objective 19-2)

Sources: NYS, BRFSS 2003, age-adjusted to the 2000 U.S. population, based on self-reported height and weight. US- NHANES, 1999-2002, J Am Med Assn 2004;291:2847-2850

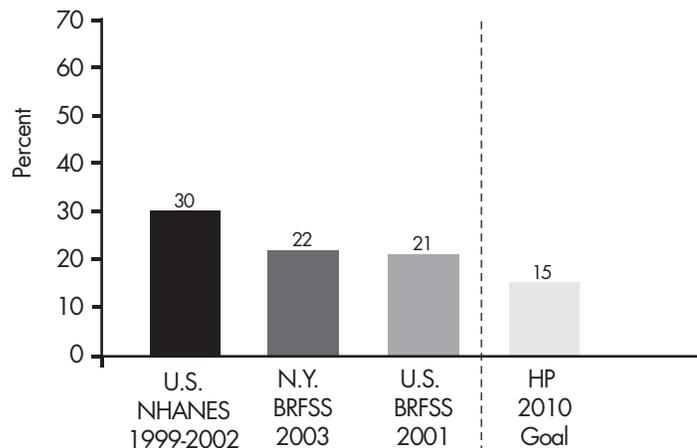


Figure 4: Proportion of adults, ages 20 years and older, at a healthy weight* (HP Objective 19-1)

Source: NY U.S. BRFSS 2003, age-adjusted to the 2000 U.S. population. NHANES 1999-2002; J Am Med Assn 2004; 291: 2847-2850

*The NY data also includes individuals with a BMI less than 18.5 kg/m².

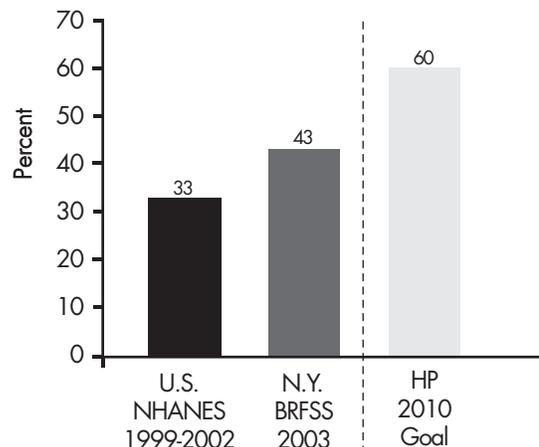


Figure 5: Trends in overweight and obesity among high school students in New York City and New York State, 1999-2003

Source: Youth Risk Behavior Surveillance System (YRBSS) - 1999, 2001, and 2003

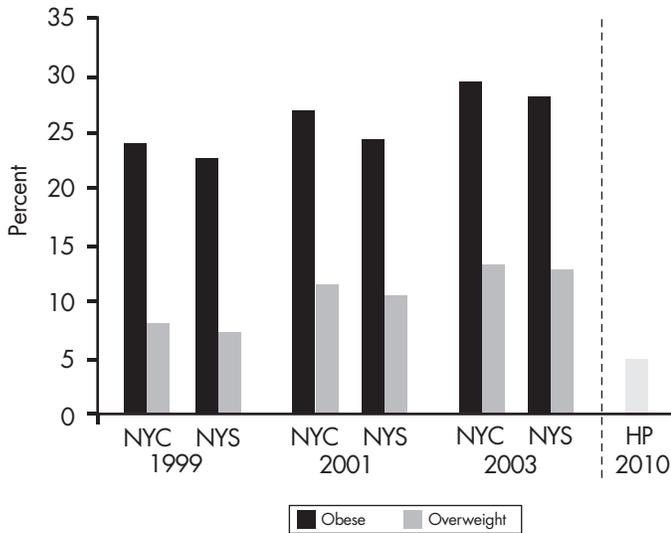
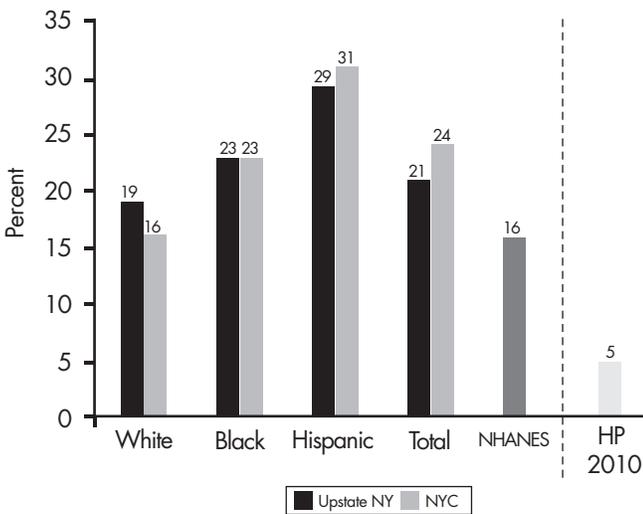


Figure 6: Proportion of elementary school children in upstate NY and New York City who are obese

Source: Upstate NY, Grade 3 Oral Health, Physical Activity, and Nutrition Survey, 2004. New York City; Am J Public Health, 2004; 94: 1498. U.S.: NHANES, 1999-2002, J Am Med Assn 2004; 291: 2847-2850.



Increasing obesity rates are also affecting children and adolescents in the U.S. and NYS. The prevalence of obesity among children and teenagers in the U.S. has tripled in the past 20 to 30 years to 16.5% among children, aged 6-19 years, and doubled to 10.3% among preschool children, aged 2-5 years (Hedley et al., 2004). Based on self-reported height and weight, the prevalence of high school students in New York City and upstate New York who are overweight or obese increased between 1999 and 2003 (**Figure 5**).

Recent data indicate that 29.5% of high school students in New York City and 28.3% of high school students in upstate New York are overweight or obese. As in adults, minority youth are disproportionately affected by overweight and obesity. The rate of obesity was highest for Black teens (12.2%), followed by Hispanic teens (10.0%) and White teens (7.4%). Close to 20% of Hispanic teens and Black teens are overweight compared to 13% of White youth (YRBSS).

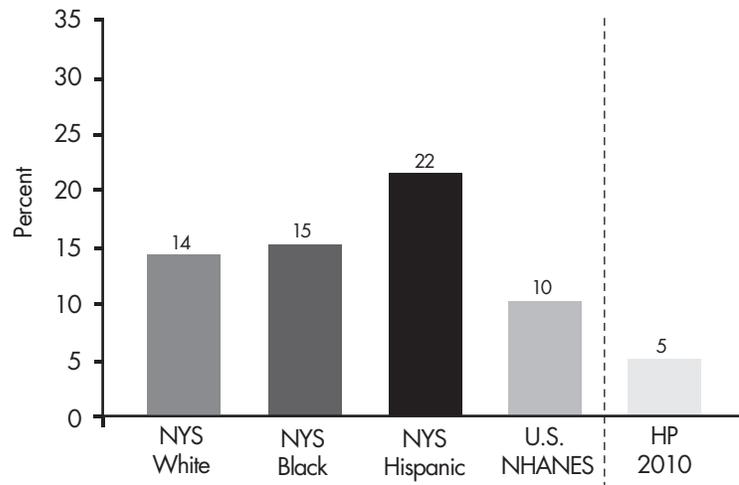
The prevalence of obesity among elementary school children in NYS has also increased dramatically between 1988 and 2003-2004. Based on measured height and weight in 2003, 24% of elementary school children (grades K-5) in New York City were obese (**Figure 6**).

In 2004, 21% of third grade school children in upstate New York were obese. These prevalence rates greatly exceed the prevalence reported for the U.S. (15.8%) in NHANES 1999-2002, and the Healthy People 2010 target of 5%. In both New York City and upstate NY, prevalence rates differed across racial/ethnic categories; Hispanics have the highest rates (29.3% and 31.1%), with rates for non-Hispanic Whites the lowest (18.7% and 15.9%), and rates for non-Hispanic Blacks in between (22.5% and 22.8%, respectively).

For preschool-age children in NYS, data are only available for children from low-income families enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The prevalence of obesity among children aged 2 to 5 years was 50% higher among low-income children in NYS WIC (Pediatric Nutrition Surveillance System (PedNSS), 2003) than among the U.S. sample (NHANES: 1999-2002) 16.1% vs. 10.3%). In 2003, 16.1% of children aged 2 up to 5 years were obese, and another 16.1% were overweight. Obesity prevalence rates among the NYS children were highest for Hispanics (21.7%), lowest for Whites (12.8%), and in between for Blacks (15.4%) (**Figure 7**). These rates all exceed the Healthy People 2010 target of 5%.

Figure 7: Proportion of children who are overweight (aged 2 to 5 years).

Source: NYS, Pediatric Nutrition Surveillance System (PedNSS), 2003
NHANES, 1999-2002, J Am Med Assn 2004; 291: 2847-2850.



*Low Public Recognition of Obesity
as a Public Health Problem*

Media coverage related to obesity-related issues has increased fivefold between 1999 and 2004 resulting in an increased public awareness of obesity (IOM, 2004). While one study in California finds that one in three residents believes that unhealthy eating habits or lack of physical activity threatens children's health (Field Research, 2003; IOM, 2004), most studies find that obesity is not perceived as a serious health problem by most Americans (IOM, 2004).

Most parents often don't perceive obesity as a health problem for young children, especially if there are no concomitant medical problems (Baughcum et al., 2000; Jain et al., 2001), while school-age children do not view obesity as a health problem until it significantly affects their appearance or performance (Borra et al., 2003).

In a recent poll of U.S. adults, half viewed obesity as a public health problem that society needs to solve, while half considered it a personal responsibility or choice (Lake Snell Perry and Associates, 2003; IOM, 2004). Until the perception of risk associated with obesity is recognized and awareness of the public and individual health risks is appreciated, public health efforts will be stymied. Consistent with previous public health efforts that have focused on protecting children first, there appears to be more support for societal, policy and regulatory changes affecting children than for adults because children are often perceived as more vulnerable. Public health approaches and parallels to motor vehicle safety and tobacco exposure can help guide public health and policy interventions to prevent overweight and obesity.

B. Early Recognition of Overweight and Obesity

The healthcare sector can play a critical role in addressing obesity and overweight in both children and adults. The medical community has been given the charge by the U.S. Surgeon General (2001) and provided guidelines by the National Institute of Health (NIH)

Obesity Education Initiative (1998), the American Academy of Pediatrics (AAP) (2004), the American Heart Association (AHA) (2004) and the World Health Organization (WHO) (2004) to take actions targeting the obesity epidemic.

Cornell NutritionWorks

www.nutritionworks.cornell.edu

The Online Course on Preventing Childhood Overweight is an interactive, web-based continuing professional education program for nutrition and health practitioners. As part of Cornell NutritionWorks, a new online course on "Preventing Childhood Overweight at Home, at School, and in the Community" is being developed, which will be pilot tested in the spring 2005. This course will build upon the growing number of offerings already available on Cornell NutritionWorks related to childhood overweight. Cornell NutritionWorks provides a convenient, accessible form of continuing education to busy professionals to increase their capacity to address nutrition issues such as childhood obesity at the community level.

Cornell NutritionWorks was developed by Cornell University Division of Nutritional Sciences faculty in 2002 to meet the professional development needs identified by community practitioners. In addition to the opportunity to interact with Cornell faculty members, Cornell NutritionWorks provides access to current nutrition research, references and tools that enhance practice, discussion forums for exchanging information with peers, and self-assessments for continuing professional education units. Membership in Cornell NutritionWorks became free in 2004. There are currently over 1,300 members, from all 50 states and 28 countries. There is a small fee for credits, which can be paid online. Current funding for Cornell NutritionWorks comes from Cornell Cooperative Extension, the College of Human Ecology at Cornell, and the Offices of the President and Provost at Cornell.

These professional organizations have issued statements providing professional guidelines for screening, diagnosing and managing obesity, strategies to aid in preventing the development of overweight, and recommendations to routinely counsel patients about healthy eating and physical activity, and/or obesity. A number of reports, however, suggest that these guidelines are often not being implemented. Insufficient reimbursement, lack of time for counseling, and lack of access to qualified dietitians are often cited as reasons why not (Robinson and Killen, 2001). Moreover, there is often a perceived lack of interest and/or motivation by patients or parents and a sense that treatment is futile. In fact, the high rate of recidivism associated with weight loss programs (95% of individuals regain weight lost within three years), has contributed to the call for efforts focusing on prevention of overweight (Hill and Peters, 1998).

Most pediatric care providers do not routinely use BMI percentiles to track children's growth or to screen for overweight, despite recommendations to do so (Barlow and Dietz, 1998; CDC; AAP, 2003). A recent study found that older children and adolescents, and those who are more overweight were

most likely to be diagnosed, have further evaluation, be referred for dietary counseling, and have closer follow-up (O'Brien SH, Holubkov R, Reis EC, 2004). Given that most medical providers do not recognize or discuss childhood obesity with parents, it is not surprising that three quarters of parents do not recognize their overweight child as such (Jain et al., 2001; Dennison et al., 2000). Moreover, subpopulations with higher prevalence rates of childhood obesity (i.e., low-income mothers and Hispanics) were less likely to recognize that their child was overweight. A recent study also found that less than half of obese adults report being advised to lose weight by healthcare professionals (Galuska, 1999). Healthcare providers who are not overweight, have healthy eating habits, and who exercise regularly are more likely to discuss obesity or weight status with patients than those who do not (Lewis CE, Wells KB, 1986). Providers are also more likely to counsel women than men, high income vs. lower income patients, patients younger than 65 years vs. those over 65 years, and who are severely obese (Taira DA, Safran DG, Seto TB et al., 1997; Galuska, 1999). Yet, patients who are counseled to lose weight are more likely to report trying to do so (Galuska DA, Will JC, Serdula MK et al., 1999; Nawaz H, Adams ML, Katz DL, 1999).

Critical Periods for Excess Weight Gain

There appear to be periods in life when the risk of developing obesity is higher—the pre-natal period, the period in early childhood prior to the “adiposity rebound” and adolescence. Hypothesizing that certain environmental exposures (i.e., excess caloric intake) are more likely to result in excess weight gain at certain developmental stages than at other times, they have been referred to as “critical periods” (Dietz 1994, 1997). Recent studies suggest that early infancy may also be a critical period relating to the later development of obesity. A number of studies report that rapid infant weight gain during the first 4 to 6 months of life is associated with an increased risk of being overweight later in childhood or young adulthood (Edmunds; Stettler N, Zemel BS, Kumanyika S, Stallings VA, 2002). In addition to biological factors, parental and family factors during these periods may be critical in determining weight status later in life.

The prenatal period

A number of studies have found that higher birth weight is associated with higher attained BMI during later childhood and adulthood (Allison, Paultre et al., 1995; Barker, Robinson et al., 1997; Charney, Goodman et al., 1976; Kramer, Barr et al., 1985). Maternal obesity is also related to higher birth weight, unhealthy weight gain and obesity, supporting the theory that genes shared between mothers and children determine both birth weight and later obesity.

Several studies have noted an inverse association of birth weight with increased later weight gain and measures of abdominal obesity in both childhood and adulthood (Barker, Robinson et al., 1997; Law, Barker et al., 1992; Okosun, Liao et al., 2000; Valdez, Athens et al., 1994; Kuh, Hardy et al., 2002), and measures of insulin resistance and the metabolic syndrome, after adjustment for attained BMI (Hulman, Kushner et al., 1998; Valdez, Athens et al., 1994; McCance, Pettitt et al., 1994; Mi, Law et al., 2000; Phillips 1998; Vanhala, Vanhala et al., 1999).

Special Supplemental Nutrition Program for Women, Infants and Children (WIC)

WIC monitors weight during pregnancy and throughout the postpartum period (one year for breastfeeding women). Nutritional risk eligibility is determined based on federally-mandated nutritional risk criteria. Prenatal risks include pre-pregnancy overweight, and high maternal weight gain. Postpartum risks include breastfeeding less than 6 months postpartum with pre-pregnancy BMI greater than or equal to 25, and breastfeeding more than 6 months postpartum with a postpartum BMI greater than or equal to 25. The WIC BMI risk level has recently been lowered from 26.1 to 25. More women in the WIC program will now be identified as overweight, and therefore, more women will receive counseling or education.

Prenatal weight gain and long-term obesity

Pregnancy can have a significant impact on women's long-term weight and risk of being overweight. Nulliparous women tend to be less overweight compared to multiparous women, and there is a dose-response effect: the more children a woman has, the more likely she is to be overweight. In the past, the primary focus of prenatal nutrition counseling was to prevent deficiencies. Today the growing epidemic of obesity and associated chronic illnesses has drawn attention to the problem of over-nutrition during pregnancy, leading to excessive gestational weight gain and postpartum weight retention. In 1990, the Institute of Medicine (IOM) issued guidelines for gestational weight gain based on a woman's pre-pregnancy Body Mass Index (BMI). They recommended that women who weigh more (i.e., have

a higher BMI) gain less weight during pregnancy than women who weigh less. Gaining more weight than the IOM guidelines increases a woman's risk of retaining (i.e., not losing) the extra weight gained during pregnancy and increases their risk of being overweight or obese with each subsequent pregnancy. Lower income women with pregnancy weight gains above the range recommended by the IOM guidelines retained 8.2 pound more at one year postpartum than lower income women who gained within the range. They were also 4.7 times more likely to experience major weight gain with childbearing (Olson et al., 2003). In the U.S., few women stay within the IOM guidelines. Therefore, excessive gestational weight gain is an important preventable cause of overweight among adult women in the U.S.

**Preventing Excessive Weight Gain in Pregnancy:
An Approach to Promoting Healthy Body Weights in Childbearing Women**

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Division of Nutritional Sciences, Cornell University

Description of Program: The long term goal of this project is to decrease the amount of weight retained in the postpartum period by lower income, rural women who enter pregnancy with normal or high body mass indices (BMI). This goal was addressed by encouraging women to gain an amount of weight during pregnancy that is within the appropriate ranges recommended by the Institute of Medicine (IOM). The intervention was implemented in the hospital and clinic system of Bassett Healthcare serving eight counties in Upstate New York. Health care providers monitored women's gestational weight gain using adapted IOM gestational weight gain grids and drew their attention to the optimal range of gestational weight gain. Women were provided with a tool for self-monitoring of weight gain and encouraged to use it by health care providers. In addition, they received five action-promoting newsletters in the mail that include post cards on which they set goals and had the opportunity to ask questions that were answered in the next newsletter.

Evaluation of the Program: Two hundred eight pregnant women entered the intervention cohort and 179 were included in the analytical sample. These women were compared to 381 high and normal BMI women who participated in an observational study of postpartum weight retention in the same health care facility (historical control group). Overall, the intervention had no significant effect on the proportion of women who gained more weight in pregnancy than the IOM recommends (45 percent control group vs. 41 percent in the intervention group). However, among low income women, it had a significant effect on excessive gestational weight gain. Fifty-one percent of the low income control group women gained more than the recommended amount compared to 33 percent in the low income intervention group ($p < 0.01$). The impact of the intervention among low income women was present in both the normal and overweight groups. Women were followed until one year postpartum. In the low income sub-sample, overweight women in the intervention group were significantly less likely to retain 5 or more pounds than similar women in the control group ($p = 0.04$).

The period of “adiposity rebound”

In general, a child’s BMI increases rapidly during the first 6 to 12 months of life, but then decreases until 4 to 8 years before rising again into adulthood. Children who reach their BMI nadirs (low points) at a younger age have an earlier “adiposity rebound” and have a greater risk of obesity one to two decades later (Rolland-Cachera, Deheeger et al., 1984, 1987; Freedman, Kettel Khan et al., 2001; Whitaker, Pepe et al., 1998; Williams, Davie and Lam, 1999).

Older children and adolescents

While the pre-teen and teenage years may not constitute a truly critical period, they appear to be quite important in the life course development of obesity. Whitaker and colleagues (1997) have shown that children who are obese between 10 and 17 years of age are about 20 times as likely to remain obese into young adulthood compared to their non-obese counterparts. Puberty is a time of rapid acceleration and deceleration of height growth; relative weight changes tend to be rapid as well. In girls early menstruation is associated with obesity (Laitinen, Power, Jarvelin,

2001). While boys in general do not gain as much overall fat as girls during the teenage years, the tendency towards developing abdominal fat may be more pronounced in boys (Goran et al., 1995).

In girls, the decline in physical activity during the adolescent years may play an important role, possibly explaining the greater weight gain over 10 years of follow-up among Black girls compared to White girls (Kimm, Glynn et al., 2002; Kimm, Barton et al., 2001).

Family history

The genetic contribution to obesity has long been recognized. However, the rapid changes in obesity prevalence over the past 30 years cannot be due to genetic changes, which take thousands of years to manifest. Parents today are twice as likely to be obese as 30 years ago (IOM, 2004). Parental obesity more than doubles the risk a child will be obese as a young adult, while having two obese parents increases the risk tenfold compared to having two non-obese parents (Whitaker et al., 1997). Thus, children from families with obese parents are at high risk of developing obesity.

C. Obesity-related Diseases

Overweight and obesity are major risk factors for many serious chronic diseases and conditions including cardiovascular disease, dyslipidemia, hypertension, type 2 diabetes, cancer and osteoarthritis. Being overweight in a society that stigmatizes this condition is also associated with serious shame, self-blame, low self-esteem and depression. These conditions may also impair social and academic functioning, leading to discrimination, negative stereotyping and social marginalization. With increasing adiposity (body fatness) the risk of each disease increases. Adults whose BMI is under 25 kg/m², but who have gained 10 or more pounds after 21 years of age, are also at increased risk of many diseases. The benefits of weight reduction for those overweight or obese are substantial, especially if the individual has other health risk factors. Weight loss as modest as 5-10% of total body weight in a person who is overweight or obese can reduce elevated blood pressure, elevated blood glucose levels, and elevated cholesterol levels. In NYS, adults who are overweight or obese are significantly more likely to report fair or poor health (**Figure 8**).

Figure 8: Prevalence of fair or poor health vs. BMI by race/ethnicity

Source: NYS BRFSS 2003

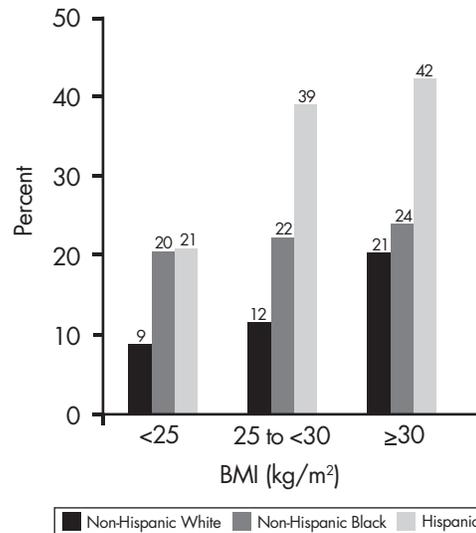


Figure 9: Prevalence of hypertension vs. BMI by race/ethnicity

Source: NYS BRFS 2003

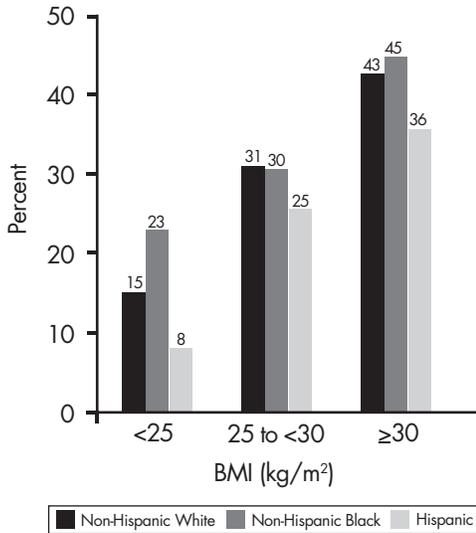
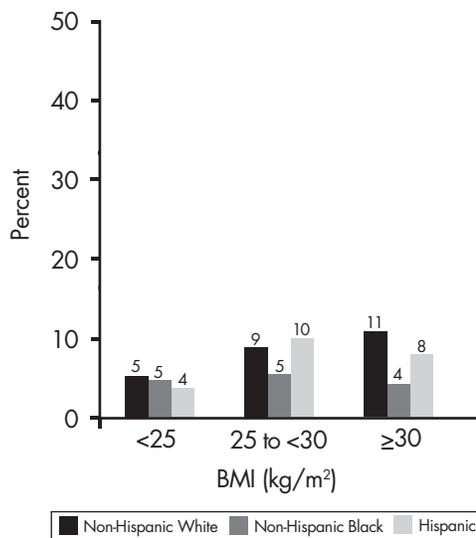


Figure 10: Prevalence of cardiovascular disease vs. BMI by race/ethnicity

Source: NYS BRFS 2003



Cardiovascular Disease

The association between obesity and cardiovascular disease (CVD), including stroke, is well documented (Kraus, Winston, Fletcher 1998). Deaths due to CVD have been linked directly to obesity (Stevens et al., 2002). Adults under the age of 50 years are at an increased risk of developing coronary heart disease if they are obese (Hubert, Feinlab et al., 1983). Part of the increased risk of CVD associated with obesity is due to increased rates of risk factors including hypertension, high serum cholesterol levels and diabetes, an association found for nearly all gender, race and socioeconomic groups (Parateukel, Lovejoy et al., 2002). Even after adjusting for these risk factors, obesity remains directly associated with CVD (Hubert, Feinlab et al., 1983). Fat distribution, (i.e., abdominal obesity, waist/hip ratio) independent of total fat has been shown to increase the risk of hypertension (Okason et al., 2001), stroke (Walter et al., 1996) and the risk of CVD for older men and women (Rimm, Stampfer et al., 1995; Gillum, 1987) (**Figure 9** and **Figure 10**).

In NYS, the prevalence of self-reported hypertension increases with increasing BMI for Whites, Blacks, and Hispanics (**Figure 9**). Prevalence of self-reported cardiovascular disease increases with increasing BMI for Whites and Hispanics (**Figure 10**). For Blacks, however, reported CVD rates did not differ by BMI group.

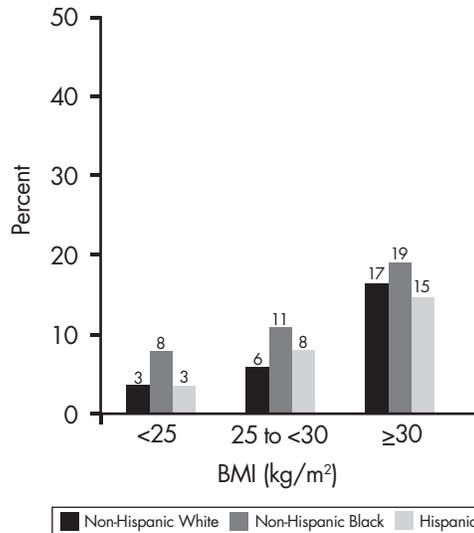
The increased risk for CVD associated with obesity begins early in life. Obese youth, aged 5 to 10 years, are more than twice as likely as non-obese children to have at least one CVD risk factor such as elevated blood cholesterol, triglycerides, insulin, or blood pressure (60% vs. 27%); 25% of obese children had two or more risk factors for CVD. The Pathological Determinants of Atherosclerosis in Youth (PDAY) study among teens and young males aged 15-35 years, showed at autopsy that obesity greatly accelerated the extent of atherosclerosis present in the abdominal aorta and coronary arteries after adjusting for other risk factors including blood lipids, blood pressure, smoking and insulin levels (McGill et al., 2002).

Diabetes

Overweight and obesity are strongly associated with glucose intolerance and insulin resistance (Perry, 2002). More than 80% of persons with type 2 diabetes are overweight or obese (Perry, 2002). Both degree and duration of obesity are significant risk factors for type 2 diabetes. Persons who have been obese for more than 10 years are twice as likely to develop type 2 diabetes than those who have been obese for 5 or fewer years. Among NYS adults, the prevalence of diabetes increases with higher BMI for Blacks, Whites, and Hispanics (**Figure 11**). Location of body fat is also a strong and independent risk factor for type 2 diabetes, with abdominal or visceral obesity associated

Figure 11: Prevalence of diabetes vs. BMI by race/ethnicity

Source: NYS BRFSS 2003



with an increased risk of type 2 diabetes. Weight loss and/or increased physical activity are the most effective means of preventing the development of type 2 diabetes among those with pre-diabetes (Klein et al., 2004; Lindstrom et al., 2003).

Children whose mothers had diabetes during pregnancy are at higher risk of childhood obesity, and subsequently of developing type 2 diabetes (Dabelea and Pettitt, 2001). Until recently, type 2 diabetes was commonly referred to as adult onset diabetes. But type 2 diabetes is rapidly becoming a disease of children and adolescents, with a five to tenfold increase in the prevalence of diabetes mellitus among adolescents over the past decade (Rosenbaum et al., 2004). It is estimated that today's youth have a significantly increased lifetime risk of developing type 2 diabetes – 30% for boys and 40% for girls (IOM, 2004). These rates are even higher among ethnic minorities and for those with a family history of type 2 diabetes. In a recent study of children, family history of type 2 diabetes was associated with beta-cell dysfunction, which was unmasked by increasing insulin resistance secondary to obesity (Rosenbaum et al., 2004) (**Figure 11**).

Cancer

Obesity and overweight are significant risk factors for certain cancers, including multiple myeloma and cancers of the esophagus, colon and rectum, liver, gallbladder, pancreas, kidney and stomach. Overweight and obese women are at increased risk for breast, uterus, cervix and ovarian cancers. Increased cancer risk is found not only among the most obese; for example, women with a BMI between 25 and 29.9 were found to have a 34% higher risk for breast cancer (Calle, Rodriguez et al., 2003). Overweight and obese men are also at significantly increased risk for prostate cancer. It is estimated that 14% of all cancer deaths in men are related to overweight or obesity, while 20% of women's cancer deaths can be attributed to overweight or obesity (Calle, Rodriguez et al., 2003).

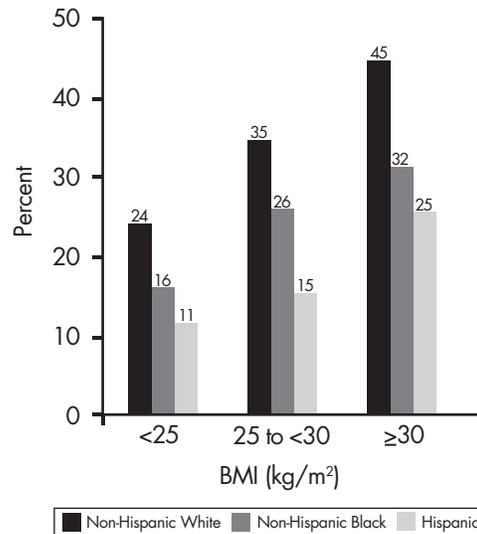
Arthritis

Obesity is a significant risk factor for arthritis. Although arthritis rates are highest among Whites, lowest among Hispanics, and in between for Blacks in NYS, the prevalence of arthritis increases with higher BMI for all three racial/ethnic groups (**Figure 12**).

Maintaining an appropriate weight or reducing weight to a recommended level reduces a person’s risk for developing certain forms of arthritis. Obesity is a major risk factor for both the development and progression of osteoarthritis of the knee and is associated with an increased prevalence of hip osteoarthritis (Anderson and Felson 1988; Davis, Ettinger and Neuhaus 1990; CDC, 1999). It is estimated that obesity accounts for 19% of osteoarthritis of the knees (Felson, 1990). An increase in weight is significantly associated with increased pain in weight-bearing joints while weight loss decreases the risk of developing symptomatic knee osteoarthritis in women (Felson and Zhang et al., 1992). In one study, women who lost as little as 11 pounds decreased their risk of developing osteoarthritis of the knee by 50%. Obesity is also a risk factor for gout in men (Wortman, 2002).

Figure 12: Prevalence of arthritis vs. BMI by race/ethnicity

Source: NYS BRFSS 2003



Asthma

In the past two decades there has been a dramatic increase in the prevalence of asthma in the U.S. The number of Americans suffering with asthma has doubled between 1980 and 1994 and it is estimated that 14.9 million Americans have asthma (Luder, 2002). This

increase in asthma prevalence affects all age groups, races and both sexes (Redd, 2002). A number of studies have demonstrated a relationship between obesity and asthma among children, adolescents and adults (Shaheen, 1999). Obese adults were 66% more likely to have asthma than their normal weight peers (Medical Letter on the CDC and FD 2002).

There are several possible theories regarding the association between obesity and asthma, including the possibility that individuals with asthma are less likely to participate in physical activities (von Kries, Hermann, Grunert

and von Mutius, 2001), obese people may spend more time indoors exposed to indoor allergens leading to asthma (Bukowski, Lewis, Gamble, Wojcik and Laumbach, 2001), or that obesity leads to decreased lung function due to abdominal fat impeding the diaphragm (Luder, 2002).

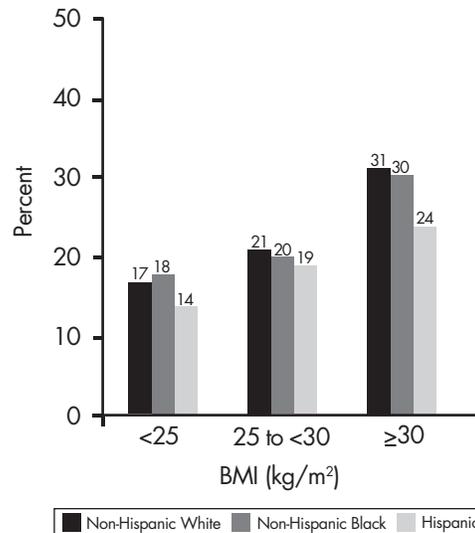
Studies have consistently found that a moderate weight loss of 10% of body weight is beneficial for asthma sufferers, leading to increased lung function, decreased asthma symptoms, decreased need for asthma medication and improved health status (Luder 2002; Stenius et al., 2000).

Disability

Traditionally, disability was believed to originate from disease or pathology. However, recent evidence shows that physical inactivity can itself be a primary cause of disability (Chandler and Hadley, 1996; DiPeitro, 1996; Morey et al., 1998; Rikli and Jones, 1997). Physical inactivity contributes to a “vicious cycle” where inactivity contributes to obesity, obesity exacerbates disability and disability impedes exercise (NIH Clinical Guidelines, 1998; Heath and Fenton, 1997). A high BMI may also be a proxy for physical inactivity and disuse (Rissanen et al., 1991), which in turn leads to reduced capacity or reserve in neurological and musculoskeletal systems and functional decline (Buchner and Wagner, 1992). Physical inactivity contributes to the higher prevalence of obesity among adults with disabilities (Finch, 2001) since adults with disabling conditions or disabilities are more likely to face barriers to regular exercise. Among NYS adults, disability rates increase with increasing BMI group (**Figure 13**).

Figure 13: Prevalence of disability vs. BMI by race/ethnicity

Source: NYS BRFSS 2003



Costs of Obesity-related Diseases

Obesity is expensive in terms of morbidity, mortality and financial costs. The total lifetime medical care costs for the treatment of obesity, hypertension, diabetes, coronary heart disease and stroke add up to \$10,000 for an obese person. Obesity accounts for 40 million workdays of lost productivity, 63 million doctors' office visits, 239 million restricted activity days, and 90 million days confined to bed per year (Wolf and Colditz, 1998).

Obesity and obesity-related illnesses in the U.S. are estimated at more than \$117 billion each year. Medical spending for conditions attributable to overweight and obesity accounted for 9.1% of total annual U.S. medical expenditures (Finkelstein, 2003). In New York State, obesity costs exceed \$6 billion per year and Medicare and Medicaid finance approximately one-half of these costs. Medical spending for overweight and obesity now rivals that for smoking (U.S. Department of Health and Human Services, 2001; Finkelstein et al., 2003). Obese individuals spend more on both health services and medications than do daily smokers and heavy drinkers (*The Surgeon General's Call 2001*; Finkelstein et al., 2003; Pastor et al., 2002; Thompson, Edelsberg et al., 1999; Wellman and Friedberg 2002; Sturm 2002).

Nationwide, poor diet and physical inactivity are estimated to cause over 365,000 deaths per year or 1000 deaths every day (Mokdad, 2005). In fact, poor diet and physical inactivity are the second leading underlying, or actual, cause of preventable death in our country (Mokdad, 2005). By 2010, if current trends continue, poor nutrition and physical inactivity are expected to surpass tobacco as the leading underlying cause of preventable deaths in the U.S.

Seventy five percent of healthcare costs are attributable to chronic diseases, and 70% of deaths (CDC). Obesity is associated with a shortened life expectancy. Chronic obesity (BMI greater than 45 kg/m²) among 20 to 30 year olds reduces the lifespan of men more than women. Black men experience more years of life lost than white men (20 years vs. 13 years respectively) while white women experienced more years of life lost than black women (8 years vs. 5 years respectively) (Fontaine KR, Redden DT, Wang C et al., 2003). In fact, obesity threatens to reverse the improved life expectancy trend achieved with the reduction of infectious diseases over the past century, so that for the first time in history, today's children are predicted to have a shorter life expectancy than their parents (IOM, 2004).

Steps to a Healthier NY

The goal of the Steps to a Healthier NY (Steps) program is to help individuals live longer, better and healthier lives by reducing the burden of diabetes, asthma and obesity by addressing three related risk factors – physical activity, poor nutrition, and tobacco use. New York State’s Departments of Education and Health are partnering with four counties to implement effective strategies to maximize community and school resources and address the critical health issues and related risk factors.

In September 2003, New York State received a five year grant from the CDC to address these issues; seventy-five percent of these federal funds are provided directly to the four counties of Broome, Chautauqua, Jefferson and Rockland with a combined population of approximately 800,000 people. These counties were selected based on their need, demographics, and previous experience in developing and implementing effective community-based public health programs.

The goals of Steps are achieved through the building of partnerships (community consortiums) between public and private organizations working in areas of disease prevention and medical, social, educational, business, religious and civic organizations. Evidence-based community and school-based interventions have been tailored to each individual county’s needs and resources. A number of Steps interventions related to obesity, nutrition, and physical activity exist in the areas of Policy, School-Based, Community-Based, Workplace, Health Care. The Obesity Prevention Program works with the Steps to a HealthierUS. Program including providing data and information for New York’s four Steps counties and providing staff expertise in Steps counties. Together, the Obesity Prevention and Steps Programs sponsored social marketing training for stakeholders involved in both the Obesity intervention and the four Steps counties. The benefits of this included economy of scale in purchasing services and importantly, brought together staff of both programs and intervention sites to share information, network and create new partnerships to prevent diabetes in New York State.

D. Breastfeeding

Breastfeeding has long been recognized as the gold standard for infant nutrition. Human milk provides a mix of proteins, lipids, carbohydrates, and micronutrients that is uniquely adapted to the nutritional needs of human infants, leading to optimal growth and development. Moreover, breast milk provides antibodies, immune cells, and other anti-infective components that significantly reduce the infant's risk of infections, from diarrhea and colds to meningitis and other life-threatening infections. Infants who are breastfed for 3 months or more also made fewer medical office visits, received fewer procedures, took fewer medications, and experienced fewer hospitalizations. Beyond these short-term benefits, research has demonstrated that breast milk protects the infant against a growing list of chronic diseases, including cardiovascular disease, cancer, and diabetes. Evidence is accumulating that breastfeeding also reduces the infant's risk of childhood and adult obesity.

A recent meta-analysis suggests that breastfeeding is associated with a reduced risk of obesity in childhood and adolescence, even after controlling for important factors such as socioeconomic status and parental obesity (Dewey, 2003). Exclusive breastfeeding during the first 4 to 6 months was most

consistently associated with reduced risk of being overweight, while most studies found that increased duration of any breastfeeding (up to 12 months) was associated with decreasing risk of overweight as a child. Exclusive breastfeeding refers to nourishing a child only with human milk through nursing.

Health Providers

Provider guidance for breastfeeding has been shown to be positively associated with success in breastfeeding (Rosenberg KD et al., 1998), but clinician support for breastfeeding is often inadequate (Schanler et al., 1999). A recent study found that a majority of pediatricians felt that formula feeding and breastfeeding were equally healthy methods for feeding infants (Schanler et al., 1999). Physicians are critical members of a mother's breastfeeding support team because they are contacted frequently after birth, and can help solve common problems as well as offer words of encouragement. Mothers also receive a majority of their breastfeeding knowledge and support from hospital staff where they have their child. More hospitals need to have fully supportive breastfeeding policies to meet the World Health Organization's 10 Steps to be designated as "Baby Friendly" (Naylor, 2001) to ensure that mothers are getting appropriate support and counseling to breastfeed their infants

immediately after birth.

Effective breastfeeding promotion strategies

Structured breastfeeding education and behavioral counseling programs led by specially trained nurses or lactation specialists have been shown to increase breastfeeding rates (AHRQ). The most effective interventions use brief, directive health education combined with skills training and problem-solving counseling conducted face-to-face outside the context of routine clinical care. Provision of ongoing support through visits or telephone contacts increases the number/proportion of women who continue breastfeeding for up to 6 months.

Barriers to Breastfeeding

In the U.S., and in NYS, approximately 71% of mothers breastfeed their infants in the early postpartum period, which is close to the Healthy People 2010 target of 75% (**Figure 14**).

However, breastfeeding rates at 6 months (36% for the U.S. and 35% for NYS) and one year (17% for both the U.S. and NYS) are considerably lower than the Healthy People 2010 target goals of 50% and 25% respectively (**Figures 15 and 16**).

Figure 14: Proportion of mothers who breastfeed their babies in early postpartum (HP Objective 16-19a).

Source: 2003 National Immunization Survey, CDC, and Department of Health and Human Services

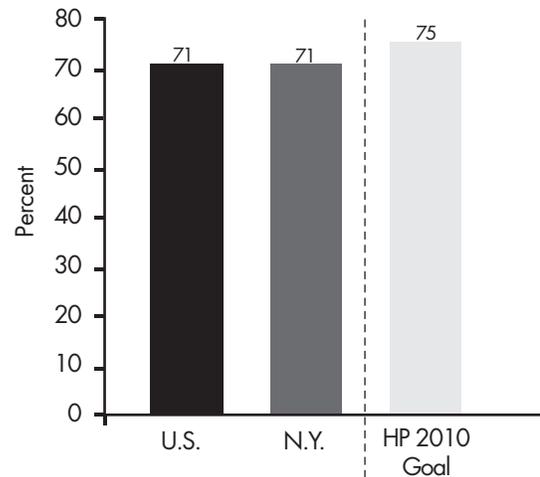


Figure 15: Proportion of mothers who breastfeed their babies at 6 months. (HP Objective 16-19b)

Source: 2003 National Immunization Survey, CDC, and Department of Health and Human Services

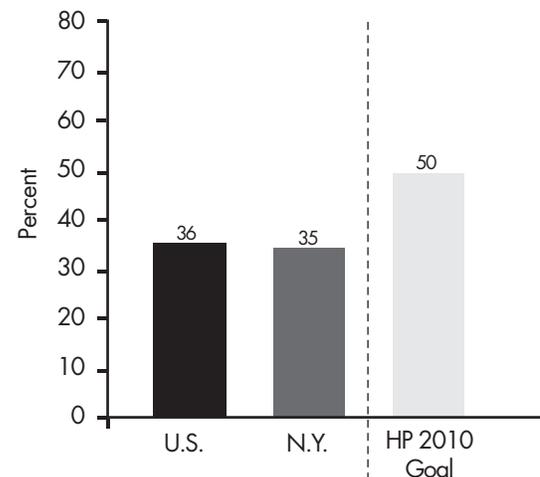
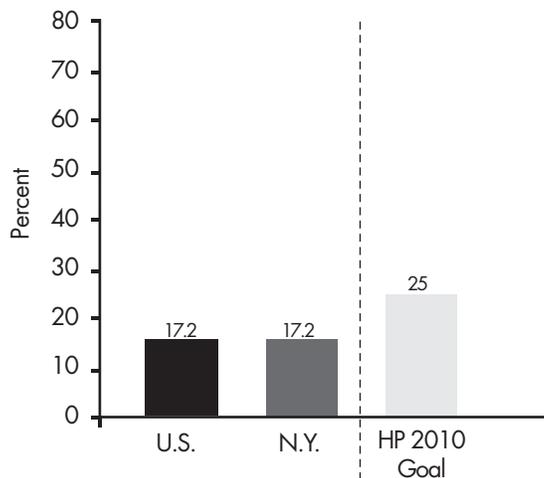


Figure 16: Proportion of mothers who breastfeed their babies at one year. (HP Objective 16-19c)

Source: 2003 National Immunization Survey, CDC, and Department of Health and Human Services



These national objectives do not specify a goal for exclusive breastfeeding, but the American Academy of Pediatrics recommends exclusive breastfeeding for 4-6 months (2004), while the World Health Organization recommends exclusive breastfeeding for the first 6 months of life. Currently only 60% of mothers are *exclusively* breastfeeding in postpartum and only 8% are exclusively breastfeeding by 6 months (PRAMS 1999). Breastfeeding support is a major factor in a mother’s decision to initiate or to continue breastfeeding, and needs to begin before pregnancy and continue well after the child is born.

Community Health Workers (CHWs)

Community Health Workers (CHWs) provide individual outreach and support to childbearing families in high-risk regions of the state. The training that all new CHWs receive includes information about breastfeeding, and the program monitors breastfeeding rates among their clients.

Work

In the U.S., the sharpest drop in breastfeeding rates occurs between 2 and 3 months, and between 3 and 4 months for exclusive breastfeeding (Li R et al., 2003). This is usually when women return to work or school and need additional supports from their environment to continue breastfeeding. Studies consistently show that full-time employment is associated with shorter periods of breastfeeding (Kurinij et al., 1989; Gielen et al., 1991; Auerbach

and Guss, 1984; Hills-Bonczyk et al., 1993) and that the length of a mother’s maternity leave is positively associated with the duration of breastfeeding (Visness, Kennedy, 1997). Government family policies could play an important role in enabling women to achieve improved breastfeeding rates. In Norway, women far surpass the U.S. Healthy People 2010 goals for breastfeeding (97% of women breastfeed when leaving the hospital, 80% are breastfeeding at 3 months, and 20%

beyond 12 months). Success in Norway is most likely due to policies that are very supportive of the breastfeeding mother. For example, maternity leave nationwide is 42 weeks with full pay or 52 weeks with 80% of salary. Flexible part-time is available for women from 2 months after giving birth with income supplemented from maternity benefits, and after returning to work, women are entitled to 1- to 1.5-hour

breaks to return home to breastfeed, or to have the child brought to work.

Policies enacted within the workplace can also help to increase breastfeeding rates among mothers. Company-sponsored lactation programs can enable employed mothers to provide human milk for their infants as long as they wish, by providing lactation rooms equipped with breast pumps and refrigerators.

Breastfeeding and Human Lactation Study Center

Dr. Ruth Lawrence, an internationally known expert on breastfeeding, and the New York State Department of Health have provided continuing educational opportunities for physicians, midwives, nurse practitioners, and other health care providers about normal lactation and the management of breastfeeding in special circumstances. Best Practices Guidelines and policies for hospitals, managed care plans, ambulatory care facilities, workplaces, as childcare centers have been developed and distributed promoting and supporting breastfeeding. The guidelines are based on the consensus of ad hoc expert panels and in the case of the hospital guidelines, on the breastfeeding-promotion section of the New York State code of hospital regulations. The Center conducts research focused on breastfeeding behaviors and breastfeeding management.

E. Nutrition and Dietary Determinants

Trends in Dietary Quality and Energy Intake

The concept of energy balance is essential to understanding the relationship among food consumption, physical activity and body weight. When caloric consumption from food exceeds energy expended in physiologic processes, physical activity, and for children, “normal” growth, excess weight gain occurs. The balance of energy intake and expenditure is so delicate that routinely consuming 10 calories per day in excess of energy expenditure would result in a one-pound weight gain over 12 months. While the concept of energy balance appears straightforward, the environmental stimuli and behavioral patterns that influence food consumption are extremely complex and so well-integrated into our way of life that we may not notice the factors that contribute to increased caloric consumption.

Over the past 20-30 years, the same period in which obesity doubled among U.S. adults, there has been a significant increase in average daily caloric consumption with men consuming, on average, an additional 168 to 268 calories/day, and women an additional 143 to 335 calories/day (Cutler, Shapiro, ERS, USDA, 2004; MMWR, 2/6/04). Trends that contributed to increased caloric consumption over this 30-year period include increased consumption of food away from home, particularly fast food, increased portion sizes, increased intake of sweetened beverages, as well as improved methods for documenting food and nutrient intake (Briefel and Johnson, 2004). Studies by the USDA ERS attribute most of these extra calories to increased consumption of between-meal snacks (USDA, ERS, 2004).

Schools + Professionals in Nutrition (SPIN)

Schools + Professionals in Nutrition (SPIN) Program, an outgrowth of the New York State Action for Healthy Kids Team, pairs school professionals with a volunteer nutritional professional who work together to improve nutrition among students in part through helping schools to complete the School Health Index (SHI) and an Action Plan. Matched schools and nutrition professionals have access to resources, support and technical assistance as needed to foster productive partnerships.

There was little measurable change in children's average daily caloric consumption over this period with the exception of an increase among adolescent females (Briefel and Johnson, 2004). Nevertheless, overweight more than tripled among children 6 through 11 years and more than doubled for youth 12 through 19 years (Ogden and Flegel, 2002). Although significant changes in caloric consumption were not documented, trends in dietary behaviors shifted significantly toward consumption of more food away from home, increased snacking, and increased use of sweetened beverages.

Among preschool children, national dietary surveys indicate overall diet quality improved somewhat between 1977 and 1998 with increased intakes of grains, fruits and vegetables and dairy products. At the same time caloric intake increased significantly, with a large proportion of the extra calories accounted for by increases in added sugar and increases in fruit juice consumption. Although the percentage of calories from fat decreased over the same period, the total amount of fat consumed increased contributing to a higher caloric intake (Kranz et al., 2004).

Be a Power Eater: The Good Food for Great Kids Program

Be a Power Eater: The Good Food for Great Kids Program was launched in all Pre-K through 8th grade Buffalo public schools (approximately 31,000 students). An enhanced fruit and vegetable display will be placed in school lunch lines for a six-week period (January 24-March 4, 2005) where students received incentives and rewards for selecting a fruit or vegetable. The program where the opportunity for rewards and prizes increases proportionately to the number of times a student selects an item. The program will focus on changing behavior in children to lessen health trends in poor nutrition and overweight/obesity. The project will evaluate which approaches have the greatest behavioral outcomes, by school and grade, and results will be available by the end of 2005.

The Be a Power Eater program also has a research component. Variations of the basic program will be tried at the 65 schools. The schools are divided into three groups (A, B, C):

- ◆ The "A" schools will be involved in the program that includes the main program + 4th grade nutrition curriculum* for two schools.
- ◆ The "B" schools will participate in the main program + a school competition where the top 3 schools who have consumed the most fruits and vegetables win a special award + 4th grade nutrition curriculum* for two schools.
- ◆ The "C" schools will participate in the main program + a "Promise Contract" where homeroom students will sign a poster in the classroom pledging to eat more healthfully + 4th grade nutrition curriculum* for two schools

**The curriculum will be completed prior to the program start.*

According to Gretchen Fierle, the Project Coordinator, "the Healthy Heart Program's funding has allowed us to leverage other funds." Of the \$450,000 cost of this project, \$101,250 is from the Healthy Heart contract. More than 15 organizations and 12 funding agencies have developed this district-wide initiative. This intervention is the first of its kind in Western New York and no other urban community in the United States has undertaken a program of this magnitude, aligning existing community and media resources to address a community issue.

The recent Feeding Infants and Toddlers Survey (FITS) revealed that the food intake of infants and toddlers generally met or exceeded nutrient recommendations. However, mean energy intake exceeded estimated requirements by 10% for infants 4 to 6 months, 23% for infants 7 to 12 months, and 31% for toddlers 12 to 24 months (Devaney, Ziegler, Pac et al., 2004). The dietary patterns of infants often resembled those of older children and adults. Up to a third of infants between 7 and 24 months of age consumed no discreet servings of fruits or vegetables. French fries were one of the three most commonly consumed vegetables among 9 to 11 month-old infants, and by 15 to 18 months French fries were the most commonly consumed vegetable. Baked desserts, candy, salty snacks and sweetened beverages, including soda and fruits drinks, were also prominent in the diets of infants and toddlers (Fox, Pac et al., 2004). The transition from an infant feeding pattern to a mature eating pattern has traditionally been regarded as a critical period for introducing an array of nutrient-dense foods in support of healthful life-long eating patterns. This important transitional period has been superseded by the early adoption of the “typical American diet,” deficient in fruits and vegetables and replete with snack foods, sweetened beverages and desserts.

Parental Influences on Food Choices and Eating Behaviors

Studies show that parental practices and

behaviors influence the development of their children’s eating and activity behaviors (Davison and Birch, 2001a,b,c; Moore et al., 1991). Most parents of overweight children, even very overweight children, fail to recognize that their child is overweight (Baughcum et al., 2000). Among children with a BMI between the 85th and 95th percentiles, only 3% of parents reported that his/her child was *a little overweight*. Among children with a BMI > 95th percentiles, only 27% of parents reported that his/her child was *a little overweight* or *overweight*. Dennison, et al. (2000) found that parents who believe that their child is overweight report limiting how much food their child eats more frequently. Dietz, et al. (1983) found that parents of overweight children tended to have difficulty setting limits with respect to food and other areas. In a cross-sectional study, Johnson and Birch (1994) noted that mothers of overweight preschool children tended to be more controlling of their children’s food intake, specifically limiting how much food their child ate. However, in a recent longitudinal study, they Davison and Birch (2000) reported that overweight girls whose fathers were more restrictive (i.e., limited more frequently the amount of food) tended to gain less weight over time. In sum, these findings suggest that lack of parental limits to food intake may contribute to obesity, while imposition of some limits (in response to parental perception that the child is overweight) may help slow down continued weight gain.

Approximately two-thirds of parents reported using food as a reward and withholding food, usually dessert, as a punishment (Birch, 1980; Dennison et al., 2000a). Yet, as Birch and colleagues (1982) have demonstrated, this has contrary results; rewarding the consumption of a food (a contingency) devalues the food and decreases the liking for that food. Praising children for eating all of a food or for cleaning their plate may actually encourage overeating, which has been associated with obesity (Klesges et al., 1995). Parental encouragements to eat were associated with an increased likelihood that the child would eat; prompts to eat were associated with children's weight status (Klesges et al., 1986). When young

children were allowed to choose freely from a selection of foods, they selected many non-nutritious foods. When children were told that their mother was going to review the foods selected, they chose fewer non-nutritious foods. When mothers modified their children's choices, "they tend[ed] to focus on reducing foods lowest in nutritional value rather than increasing foods highest in nutritional value" (Klesges et al., 1991).

Fruits and Vegetables

The 2005 U.S. Dietary Guidelines recommend increased amounts of fruits and vegetables for Americans 2 years and older (USDA, 2005). Four and one-half cups (nine servings) of fruits and vegetables are recommended daily for

Public/private partnerships to promote healthy eating

The Jefferson County Eat Well Play Hard demonstration project partnered with the Hannaford Market chain and the NYS Apple Grower's Association to implement an apple coupon redemption system during the fall harvest. The project distributed over 6,000 coupons with total sales of apples increasing by 11,000 pounds over the same time period for the previous year.

The Dutchess County Eat Well Play Hard demonstration project partnered with a local McDonald's to modify the Happy Meal Menu. The "Happy Meal Plus" included 1% or fat free milk or a 5 oz. low fat yogurt in place of a soft drink and added a choice of salad or fruit cup. A physical activity toy, such as a beach ball or jump rope was also included. A total of 943 Plus meals were sold during the promotion. Over a two month period, the number of Plus meals sold was 67% above the average sales for the Happy Meal. Sales of low fat milk for the McDonald's store were up by 19% over the same period during the previous year. Children selected the fruit cup 38% of the time; salad was selected 29% of the time.

the reference 2,000-calorie level, with higher or lower amounts depending on the calorie level. This results in a range of 2 ½ to 6 ½ cups (5 to 13 servings) of fruits and vegetables each day for the 1,200- to 3,200-calorie levels (USDA, 2005). In the fruit group, consumption of whole fruits (fresh, frozen, canned and dried) rather than fruit juice for the majority of the total daily amount is suggested to ensure adequate fiber intake. As different vegetables are rich in different nutrients, a variety of vegetables from the five vegetable subgroups (dark green, orange, legumes [dry beans], starchy and other vegetables) is recommended for adequate nutrient intake.

Previous recommendations were for

a minimum of five servings of fruits and vegetables (two servings of fruits and three servings of vegetables) per day (USDA, 2000), which formed the basis for the national Five-A-Day for Better Health program, a public/private partnership of the produce industry and the U.S. Government to promote vegetable and fruit consumption. The increased fruit and vegetable recommendations are based on the demonstrated role of vegetables and fruits in reducing chronic disease risk including selected cancers, cardiovascular disease and hypertension (Block et al., 1992; Bazzano, 2002; Law and Morris, 1998; Appel, Moore, Obarzanek, and Vollmer, 1997).

Figure 17: Proportion of persons aged 2 years and older who consume at least 2 daily servings of fruit. (HP Objective 19-5)

Source: Dennison BA, et al. *Journal of American College of Nutrition* 1998; 17: 371-378; Munoz KA, et al. *Pediatrics* 1997; 100: 323-329

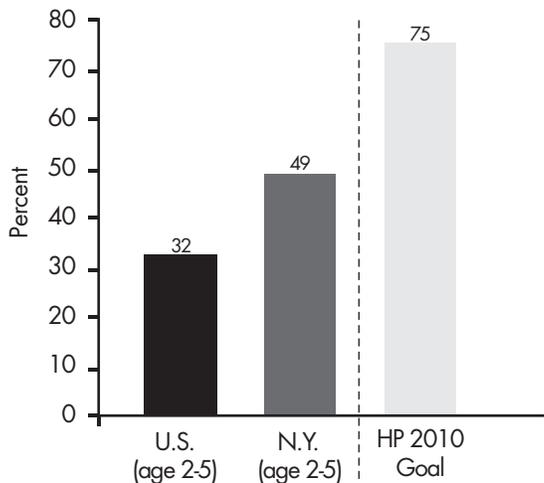
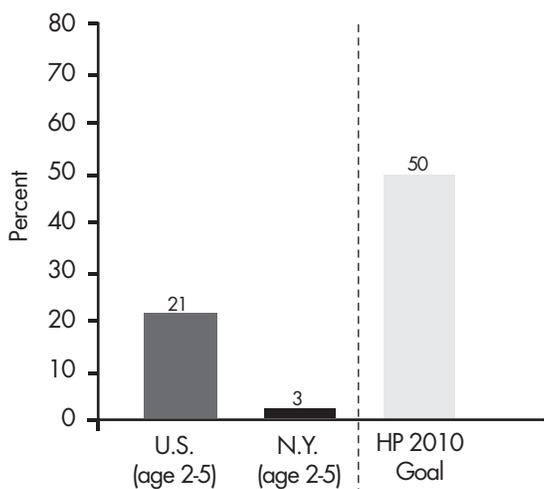


Figure 18: Proportion of persons aged two years and older who consume at least three daily servings of vegetables, with at least one-third of them being dark green or orange vegetables. (HP Objective 19-6).

Source: Dennison BA, et al. *Journal of American College of Nutrition* 1998; 17: 371-378; Munoz KA, et al. *Pediatrics* 1997; 100: 323-329.



Despite long-standing recommendations, three quarters of adults (77% in the U.S. and 72% in New York State) report consuming fewer than the minimum five servings daily (BRFSS 2002). Among children, aged 2 to 5 years, only 32% in the U.S. and in one study, 49% consumed at least 2 servings of fruit, much less than the Healthy People 2010 target of 75 % (Figure 17).

For vegetables, the findings are even lower. Among 2 to 5 year-old children, 21% in the U.S. and 3% in one NY study consumed 3 servings or more of vegetables (Figure 18).

National studies indicate that the variety of vegetables and fruits consumed by adults and children is extremely limited, with fried potatoes ranking as the most popular vegetable choice of Americans (Guthrie, 2004). Understanding the individual and household characteristics associated with vegetable and fruit variety may be important because an association has been identified between an increased variety of vegetables and a lower body fat (McCrory, 1999). A U.S. Department of Agriculture analysis of household characteristics and foods purchased showed that the presence of children in a household had a negative impact on variety of vegetables purchased. Households with an older head of household, a higher level of educational attainment, and characteristics associated with preparing meals from scratch were also associated with purchasing a greater variety of vegetables (Stewart, Harris, and Guthrie, 2004).

Greenmarket 5-A-Day Partnership

Data reported in the 2002 NYC Community Health Survey showed that only 9.5% of NYC residents consumed five or more servings of fruits and vegetables on a given day. In some areas, the figure was as low as 4.7%. Programs that address barriers, such as availability and cost of produce in larger cities, are clearly needed. To address the issue, the Wellness at Work program developed a partnership with Greenmarket, an organization providing farmers' markets across the city. Program staff developed and distributed promotional kits to the farmers' markets, as well as to mobile fruit and vegetable vendors across the city. The kits contained an apron, produce bags, recipe cards and informational sheets, all branded with the 5-A-Day logo. Roughly 175 boxes were sent out throughout the 5 counties in NYC. In addition, staff canvassed the city and gave out an additional 200 boxes.

This initiative marked the first time the 5-A-Day message and program were promoted throughout NYC by the City Health Department. This program helped make initial efforts to develop a database of local fruit and vegetable vendors, which will facilitate future and continued outreach to these groups. Efforts to assess the effects on fruit and vegetable consumption of this simple promotion and collaboration are ongoing.

Individuals are commonly advised to increase vegetable and fruit consumption as a weight control strategy, although a causal relationship between vegetable and fruit consumption and weight loss has not been demonstrated. Plant foods, being high in fiber and water content and low in calories, promote a sense of fullness, and may therefore make it easier for individuals to avoid excessive caloric intake. A review of intervention studies examining vegetable and fruit consumption and weight control concluded that counseling to increase the consumption of vegetables and fruits coupled with efforts to decrease energy intake may be an effective approach

to weight management (Rolls et al., 2004). The Dietary Guidelines Advisory Committee concluded that increased vegetable and fruit consumption without explicit guidance to lose weight does not lead to weight loss (Report of the 2005 Dietary Guidelines Advisory Committee).

Portion Size

Between 1977 and 1996, portion sizes and energy intake increased for specific foods whether consumed in homes, in restaurants or in fast-food outlets (Nielsen and Popkin, 2003). The progressive increase in portion sizes has been documented by examining the portion sizes commonly sold in

ready-to-eat form, and the quantities of food consumers report eating (Young and Nestle, 2002; Smiciklas-Wright, Mitchell, et al., 2003). In both cases there has been a notable increase in portion size and consequently in energy consumption. Young and Nestle concluded that marketplace food portions have increased significantly since the 1970s with the promotion of larger portion sizes used as a competitive marketing strategy. The trend toward increasing portion size and the consequent caloric content are significant. With the exception of sliced white bread, food portions, as sold, exceeded, sometimes by several hundred percent, the standard portions used in nutrition labeling (Young and Nestle, 2002). Recent studies examining the impact of portion size on food intake have consistently demonstrated that larger portion sizes lead to increased consumption and higher caloric intake (Diliberti, Bordi et al., 2004; Rolls, Roe, Kral et al., 2004; Rolls, Morris and Roe, 2002; Pearcy and De Castro, 2002; McConahy, Smiciklas-Wright, Mitchell, and Picciano, 2004).

Sweetened Beverages

Over the past 25 years, a notable change in the American eating pattern is the increased proportion of individuals of every age consuming sweetened beverages, making sugar-sweetened beverages the principle source of added

sugar in the American diet (Guthrie, 2000). This trend, combined with increased portion size and increased servings per day, has resulted in a 135% increase in the caloric contribution of sweetened beverages (Nielsen and Popkin, 2004). Concurrent with the increased intake of sweetened beverages has been a decline in milk consumption, with the largest decrease occurring among youth aged 2 through 18 years. The overall shift in beverage consumption resulted in a net caloric increase of 278 calories per day (Nielsen and Popkin, 2004). Other dietary correlates of high-level sweetened beverage intake include consumption of less fruit and more high-fat vegetables by children (Cullen, Ash, Warneke, and de Moor, 2002). Ludwig and colleagues (2001) observed an association between sweetened beverage consumption and children's weight with each 12-oz. sugared soft drink accounting for a 0.18 kg/m² increase in BMI and a 60% increase in risk of being obese, associations which were not observed with sugar-free beverages. Because sweetened beverages may displace nutrient-dense foods and beverages, or may be associated with less nutritious food choices, the impact of sweetened beverage consumption on overall diet quality bears examination along with its contribution to increased weight.

Low-fat Milk Promotion

Recent evidence indicates that low-fat dairy products and calcium play a role in preventing overweight and chronic diseases such as hypertension and diabetes. Unfortunately, intake of dairy products has declined over the past 20 years. Eat Well Play Hard (EWPH) demonstration projects in three communities have been successful in working with day care providers and schools to promote low-fat and fat free milk:

Dutchess County EWPH worked with the City of Poughkeepsie School District which began purchasing 1% or fat free milk and discontinued the sale and purchase of whole or 2% milk in all 8 of their schools. In addition, two schools purchased milk machines to replace soda and other non-nutritious beverages. These policies affected 11,500 students.

Erie County conducted a Low Fat Milk Campaign and tracked the purchase inventory of milk over time. Of the 14 schools in the project area, four switched completely to 1% or fat free, affecting over 9,000 students. Additionally through these efforts, the Summer Food Program selected 1% or fat free milk as the milk provided for the 220,000 meals served.

Jefferson County efforts resulted in the Fort Drum Military Base switching to low fat dairy products at the day care centers serving 900 children daily, and the replacement of whole or 2% milk with 1% and fat free milk for the 18,000 meals served during the Summer Food and Nutrition program.

The displacement of milk by sweetened beverages in the diets of children, adolescents, and adults may exert an additional influence on weight other than just its caloric contribution. Inadequate calcium and dairy intake have been associated with obesity and increased adiposity. Studies in both children and adults have shown an association between weight status or adiposity and the intake of calcium and dairy products (Zemel, 2002,

2004; Thompson et al., 2004; Carruth, 2001; Skinner, 2003; Davies, 2000; Lin, 2000). At least one intervention study demonstrated greater weight loss with reduced calorie diets that included calcium from dairy products compared to calcium from supplements (Zemel, 2002). Dietary patterns characterized by increased dairy consumption have also demonstrated beneficial effects on hypertension and insulin resistance syndrome (Appel, 1997; Pereira, 2002).

*Energy Density and Dietary Variety
Influence Caloric Intake*

Two relatively new concepts in understanding energy intake are the energy density of food and dietary variety. Foods low in energy density, which are also typically high in fiber and water content, may play a role in weight management by providing adequate or greater quantities of food while delivering less energy (Rolls 2000). Many foods with low energy density have also been shown to offer greater satiety by inducing a sense of fullness that discourages subsequent intake (Bell 1998). Predictors of energy density include water, fiber and fat content, with water content exerting the greatest influence by increasing the weight of food without increasing calories (Rolls 1999). Both animal and human studies have shown that food consumption is increased when a greater variety of foods are offered compared with offering a single food. McCrory and colleagues (1999) demonstrated that greater dietary variety was associated with increased energy consumption and increased body fatness for all food groups except fruits and vegetables (McCrory, Fuss and McCallum et al., 1999).

Food Purchased Away from Home

Approximately half of all household food dollars are now spent at food service facilities outside the home. The U.S. Dept. of Agriculture estimates that between 1992 and 2002 annual expenditures for food away from

home grew by approximately 58%; a trend expected to continue. Over the next 20 years growth in the fast food market will be outstripped by the full-service restaurant sales due to modest increases in household income and an increase in households without live-in children (Stewart, Blisard, Bhuyan and Nayga, 2004). Because of increased portion sizes and “value” marketing more calories are likely to be consumed when eating away from home. Restaurant menus offer a wide variety of foods of high energy density in large portions (McCrory et al., 2000), characteristics associated with increased energy consumption. U.S. Department of Agriculture data show that food prepared away from home accounts for approximately a third of daily caloric intake, but less than 0.5 serving of fruit and 1.25 servings of vegetables (Guthrie, 2004). An examination of children’s fast food consumption patterns, using national household survey data, showed that on days when fast food was consumed, children aged 4 through 19 years of age had higher energy intakes and poorer diet quality characterized by more total fat, more added sugars and sugar-sweetened beverages, less milk and fewer fruits and non-starchy vegetables (Bowman et al., 2004). Consumption of food away from home, specifically, consuming quick service food two or more times per week, was associated with increased BMI in adolescent girls (Thompson et al., 2004).

Just Ask Us Restaurant Intervention

In 2002-2003, the Wellness at Work Program implemented a restaurant intervention with two major purposes: 1) to educate the public regarding healthy menu modifications in restaurants, and 2) to incorporate healthy nutrition messages into the curriculum of the Bureau of Food Safety and Community Sanitation. The Bureau of Food Safety and Community Sanitation, within the NYC DOHMH, is responsible for training and certifying all food handlers employed by NYC restaurants. The intervention, "Just Ask Us," aimed to provide restaurant patrons with the option to request basic healthy menu modifications such as sauce or dressing on the side, egg substitutes, and no salt added to their meals. The goal was to provide the consumer with ways to dine out and still maintain a healthy diet. The intervention consisted of two components. For food preparers, the intervention allowed for the incorporation of healthy nutrition guidelines into the city-mandated food protection course required for food preparers. Over 400 food handlers complete this class during any given month. For restaurants, implementation trainings were given to staff and promotional materials (menu labels, server pins, window decals, posters, and comment cards) were distributed. The major proposed outcomes of this intervention were to evaluate whether the availability of healthy options influenced decisions to go to a particular restaurant, whether it increased the likelihood that patrons would ask for menu modifications, and if the servers assisted customers with menu modifications. Although evaluation of the program never occurred due to limited funding, several barriers that were encountered will prove useful for future attempts in implementing the program. For example, finding ways to market the restaurants to increase customer traffic and providing rewards to those vendors that successfully implement the program is essential for long-term participation. In conclusion, the program ensured a community level buy-in to disease prevention by linking mandated training to consumer choice.

*Associations between Obesity
and Hunger/Food Insecurity*

In a society plagued by obesity it is hard to understand that obesity and hunger or household food insecurity co-exist. Hunger is defined as the “uneasy or painful sensation caused by a lack of food”. Food insecurity is the “limited or uncertain availability of nutritionally adequate and safe foods” (Bickel, Nord, Price, Hamilton, and Cook, 2000). Increased risk of obesity and either food insecurity or hunger is associated with low-income. Multiple examinations of population-based data have revealed an association between food insecurity and obesity among low-income women (Olson, 1999; Adams et al., 2003; MMWR, 2003).

Food insecurity was identified as a significant predictor of overweight in women after controlling for confounding variables such as income, occupation, regional influences, and household size

(Townsend, 2001). Although a causal relationship has not been established, mechanisms proposed to explain the interrelationship of obesity, poverty and food insecurity include the competing demands of food and household heating fuel during cold weather resulting in reduced food expenditures (Bhattacharya et al., 2003). Drewnowski and Specter (2004) examined how diet quality, energy density, and energy costs may mediate the relationship between obesity and poverty. The inverse relationship between energy density and energy costs may drive limited resource households toward reliance on highly palatable energy-dense foods including refined grains, added sugars and fats and away from less energy-dense and higher-cost fruits and vegetables. In economic models reducing costs led to high-fat energy dense diets similar to those consumed by low-income households (Drewnowski and Specter, 2004).

F. Physical Activity

Regular physical activity provides significant benefits for the treatment of persons with chronic disease and disabilities. Research has shown that regular physical activity can prevent the development of cardiovascular disease, colon cancer, high blood pressure (U.S. Dept. of Health and Human Services, 1996), diabetes (Diabetes Prevention Program Research Group, 2002) and osteoporosis (U.S. Dept. of Health and Human Services, 2004). Regular physical activity also helps treat a variety of common illnesses, including arthritis (CDC, 1999), diabetes (American Diabetes Association, 2004) and cardiovascular disease (NIH, 2002), reducing the need for medications and improving overall quality of life. Physical inactivity and unhealthy eating are significant factors leading to overweight and obesity in children and adults. An estimated 365,000 deaths each year are attributed to these behaviors (Mokdad, 2005).

Current public health recommendations for physical activity call for adults to get at least 30 minutes per day of moderate-intensity physical activity on most (preferably all) days of the week. These recommendations were intended to reduce the risk of chronic diseases (U.S. Dietary Guidelines, 2005). Recent research has shown that achieving this level of habitual physical activity can significantly reduce the risk of numerous chronic diseases among people who are overweight or obese, even if they don't lose weight (President's Council on Physical Fitness, 2000). In 2001, less than half of all adults (45% in the U.S. and 40% in NYS) met the minimum physical activity recommendation of 30 minutes per day on most days of the week (CDC, 2003c; IOM, 2004). Healthy People 2010 calls for at least 30% of adults to engage in vigorous physical activity, which is higher than current rates in the U.S. (25.8%) or NYS (24.3%) (**Figure 19**).

Figure 19: Proportion of adults who engage in vigorous physical activity that promotes the development and maintenance of cardio-respiratory fitness three or more days per week for 20 or more minutes per occasion. (HP Objective 22-3)

Source: BRFSS 2003, age-adjusted to the 2000 U.S. population

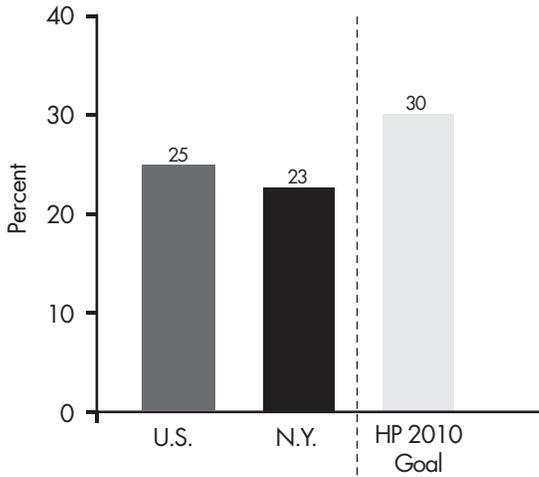
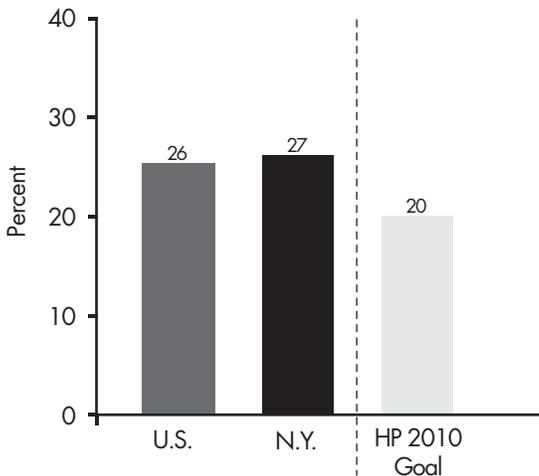


Figure 20: Proportion of adults aged 18 and older who engage in no leisure-time physical activity. (HP Objective 22-1)

Source: BRFSS 2003, age-adjusted to the 2000 U.S. population



Twenty-six percent of U.S. adults and 27% of adults in NYS engaged in no leisure time physical activity; rates that exceed the Healthy People 2010 target of 20% (Figure 20).

Rates of no leisure-time physical activity are higher among women, older adults and those with lower educational attainment, and ethnic minority populations, including Blacks and Hispanics.

Energy expenditure through physical activity is a key component in the prevention and treatment of overweight and obesity (NIH, 1998). Recently released U.S. Dietary Guidelines recommend approximately 60 minutes of moderate-to-vigorous-intensity physical activity on most days of the week without exceeding caloric intake requirements to manage weight and prevent gradual weight gain in adulthood. For adults to sustain weight loss, 60-90 minutes of moderate-intensity activity daily without exceeding caloric intake requirements is recommended (U.S. Dept. of Agriculture, 2005).

The American College of Sports Medicine makes the following recommendation for physical activity to assist in weight loss: “It is recommended that overweight and obese individuals progressively increase to a minimum of 150 minutes of moderate intensity physical activity per week. However, for long-term weight loss, overweight and obese adults should eventually progress

to higher amounts of exercise (e.g., 200-300 minutes per week or more than 2000 kcal per week of leisure-time physical activity)” (Jakicic et al., 2001). This recommendation is based on a reduction in total daily caloric intake as well.

There has not been enough research to establish the specific amount and type of physical activity needed for children and adolescents to achieve and maintain a healthy weight. Recent physical activity recommendations for promoting overall health and well being among children and establishing life-long physical activity habits have been issued. Children (ages 5 through 12 years) should accumulate at least 60 minutes, and up to several hours, of age-appropriate physical activity on all, or most, days of the week. Children should also avoid extended periods of physical inactivity during the daytime hours (National Association for Sport and Physical Education, 2004).

Among U.S. youth, physical activity data are limited, though what data are available indicate declines. By self-report, daily physical education among U.S. high school students has declined from 42% in 1991 to 28% in 2002 (YRBS; DHHS, 1996; IOM, 2004). In NYS, only 18.5% of teens report participating in daily physical education at school, which is about half the Healthy People 2010 target of 50% (Figure 21).

Figure 21: Proportion of adolescents who participate in daily school physical education. (HP Objective 22-9)

Source: YRBSS 2003

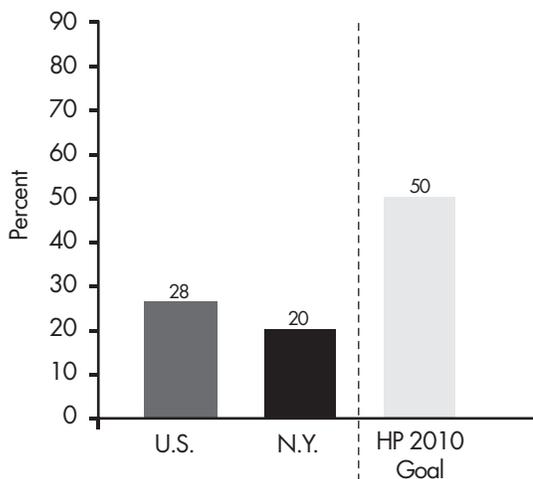
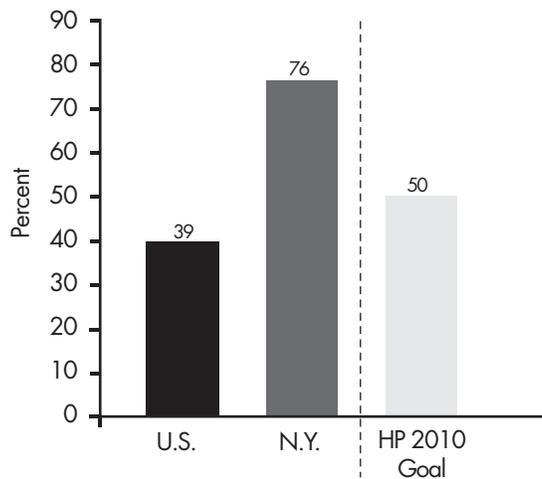


Figure 22: Proportion of adolescents who spend at least 50 percent of school physical education class time being physically active. (HP Objective 22-10)

Source: YRBSS 2003



In 1999, 75% of adolescents reported meeting current recommendations for physical activity (i.e., participating in at least 30 minutes of moderate physical activity at least 5 days a week or 20 minutes of vigorous activity at least 3 days a week). Rates are lower among Black and Hispanic adolescents. By self-report, 80% of adolescents in the U.S. and 76% of adolescents in NYS spend at least 50% of physical education class being physically active, exceeding the Healthy People 2010 target of 50% (Figure 22).

The Task Force on Community Preventive Services (CDC, 2001) has compiled recommendations for interventions that communities, policymakers and public health providers can implement. The Task Force, based on their review of current literature on the effectiveness of a variety of strategies to increase physical activity levels, strongly recommends a number of behavioral and social strategies to increase physical activity, including:

- ◆ Informational strategies such as “community-wide” campaigns and “point-of-decision” prompts, designed to increase physical activity by providing information necessary to motivate and enable people to change and maintain behavior over time.
- ◆ Behavioral and social approaches, like modifying school-based physical education curricula or developing policies that allow for more time for

students to engage in physical activity throughout the day.

- ◆ Social support interventions in community settings to promote physical activity through building, strengthening, and maintaining supportive social networks.
- ◆ Health behavior change programs designed to increase an individual's readiness for change.
- ◆ Environmental and policy approaches to increasing physical activity such as the creation of enhanced access to places for physical activity combined with informational outreach activities have also been shown to be effective.

These approaches are designed to provide environmental opportunities, support and cues to help people develop and maintain healthier behaviors (CDC, 2001).

Recent studies suggest that the way we build our communities and transportation systems have a significant effect on physical activity and obesity levels. Places where people can easily and safely walk, for leisure or to destinations such as work, school, or shopping, promote higher levels of physical activity. A national study of 448 metropolitan counties found that people living in sprawling, low-density counties walk less, weigh more, and are more likely to have high blood pressure than people living in more compact counties (Ewing et al., 2003). Residents in highly walkable neighborhoods spent

about 70 minutes more per week being physically active than people living in neighborhoods that were less walkable (Saelens et al., 2003). Walking is the most popular form of physical activity, with 38% of New Yorkers reporting some leisure-time walking. The next most frequently mentioned types of leisure-time activity are: running (7%), weight lifting (6%), gardening (5%) and bicycling (4%).

Changes to the built environment over the past 50 years, such as creation of a subsidized interstate highway system, growth in the automobile industry and a shift from urban areas to suburbs, resulted in changes in transportation. For U.S. adults, commuting by automobile to work increased from an average of 22 minutes in 1990 to 26 minutes in 2000. The percentage of U.S. children, aged 5 to 15 years, walking to school declined from 20.2% in 1977 to 12.5% in 2001 (Sturm, 2005b; IOM, 2004). For children living within 1 mile of school, only 31% walked or biked at least once a week in 1999 (CDC, 2002; IOM, 2004).

The benefits of physical activity are well known. All children and adults can benefit from engaging in more daily physical activity. Opportunities for increased access and availability of places to be more physically active is an important component of a public health approach to increasing physical activity.

Jumping Rope After School to Get the Jump on Preventing Overweight and Obesity

Spear-headed by Connie Herzig, Cooperstown elementary school children have been jumping as part of the Red Hot Ropes for 13 years. An after school class of 3rd, 4th and 5th grade students, that challenges more than ½ of each class plus some 20 parent volunteers to learn at least 15 tricks - tricks that are fun, yet great exercise.

“Forced Learning”: Cooperstown is known for baseball, but it’s the jump rope that’s “huge” at the school. Besides being fun and great exercise, Coach Connie Herzig says it’s a real confidence builder. Children learn if they work hard, they can learn. Learning isn’t seeing, it’s doing it and practice.

Feeling Good Mileage Class

For 6 weeks in the spring, Cooperstown elementary children are challenged to walk, run, skip around a ¼ mile track. Each lap is recorded by a paper punch on a card that’s filled after accumulating 20 punches or 5 miles. For each 5 miles, children receive a colorful plastic foot to tie on to their sneaker laces. For those who complete 25 or 50 miles, they receive recognition and a plastic number for their sneakers at an award ceremony when everyone also received a certificate listing their mileage.

G. Television Viewing, Media and Advertising

Television Viewing

Television viewing is the most common sedentary activity of children in the U.S. Children aged 2 through 17 years are estimated to spend approximately 4.5 hours a day watching television or videotapes, playing video games, using the computer, or browsing the internet (Woodard, 2000). Research has shown both television viewing and video game use to be associated with childhood obesity (Vandewater, Shim and Caplovitz, 2004; Robinson, 2001). An analysis of the Third National Health and Nutrition Examination Survey of children aged 8 through 16 years found that the prevalence of overweight was lowest among children watching one or fewer hours per day and highest among those watching 4 or more hours per day (Anderson, Crespo and Bartlett, 1998).

Although television viewing has been associated with childhood obesity in several epidemiologic studies (Robinson, 2001), inconsistencies in the research still exist regarding the relationship between television viewing and/or video game use and physical activity levels (Vandewater et al., 2004; Task Force on Community Preventive Services, 2002). Recent research by Vandewater et al., (2004) examined the link between overweight and activity level with children's television and video game use, and hypothesized three

mechanisms through which television viewing might promote childhood obesity. First, there is some evidence that time spent viewing television and video game use displaces physical activity. Second, increased television viewing is associated with increased exposure to advertisements for high-fat, high-calorie foods of poor nutritional content and with increased intake of such foods. A third hypothesis is that television viewing is associated with decreased metabolic rates. Efforts to replicate this finding, however, have been unsuccessful and to date no studies have been conducted to examine the relationship between video game use and metabolic resting rates (Vandewater et al., 2004).

Studies have linked television viewing to factors in the family and the home (Woodard, 2000). Children of preschool age who have a television in their bedroom watched 4.8 hours per week more TV/video than those without (Dennison, Erb and Jenkins, 2002). Children who live in a home where the TV is on all the time, and those who spend more than half their TV time watching alone, tend to watch more hours per week. Parental behavior also is associated with TV time. Children whose parents watch fewer hours per week of television, monitor their children's TV viewing closely, are more consistent with children's TV viewing rules, and know more about the media

and media effects, watch fewer hours per week of TV (Woodard, 2003; Brown, Childers, Bauman and Koch, 1990; Gentile, Walsh, 2002). Adolescents who reported watching a greater number of hours per day of television also reported eating high-fat foods, (Robinson, Killen, 2001) fast food, drinking soft drinks more frequently, and consuming fruits and vegetables less frequently. (French, Story and Neumark-Sztainer, 2001) In households where the television is on during meals, children consumed red meat, pizza, snack foods and soda more often, and fruits and vegetables less often (Coon, Goldberg, Rogers and Tucker, 2001). Having a TV in the bedroom was more strongly associated with increased risk of child overweight than the child's weekly TV/video viewing hours (Dennison et al., 2002). Black children/adolescents watch more hours of television than do Hispanics, who, in turn watch more than White children/adolescents, while children in families of lower socioeconomic status watch more hours of TV than those in families of higher socioeconomic status (Woodard, 2000). A number of studies indicate that high-fat or high-sugar foods are frequently advertised on children's television programs (Borzekowski and Robinson, 2001; Gamble and Cotunga, 1999; Kotz and Story, 1994).

Several TV reduction interventions have been reported in the literature. One clinic-based and four school-based interventions have resulted in decreases in reported TV viewing

time among children exposed to the interventions. The "Planet Health" intervention in Boston, MA, used an interdisciplinary curriculum addressing TV watching, promoting fruit and vegetable intake, lowering high-fat food intake, and increasing physical activity for use in grades 6 and 7 (Gortmaker, Peterson and Wiecha, 1999). A school-based intervention in San Jose, CA, incorporated lessons on self-monitoring and reducing television, videotape, and video game use into the curriculum for children in grades 3 and 4, distributed newsletters to parents, and provided television monitors to all households in the study (Robinson, 1999). A pilot intervention in an urban community clinic in Atlanta used counseling alone and counseling along with providing a behavioral intervention and TV time manager. Both groups showed a decrease in reported TV viewing time (Ford et al., 2002). The "Eat Well, Keep Moving" program in Baltimore developed materials addressing diet, TV watching, and physical activity to use in classrooms with children in grades 4 and 5 (Ford, 2002). "Brocodile the Crocodile," an intervention in 16 rural upstate New York daycare centers, used a curriculum and parental newsletters to reduce television/video viewing by 4.7 hours per week and reduced the percentage of children watching more than 2 hours per day from 33% to 18% (Dennison, Russo, Burdick and Jenkins, 2004).

Several recommendations do exist in an effort to provide guidelines to parents

regarding television viewing by children. The 2001 *Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity* recommended that children watch no more than two hours of television per day (The Surgeon General's Call, 2001). The American Academy of Pediatrics (AAP) recommends that children younger than two years of age be discouraged from viewing television, and that viewing for children two years and older be limited to no more than one to two hours per day of high quality educational shows (American Academy of Pediatrics, 2001).

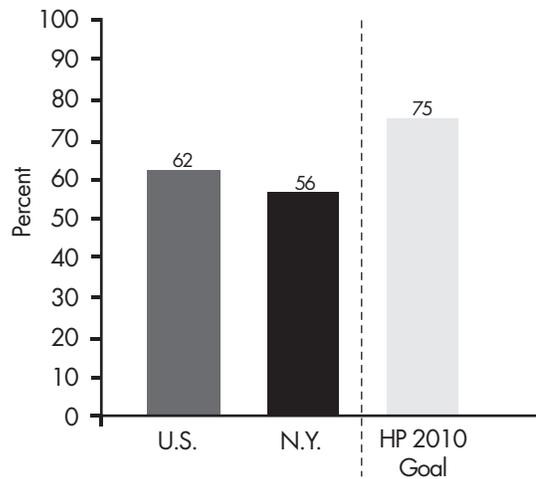
Data from New York State for 2003 indicates that 45% of students in grades 9 through 12 watched more than two hours per day of TV on an average school day, which is lower than the Healthy People 2010 target of 75% (YRBSS) (**Figure 23**).

A random sample of third grade children surveyed in upstate NYS in 2004 revealed that 18.4% watched more than 2 hours per day. A survey of TV viewing habits was collected from a survey of WIC participants in 2000. Children aged 2 up to 5 years watched an average of 2.3 hours per day of TV. Twenty percent of children and 20% of adults usually or always snacked while watching TV and 38% had a TV in their bedroom (Dennison et al., 2002).

A number of interventions aimed at reducing television viewing and video game use have been successful. The influence of the family and school environments have shown to be

Figure 23: Proportion of adolescents who view television 2 or fewer hours on a school day. (HP Objective 22-11)

Source: YRBSS 2003



powerful factors for both children and adolescents. The evidence is clear that sedentary activities such as television viewing and video game use contribute to childhood obesity.

TV Turnoff Week

Some communities and schools in New York participate in a TV Turnoff Week once a year to encourage families to turn off their televisions and participate in more recreational and physical activities for a week. This event has been shown to change the viewing habits of those who participated not only for seven days, but for much longer, sometimes even permanently, afterwards.

Reducing TV Viewing by Preschoolers

As part of the Department’s Obesity Prevention Program, a public health evaluation is being conducted in the Arbor Hill community area in Albany, New York. Known as the Health and Fitness by Age 5 Intervention, this community-based intervention targets preschool children, their parents and childcare teachers and related caregivers to prevent overweight among preschool. One of the main goals of the intervention is to reduce TV-viewing time at daycare centers and at home through implementation of the “Fit 5 Kids” curriculum in Centers. Using social marketing techniques, this intervention will also facilitate a community-wide “TV Turnoff Week”.

Mass Media

New Yorkers are inundated with media messages everyday by their televisions, computers, worksites, schools, buses and even elevators. More often than not, these messages are encouraging the viewer to eat high-fat, high-calorie, energy-dense foods like fast food, candy or soft drinks. The restaurant industry combined with the food and beverage companies represent the second largest advertising group in America (IOM, 2004; Gallo, 1999). To understand the magnitude of this spending power, McDonald's \$1 billion promotional costs in 1998 is 1000 times the National Cancer Institute's \$1 million annual budget for their 5-A-Day Educational Campaign to increase fruit and vegetable consumption (Nestle and Jacobson, 2000). This media force will need to be part of the solution in addressing the epidemic of obesity. Furthermore, evidence suggests that populations with the highest increases in obesity, such as children and minorities, are those being most heavily targeted for unhealthy foods and beverages by the media (Kaiser Family Foundation, 2004; Williams, 2003).

Children learn behaviors, and shape their value systems by the media (IOM, 2004; Villani, 2001). A report recently issued by the American Psychological Association (APA) Task Force on Advertising and Children found that children under the age of 8 years are vulnerable to commercial promotion because they do not possess the cognitive

skills to understand the difference between information and advertising (IOM, 2004; Kunkel et al., 2004). This is disconcerting considering that more than 50% of television advertisements directed at children promote candy, fast food, snack foods, soft drinks, and sweetened breakfast cereals (IOM, 2004; Kotz and Story, 1994; Gamble and Cotunga, 1999; Horgen et al., 2001; Hastings et al., 2003). While there is insufficient causal evidence to directly link food advertising with childhood obesity, current research indicates that food choices influenced by exposure to these advertisements contributes to the imbalance of energy and weight gain (IOM, Kaiser Family Foundation, 2004). For example, research has shown that food advertisements promote the purchase of their products by increasing the frequency children request their parents buy these items (in other words, advertising works) (IOM, 2004; Hastings et al., 2003). These advertisements not only affect short-term food choice and consumption patterns, but they have also been shown to have long-term effects due to a cumulative effect on children's eating and exercise habits (IOM, 2004; Horgen et al., 2001; CSPI, 2003; Hastings et al., 2003; Kunkel et al., 2004).

Research indicates that food companies gear advertising for energy-dense foods such as soda and fast food toward minority populations, and that these populations have shown the greatest inclination toward the

consumption of these items (Willett and Domolky, 2004; Williams, 2003). A study conducted in 1999 found that television programs targeting Black audiences contained more advertisements for candy and soda than did programs intended for a general audience (Tirodkar and Jain, 2003). Prime time television also contained a significantly greater number of food commercials overall than general prime time television (4.8 per half hour show compared to 2.9).

Mass media health promotion campaigns based on media interventions alone have not sufficiently demonstrated either increases in physical activity or a reduction in unhealthy eating behaviors, but changes in these behaviors have been found within multi-component campaigns where media was one important channel (IOM, 2004).

In 1972, Finland had the highest rate of cardiovascular disease (CVD) in the world. The North Karelia Project was initiated to address this health crisis (Willett and Domolky, 2004; Puska et

al., 1981). This project utilized media, schools, worksites, and spokespersons to educate residents about cardiovascular disease. Their evaluation measured risk factors at baseline and at 5-year intervals. By 1992, the CVD rates for men ages 35 through 64 years, had dropped by 57%, and recent data have shown a 75% decrease in total CVD mortality (Pietinen et al., 2001).

The Center for Science and the Public Interest's "1% or Less" campaign goal was to encourage adults and children, age 2 years and older to switch from drinking whole milk or 2% milk to 1% milk or skim milk. Paid TV advertising, newspapers and radio, point-of-sale messages, news coverage, community-wide nutrition education programs, and school-based programs were used in several communities. After a few weeks of the campaign, they found a 21% increase in use of low-fat milk and an 11% increase in skim milk after a few weeks of the campaign (Kaiser Family Foundation, 2004).

H. Policy and Environmental Changes

With overweight and obesity at epidemic levels among adults and children, traditional prevention strategies focusing on the individual would be inefficient and cost-prohibitive. There is widespread agreement that the food and physical activity environment rather than our biology is driving the epidemic. (Hill et al., 2003). To affect the behavior of populations and individuals, large scale, systemic and sustainable changes are needed that provide support for healthful food choices and increased physical activity in multiple population segments and settings. The goal is to promote

policy and environmental changes where we live, work and learn that make it easy for everyone to eat healthfully and to be physically active. Research has shown that behavior change is more likely to endure when both the individual and the environment undergo change simultaneously (Lasater et al., 1984; Abrams, 1991). The approach in New York, now and in the future, will be to focus on public policy, and on settings including home and family, schools, worksites, and communities that influence daily food and physical activity choices.

Schenectady's Promise: The Alliance for Youth

A countywide initiative spearheaded by United Way of Schenectady, the County Youth Bureau and BOCES of the Capital Region, and Kevin Karpowicz, MD, MPH. The program serves two primary purposes: positive youth development and community collaboration in an organized fashion. Schenectady's Promise is affiliated with the national effort, America's Promise.

There are over 80 partners, both individuals and groups, that have signed a pledge to fulfill the five promises that serve as the organizing principle. The five promises are: Health Start, Caring Adults, Safe Places, Marketable Skills and Opportunities to Serve. Each of the five promises has a specific action team where the issue is explored at length. Local agencies, where youth are involved, pledge to become sites of promise where each of the five promises will be addressed. The information generated by the action teams is shared with the sites of promise.

Schenectady's Promise pledges to include youth at every table. By empowering youth and including them as a valuable partner, Schenectady's Promise will work toward the positive youth development; where youth will be more likely to have a positive image of themselves and pursue more positive health promoting lifestyles.

State Department of Transportation Partnership

The Healthy Heart Program partnered with the State Department of Transportation to conduct over 15 Walkable Community workshops throughout the state. A 4-hour workshop brought together local decision makers, health and planning professionals, and concerned citizens to learn more about how they can make their communities more pedestrian friendly. In several of these communities, projects to improve pedestrian safety have been initiated as a direct result of these workshops.

state education standards for physical education; and organizational rules that provide time off during work hours for physical activity. Environmental interventions include changes to the economic, social or physical environments (ASTDHPPE/CDC 2001). Examples of environmental change interventions include incorporating walking paths and recreation areas into new community development designs; making low-fat choices available in cafeterias; reduced pricing for healthful choices in vending machines; and economic incentives to bring supermarkets into low-income neighborhoods. The nature of environmental interventions means they are implemented and evaluated over a longer period of time than more individually-oriented interventions (Brownson et al., 2001). Because policy change and environmental interventions are bound into systems change they are sustainable over time.

The socio-ecological approach and the use of environmental and policy changes provide a context in which to frame the NYS's Obesity Prevention Plan's goals and strategies. A logic model (**Appendix III: Logic Model**) has been developed to illustrate how the work will be conducted in various settings with a wide array of organizations to produce the results intended to prevent and to reduce overweight and obesity in NYS. This model recognizes the social levels,

target sectors, and settings in which decisions are made about food choices and physical activity.

The personal, social, cultural, financial and environmental influences on food selection and consumption that determine energy balance are complex. To a great extent, individual food choices depend on what is available to choose from whether at home, work, school, or retail food markets. Several studies have demonstrated that supermarkets, offering a wide variety of foods at lower cost are less likely to be located in low-income and minority neighborhoods (Morland et al., 2002). A multiphase inventory of selected markets in areas with a high percentage of Blacks contrasted with markets in higher-income areas with fewer Blacks revealed that markets in minority neighborhoods were significantly less likely to stock health-promoting foods. Markets in minority neighborhoods stocked a significantly lower variety and quality of fruits and vegetables. Products including low-fat milk, nonfat cheese, whole-grain pasta and breads, and low-fat meat and poultry items were also significantly less available (Sloane et al., 2003).

The food and nutrition environment of schools impacts student food choices. A study of seventh graders in 16 schools used a la carte item availability, school stores and vending machines, and amounts of fried potatoes served at school lunch as environmental markers.

The availability of a la carte choices was inversely related to fruit and vegetable consumption and positively associated with total fat and saturated fat intake. Snack vending machines were negatively correlated with fruit consumption and fried potatoes were positively associated with fruit and vegetable intake (Kubik et al., 2003). Pricing and marketing healthful foods to compete with lower cost foods, such as those high in fat and sugar, can influence food selection. Price reductions and promotion of lower-fat snacks resulted in increased sales of these snacks in both schools and worksites. A 50% price reduction for fresh fruit and baby carrots in two secondary schools resulted in quadrupling fresh fruit sales and doubling baby carrot sales (French, 2003).

To achieve healthful school environments it is essential to articulate nutrition goals in the form of written school nutrition policies developed with input from students, families, staff and administration. While 65% of secondary principals in a Minnesota study believed it was important to have a school nutrition policy, only 32% reported having a policy. Principals were positive about a healthy school food environment, but 98% of schools had soft drink vending machines and 77% had contracts with soft drink companies (French et al., 2002). A joint position

of the American Dietetic Association, Society for Nutrition Education, and American School Food Service Association asserts: “Comprehensive nutrition services must be provided to all of the nation’s preschool through grade twelve students. These nutrition services shall be integrated with a coordinated, comprehensive school health program and implemented through a school nutrition policy” (Briggs et al., 2003).

Worksites are identified in *Healthy People 2010* and in the *Surgeon General’s Action Plan to Prevent and Decrease Overweight and Obesity* as strategic settings for health promotion and risk reduction activities to reduce chronic diseases and obesity among adults. Worksites provide access to more than 100 million workers who spend the majority of their day at work. Worksites provide an ideal environment to reinforce the adoption and maintenance of healthy behaviors. *The Surgeon General’s Action Plan* recommends that worksite strategies to prevent and control overweight and obesity extend beyond traditional education and awareness to include worksite policies, the creation of supportive environments for healthy food and physical activity choices, and linkages that extend to families and communities (Surgeon General’s Action Plan, 2001).

The United Nations (UN) Challenge

A grant from the Robert Wood Johnson Foundation from July 1, 2001 - June 30, 2004 supported the creation and implementation of a two-year, comprehensive worksite health promotion program at the UN headquarters in New York City. The United Nations Challenge intervention was based on aspects of the 2003 Commissioner's Challenge at the NYC DOHMH and included three main components: (1) Know your Numbers, (2) Healthy Eating Plan and (3) Move for Life and was the first to utilize the Wellness Resource Center, an online tailored workplace health promotion tool. Additionally, the intervention conducted workshops that dealt with financial management, stress management, nutrition, and physical activity. The Wellness Initiative at the UN follows a seven-step model developed by the Wellness Councils of America (WELCOA). This model incorporates best practices for implementing health promotion and disease prevention programs, and accommodates the unique characteristics at each worksite, including organizational health structure, employee health needs and interests, and institutional resources. The latter characteristics are especially important at the UN, one of the most diverse employers in New York City.

Environmental and policy strategies for achieving public health goals of increasing physical activity should be aimed at changing the physical and socio-political environments. The creation of healthful physical and organizational environments can be established through the development of public policy that supports healthy practices, creation of supportive environments, and strengthening of community action (Brownson et al., 2001).

Environmental interventions are conducted by traditional health professionals, but also involve many sectors that have not previously been associated with public health, such as community agencies and organizations, legislators, departments of transportation and planning, and the media. The goal is to create changes in social networks, organizational norms and policies,

the physical environment, and laws (Brownson et al., 2001).

Strategies to increase physical activity often include providing access to facilities and programs not currently available, and supporting social environments that favor activity.

A Missouri study showed that community-based activities such as exercise groups, healthy cooking demonstrations, blood pressure and cholesterol screenings, and cardiovascular disease education were effective in increasing physical activity (Brownson et al., 1996).

Other examples of environmental and policy approaches designed to increase physical activity include walking and bicycle trails, funding for public facilities, zoning and land use facilitating activity in neighborhoods, mall walking programs, building construction encouraging activity, policies and incentives

promoting physical activity during the workday, and policies requiring comprehensive school health programs. School-based interventions focusing on policy and environmental change have been shown to improve eating and physical activity behaviors in children during school (Luepker et al., 1996). A health-related physical education curriculum substantially increased the time students spent being physically active during physical education classes (Sallis et al., 1997). Additionally, urban design and land-use planning strategies, and changes to transportation and travel policy and infrastructure that reduce dependence on motorized transport can increase physical activity (Brownson et al., 2001).

If successful programs are to be developed to increase physical activity among populations, then attention must

be given not only to the behavior of the people but also to the environment in which they live. Safe, well-maintained recreational areas must be made available and accessible to the community. An increase in resource allocation must be made to populations with greater need and risk for chronic disease. These strategies must have a broad and sustainable impact across populations and communities. (Humpel et al., 2002) Furthermore, new surveillance systems need to be developed to capture environmental and policy indicators related to physical activity. To support community-based interventions for promoting physical activity, it is essential to develop systems that are more responsive to data needs at the local level (i.e., city, county, or neighborhood) (Brownson et al., 2001).

NYC Department of Health and Mental Hygiene's Worksite Health Promotion Program

In Spring 2002, the Worksite Wellness Survey (WWS), an 11-page self-reported needs assessment tool designed to examine health risks, culture, environment and behavioral risk factors was administered within the NYC DOHMH. Its purpose was to facilitate the design of a comprehensive, evidence-based worksite health promotion program. The survey was administered to a random sample of 1,400 employees at the NYC DOHMH with a 49% response rate. The survey revealed that the average demographic represented at the NYCDOHMH was middle-aged (average age was 43.5 years old), female (73%) and ethnically and culturally diverse (34% African-American, 31% White (Non-Hispanic), 18% Hispanic, 10% other, 5% Asian, and 2% Native American). Of all respondents, 98% had achieved a high school level of education or greater.

The results suggested that the majority of the NYCDOHMH employees have poor eating habits (82.7% consumed fewer than 4 servings of fruits and vegetables per day), are sedentary (73%) and overweight or obese (58%). Employees were largely uninformed about their basic health indices such as blood pressure and cholesterol levels. Interest in on-site health promotion was good with the majority of respondents desiring programming in the areas of physical activity (53%), health screenings (48%), nutrition (47%), and weight control (47%).

The information gained from the WWS was instrumental in the development of programmatic initiatives that specifically targeted the unhealthy behaviors of the NYC DOHMH employees, and guided the development of the current strategic plan for the Wellness at Work Program. Initiatives developed for the NYC DOHMH have served as models that the Wellness at Work Program has extended to work sites citywide. These programs intervene on the behavioral level by educating employees about their health risks and behaviors, and offering programming to help them improve their eating habits and increase their physical activity. The various programs address environmental barriers to health and wellness through the introduction of food policies to increase the availability of healthy foods, targeted media campaigns regarding nutrition and physical activity, and the promotion of opportunities for increased physical activity on-site.

I. Surveillance, Program Evaluation and Research

State and local-level surveillance is an essential function of public health to monitor prevalence and trends in behaviors, risk factors, health outcomes, and populations at risk for unhealthy lifestyles, obesity, and related diseases. Decision-makers and stakeholders use surveillance information for a variety of purposes including program planning, policy development and evaluation. Effective surveillance is ongoing, population-based, and dynamic in order to provide information targeting populations at-risk, in defined geographic areas, and to fill information gaps. As a component of program evaluation, surveillance provides information to assess intermediate and long-term program outcomes such as changes in diet, physical activity, obesity, and disease outcomes. Comprehensive program evaluation further involves the data collection and reporting process and short-term outcome measures to assess the impact of interventions to prevent and control obesity and improve health behaviors in the community and

across the state. Evaluation studies involving the use of controls, comparison populations, and longitudinal follow-up may be employed to provide definitive information regarding the cause-and-effect associations between interventions treatments and outcomes. Research can provide new knowledge and evidence of the most effective approaches to decrease risk, prevent obesity, and improve health outcomes in the population.

Assessment of information on the health of the community is one of the three core functions of public health community assessment as a function of public health is further elaborated among elements of the Essential Public Health Services including: (1) monitoring health status to identify community health problems; (2) inform, educate, and empower people about health issues; (3) evaluate effectiveness, accessibility, and quality of personal and population-based health services; and (4) research for new insights and innovative solutions to health problems.

A Healthy People 2010 goal is to ensure that states and local health departments have the infrastructure to effectively provide essential public health services, including the health data and surveillance systems necessary to provide information on risk, illness, disability, and death from acute and chronic conditions. To help ensure that data and information systems are accessible, accurate, timely, and complete, several Healthy People 2010 objectives have been developed and incorporated into this plan (see **Goal 10**).

The active use of reliable and valid information from a variety of sources to guide program planning, decision-making, and evaluation is the hallmark of the New York State Strategic Plan for Overweight and Obesity Prevention. This is built upon

the foundation of established, ongoing statewide surveillance systems including the Behavioral Risk Factor Surveillance System (BRFSS) of adults, the Youth Risk Behavior Surveillance System (YRBSS) of high school students, the Pediatric Nutrition Surveillance System (PedNSS) of low-income preschoolers, and the Pregnancy Risk Assessment Monitoring System (PRAMS) of child-bearing women. These provide important risk factor and outcome measures of relevance to overweight and obesity prevention for monitoring and assessing trends in their respective population groups. Complementary information from other ongoing statewide data systems are also used to measure obesity-related morbidity and mortality outcomes, economic burden, and other population

Center for Obesity Research and Education-C.O.R.E

An initiative of SUNY Cortland whose purpose is to serve as a research and educational resource for endeavors on obesity and physical activity to reduce the burden of obesity in children and adults through research, education, and service. The centerpiece of CORE is the creation and maintenance of a statewide database regarding current and on-going physical demographics of children in grades K-6 within each of the 62 New York State Counties. The immediate outcome of this data collection will be an account of overweight status of our children in NYS.

Spearheaded by Philip J. Buckenmeyer, and Jeff Bauer, Ph.D. the CORE initiative became operational as of January 2005. The strength of CORE is its multidisciplinary composition that includes 14 faculty from various departments across campus. These departments support up to 1,400 student teachers across the state, which provide an immediate contact to several NYS regions.

characteristics. These include hospital discharge information from the Statewide Planning and Research Cooperative System (SPARCS), Vital Records, population statistics provided through the U.S. Bureau of the Census and the New York State Data Center, and Medicaid.

While New York State is rich in available data resources, there are population groups who are not assessed and areas where surveillance could be either expanded or enhanced to better monitor overweight/obesity prevention efforts. There is, for example, no established surveillance system for elementary school children in New York State or in the nation. The YRBSS surveys primarily high school students, but could be modified to include middle school students. It relies on self-reported

anthropometric and behavioral data. Other surveillance systems could also be modified to report measures of interest to overweight/obesity prevention and risk factor control.

The success of overweight and obesity prevention in New York State depends upon sound research and thorough program evaluation to guide the development and implementation of targeted, effective, and culturally sensitive interventions. Research focuses risk-factor-management efforts to reduce the prevalence of overweight, the morbidity of obesity and obesity-related diseases, the mortality rates from obesity-related diseases and the overall economic burden of overweight and obesity on New York State. Evaluation facilitates efficient utilization of overweight/obesity program resources.

Strategies

- A. Specific Strategies
- B. Selection of Populations at Highest Risk
and Strategies for Intervention
- C. Next Steps

A. Specific Strategies

Goal 1

Increase the awareness of overweight and obesity as a major public health threat.

Objective 1a

Increase the perception that overweight and obesity are significant public health risks by a wide array of stakeholders including the healthcare community and the general public.

Objective 1b

Increase the proportion of persons who know the health risks (hypertension, dyslipidemia, insulin resistance, etc.) and diseases (i.e., diabetes, cardiovascular disease, cancer, arthritis, asthma, disability) associated with overweight and obesity.

- ◆ Use formative evaluation targeting high-risk populations to identify barriers to recognition of overweight/obesity as a significant personal health risk.
- ◆ Use social marketing to develop culturally-appropriate messages tailored to specific high-risk populations and low-income groups to increase knowledge, attitudes, beliefs and change perceptions.
- ◆ Develop a coordinated statewide media campaign targeting high-risk populations who experience health disparities.
- ◆ Work with the healthcare industry to increase the proportion of health care providers, health maintenance organizations, and health insurance companies who present and discuss the health risks associated with overweight and obesity in sensitive, culturally-appropriate language to their patients.

Objective 1c

Increase the proportion of persons aware of the economic impact (i.e., increased healthcare and insurance costs, increased absenteeism) associated with overweight, obesity and obesity-related diseases.

Objective 1d

Increase the proportion of persons who know the environmental, socioeconomic and personal factors (poor nutrition, physical inactivity) that contribute to obesity.

Goal 2

Increase early recognition of overweight and/or excessive weight gain.

Objective 2a

Increase the proportion of healthcare providers who routinely monitor, track and inform patients and/or parents of weight gain or growth:

- ✧ For adults, using Body Mass Index (BMI) to screen for overweight
- ✧ For children, aged 2-18 years, using gender-specific BMI-for-age-percentiles
- ✧ For infants, aged 0-2 years using gender-specific weight-for-height percentiles
- ✧ For pregnant women, using weight gain charts based on a woman's pre-pregnancy BMI
- ◆ Increase knowledge and use of BMI as a screening tool by medical providers to improve identification of children who are overweight and adults who are overweight or obese.
- ◆ Identify barriers to implementation of practice recommendations and policies to support obesity prevention and control.
- ◆ Collaborate with the insurers, and other medical professional organizations, managed care programs and healthcare systems to provide incentives for maintaining healthy body weight
- ◆ Increase the number of healthcare organizations that include screening and obesity preventive services in routine clinical practice and quality assessment measures.

Objective 2b

Increase the proportion of adults who know their own weight status (based on BMI) and their children's weight status (based on gender-specific BMI-for-age percentile).

- ◆ Work with healthcare providers to increase the use of evidence-based counseling and guidance to patients and parents about promoting a healthy weight and preventing overweight and obesity by healthy eating and physical activity.
- ◆ Collaborate with professional, medical and allied health organizations and community leaders to develop culturally-sensitive methods of discussing weight status and weight-related issues, especially with high-risk population groups
- ◆ Increase understanding and use of BMI by the general population
- ◆ Use formative evaluation to assess the needs of high-risk populations in understanding "healthy weight" and the use of BMI to define weight status.

Objective 2c

Increase the proportion of schools that collect accurate height and weight measurements (required by New York State Education Department at school entrance and in grades 1, 3, 7 and 10), calculate BMI, and communicate pupils' weight status (based on BMI percentile) to the Department of Health.

- ◆ Collaborate with the NY State Education Department and the NYC Education Department, local school districts and other stakeholders to develop a system to collect students' height and weight and gender-specific BMI-for-age percentile and report findings to the DOH for monitoring and program planning purposes.
- ◆ Involve school health services and school physical education departments in childhood obesity prevention efforts.

Objective 2d

Increase the proportion of [pregnant women] who gain the optimal recommended amount of weight [as defined by Institute of Medicine (IOM) Guidelines] based on a woman's pre-pregnant weight during their pregnancies (HP 2010, 16-12).

- ◆ Collaborate with medical and other healthcare providers who use BMI to guide recommended weight gain during pregnancy using IOM guidelines.
- ◆ Work with Medicaid and other healthcare providers to increase the use of counseling regarding nutrition, physical activity and appropriate weight gain during pregnancy.
- ◆ Increase patient, provider and public awareness of the importance of appropriate weight gain during pregnancy, based on IOM guidelines.
- ◆ Increase opportunities for women to be physically active during pregnancy, e.g. by encouraging community organizations and health clubs to offer physical activities for pregnant women.

Goal 3

Improve management (medical and non-medical) of people who are overweight or obese and those with obesity-related diseases.

Objective 3a

Increase the proportion of people appropriately counseled by medical and allied healthcare providers about achieving and maintaining a healthy weight.

- ◆ Develop training programs for medical and allied health professionals to improve their knowledge and counseling skills related to nutrition, physical activity, and other life behaviors related to obesity prevention.

- ◆ Increase medical and allied healthcare provider awareness of critical (i.e., high risk) periods during the lifecycle for excessive weight gain and the development of overweight or obesity (i.e., pregnancy, infancy, early childhood, adolescence).
- ◆ Develop culturally-sensitive messages specifically targeted to individuals during each critical period.
- ◆ Reduce disparities in obesity-related diseases by income, sex, race/ethnicity and educational attainment.

Objective 3b

Improve management of obesity-related diseases.

- ◆ Work with professional medical organizations to identify and disseminate best practices in identifying, monitoring, and optimizing treatment of obesity-associated risk factors in provider settings.
- ◆ Increase availability of chronic disease self-management programs in community settings.

Objective 3c

Reduce barriers that impede medical and allied healthcare professionals from managing (providing behavioral, nutritional, medical and surgical treatment) of individuals who are overweight or obese.

- ◆ Work with insurers and employers to identify, prioritize and evaluate insurance coverage by public and private payers for behavioral, nutritional, medical and surgical treatment of overweight and obesity.

Goal 4

Increase initiation, exclusivity and duration of breastfeeding during infancy.

Objective 4a

Increase the proportion of mothers who exclusively breastfeed their babies in early postpartum to 75% and at 6 months to 50%, and increase the proportion of mothers who breastfeed at one year of age to 25% (HP 2010, 16-19).

- ◆ See Figures 14, 15, and 16
- ◆ Increase promotion and support for breastfeeding as the “normal” and preferred method of feeding infants.

Objective 4b

Reduce racial/ethnic, income, and age disparities in breastfeeding rates.

- ◆ Increase access by local agency staff of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) and Prenatal Care Assistance Program (PCAP) staff to breastfeeding education through innovative techniques such as distance learning, teleconferences, website development, and the expansion of peer counselor training programs.
- ◆ Identify barriers to breastfeeding among participants enrolled in the WIC, Food Stamp Nutrition Education Program (FSNEP) and related food and nutrition programs in the community.

Objective 4c

Increase the proportion of medical and allied healthcare providers who counsel women about breastfeeding during prenatal period, at the time of delivery and postpartum and who provide lactation support services.

- ◆ Improve continuing education about breastfeeding to physicians, midwives, nurses, and dietitians.
- ◆ Increase training opportunities for certified lactation specialists.

Objective 4d

Increase protection, promotion and support for breastfeeding by mothers in the workplace.

- ◆ Collaborate with employers, the NYS Business Council, Chambers of Commerce, the Retail Council of NYS, the National Federation of Independent Businesses (NFIB) and other business groups to identify barriers and develop incentives to support maternity leave and to promote breastfeeding in the workplace.
- ◆ Work with employers to expand the use of "NYS Best Practices for Breastfeeding Promotion in Workplace."
- ◆ Work with urban development planners to facilitate placement of daycare centers at and near worksites.

Goal 5

Improve lifelong healthy eating.

Objective 5a

Increase awareness and knowledge about healthy eating.

- ◆ Increase the proportion of persons counseled about the benefits of eating healthy and using food appropriately.

- ◆ Use social marketing strategies to increase the knowledge and awareness of the benefits of healthy food choices that are culturally-appropriate and tailored to specific populations, particularly low-income groups, minorities and those at increased risk of obesity.
- ◆ Work with schools to enhance health curricula to address nutrition and energy balance with a behavioral skill focus.
- ◆ Collaborate with schools of medicine, nursing, allied health and nutrition to improve nutrition education and health-promoting behavioral counseling skills taught to students and professionals.
- ◆ Increase the proportion of parents counseled about optimal nutrition and feeding of children beginning in infancy.
- ◆ Increase the awareness of availability of locally-grown fruits and vegetables through the Pride of New York generic advertising program, the Farm-to-School program, farmers' markets, and the Department of Agriculture and Markets' Farm Fresh Guide.

Objective 5b

Increase the proportion of persons who balance caloric intake with energy expenditure to achieve and maintain a healthy weight.

- ◆ Work with partners to implement a sustained, targeted, community-wide information campaign for individuals and families to change knowledge, attitudes, and beliefs about the importance of balancing caloric intake with energy expenditure.
- ◆ Work with local and state policymakers to develop and implement guidelines and policies to ensure that foods and beverages available in schools and/or childcare settings are consistent with nutritional guidelines, and support the goal of preventing excess energy intake among students, and helping students achieve energy balance at a healthy weight.

Objective 5c

Increase the proportion of persons aged 2 years and older who meet dietary recommendations for calcium [by increasing consumption of low-fat or fat-free milk or dairy products]

(HP 2010, 19-11).

Objective 5d

Increase the proportion of persons aged 2 years and older who consume at least three daily servings of vegetables, with at least one-third being dark green or orange vegetables (HP 2010, 19-6), and at least 2 servings per day of fruits (HP 2010, 19-5).

- ◆ See Figures 17 and 18

Objective 5e

Increase the proportion of children and adolescents whose intake of meals and snacks at [childcare centers,] schools, [and after-school programs] contributes to good overall dietary quality (HP 2010, 19-15).

- ◆ Collaborate to enhance or adopt the Food Guide Pyramid to better convey how foods/portions should be distributed.
- ◆ Use social marketing strategies to increase awareness and knowledge of U.S. Dietary Guidelines.

Objective 5f

Increase food security among [NYS] households and, in so doing, reduce hunger (HP 2010, 19-18).

- ◆ Conduct outreach and enrollment campaigns to increase the number and percentage of eligible households, children, adults and elderly that participate in federal and state food and nutrition programs including WIC, food stamps and Farmers' Market Nutrition Programs.
- ◆ Collaborate with statewide non-profit organizations to identify and reduce barriers to federal and state food and nutrition program participation.
- ◆ Increase the amounts of fruits and vegetables procured by food banks for distribution to emergency food providers such as food pantries and soup kitchens.

Goal 6

Increase lifelong physical activity.

Objective 6a

Increase the proportion of adolescents and adults aware of current physical activity guidelines and recommendations.

- ◆ Develop a media health promotion campaign emphasizing increasing physical activity to prevent or reduce overweight and obesity.
- ◆ Collaborate with medical, allied health, educational and community partners to raise awareness and improve dissemination of physical activity guidelines and recommendations.
- ◆ Increase the proportion of persons appropriately counseled by medical and allied healthcare professionals and educators about physical activity or exercise (HP 2010, 1-3a).
- ◆ Increase the number (proportion) of healthcare providers who use effective methods to encourage patients to increase physical activity levels (HP 2010, 7-7).

Objective 6b

Increase the proportion of adults aged 18 and older who meet current recommendations for physical activity, specifically:

- ✧ Reduce to at most 20 percent the proportion of adults aged 18 and older who engage in no leisure-time physical activity (HP 2010, 22-1) (See Figure 19).
- ✧ Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day (HP 2010, 22-2), and/or vigorous physical activity for at least 20 minutes per day (HP2010, 22-3).
- ◆ See Figure 20

Objective 6c

Increase the proportion of worksites offering employer-sponsored physical activity and fitness programs (HP 2010, 22-13).

- ◆ Work with the NYS Business Council, Chambers of Commerce, insurance payers, health care plans, Wellness Councils of America, the Retail Council of NYS, National Federation of Independent Businesses (NFIB), and other business organizations, partners and policymakers to develop ways to affect environmental and policy changes in work sites to increase opportunities for work site wellness.
- ◆ Develop best strategies, e.g., training partners such as occupational nurses, Chambers of Commerce, and others to provide technical assistance to employers to expand worksite exercise and wellness programs for all types of employers.

Objective 6d

Increase the proportion of [children and] adolescents [aged 2-18] years who engage in moderate physical activity for at least [60] minutes per day on five or more of the previous seven days (HP 2010, 22-6; NASPE).

- ◆ Work with community youth organizations to develop ways to increase the number and variety of physical activity programs provided before or after school by these organizations.
- ◆ Enhance school health curricula to devote adequate attention to physical activity with a behavioral skills focus.

Objective 6e

Increase the proportion of schools that comply with NYS Department of Education physical education regulations.

- ◆ Identify barriers to complying with regulations.

Objective 6f

Increase the proportion of [children and] adolescents who spend at least 50% of school physical education class time being physically active (HP 2010, 22-10).

- ◆ Provide training and technical assistance to increase the activity level of physical education curriculum.
- ◆ See Figure 21

Objective 6g

Increase the proportion of [NYS's] public and non-public schools that require daily physical education classes for all students (HP 2010, 22-8).

- ◆ See Figure 22

Objective 6h

Increase the number/proportion of trips made by walking, bicycling [and other means of self-propulsion (e.g., wheelchairs, rollerblading)] (HP 2010, 22-14 and 22-15).

- ◆ Provide training and technical assistance to local pedestrian groups.

Goal 7

Decrease exposure to television and other recreational screen time.

Objective 7a

Increase awareness and knowledge of recommendations to limit television viewing and other recreational screen time.

- ◆ Work with medical and allied healthcare providers, educators and others to develop efficient ways to counsel individuals, families, and other caregivers about limiting television viewing and other recreational screen time (videos, computer or video games, internet, etc.) to no more than 1-2 hours per day (for persons two years and older) and discourage any viewing by children under two years. (American Academy of Pediatrics Guideline).
- ◆ Conduct a social marketing campaign to reduce television viewing.
 - ◇ Educate the public, specifically targeting boards of education, teachers, parents and pediatricians, about the health benefits of reducing television viewing.
 - ◇ Inform teachers, parents, and childcare workers of their significance as role models in reducing television viewing among children.

Objective 7b

Increase the proportion of [children,] adolescents, [and adults] who view television [and other recreational screen time] no more than two hours per day (HP 2010, 22-11; AAP).

- ◆ Work with schools and preschools to implement TV and media reduction curricula such as Student Media and Awareness for the Reduction of Television-viewing (SMART) and Fit by 5 to reduce use of television and other recreational screen time in schools, aftercare/ beforecare programs and childcare settings.
- ◆ Work with schools and communities to increase participation in “National TV Turn-off Week” campaigns.
- ◆ Enhance health curricula to include reducing sedentary behaviors, specifically targeting television and other recreational screen use, and include a behavioral skills focus.
- ◆ See Figure 23

Objective 7c

Increase media literacy.

- ◆ Work with schools to increase the use of school-based media literacy programs.
- ◆ Develop training programs for educators and healthcare providers to implement media literacy programs in other settings.

Objective 7d

Decrease exposure by children and youth to advertisement for products associated with increased risk of obesity.

- ◆ Work with the advertising industry to develop marketing and advertising guidelines for high calorie, low nutrient foods and beverages to minimize the risk of obesity in children and youth.
- ◆ Work to restrict commercials for high calorie, low-nutrient foods on school television programs.
- ◆ Develop, implement, and enforce school policies to create schools that are advertising-free to the greatest possible extent.

Goal 8

Increase policy and environmental supports for physical activity and healthy eating, including breastfeeding.

Objective 8a

Increase the number/proportion of institutional and environmental policies that promote energy balance.

- ◆ Improve understanding and use of nutrition and food labeling.
- ◆ Increase the proportion of restaurants that offer healthy menu options with appropriately-sized portions and caloric content and general nutritional information available at point-of-purchase.

Objective 8b

Increase the proportion of childcare centers, schools and worksites that have 1) assessed, 2) developed plans, 3) implemented and 4) evaluated changes to their nutrition and physical activity environments.

- ◆ Assess policies and change following NYS legislation encouraging “School District Child Nutrition Advisory Committees.”
- ◆ Assess nutrition, physical activity and other wellness policies and change following federal legislation requiring wellness policies (for schools participating in federal school meals program). (effective July 2006)
- ◆ Develop and disseminate model nutrition and physical activity guidelines and policies for schools.
- ◆ Increase the work site supports for healthy eating, use of NYS Guidelines for Healthy Meetings, and support of farmers’ markets and Community Supported Agriculture (CSA).
- ◆ Partner with organizations such as the Statewide Center for Healthy Schools, Childcare Coordinating Councils and the After-School Corporation to provide training and technical assistance in assessing and improving the nutrition environments in schools, childcare centers, and after-school programs.
- ◆ Collaborate with schools to ensure that all school meals meet the Dietary Guidelines for Americans.
- ◆ Develop community evaluation tools to measure the availability of opportunities for physical activity and healthful eating.

Objective 8c

Increase the availability and accessibility of affordable, healthy foods and beverages.

- ◆ Collaborate with local produce growers and community organizations to increase the availability and affordability of fruits and vegetables in school, childcare, and after-school settings through promotion of farm-to-school and similar initiatives.
- ◆ Collaborate with the Child and Adult Care Food Program (CACFP), Child Care Health Promotion Specialists, Child Care Coordinating Councils and other resources to improve the food and nutrition environments of child care centers.

- ◆ Work with local communities and neighborhoods, retail marketing associations, retailers, economic development agencies and the NYS Department of Agriculture and Markets to improve access to: supermarkets, farmer’s markets, community gardens, urban farmstands, and local markets that provide affordable fresh fruits, vegetables and low-fat dairy products.
- ◆ Support the expansion of wireless electronic benefits transfer (EBT) machines and other mechanisms that enable farmers’ markets to serve Food Stamp Program participants with high-quality fruits and vegetables.

Objective 8d

Increase the availability and accessibility of affordable places to be physically active.

- ◆ Increase the number of facilities or places for physical activity (e.g., parks, playgrounds, gyms, community centers, schools, etc.) open for community use.
- ◆ Increase the availability and use of community recreational facilities and other places for physical activity by individuals across the lifespan including those with disabilities.
- ◆ Revise comprehensive plans, zoning and subdivision ordinances, and other planning practices to increase availability and accessibility of opportunities for physical activities in new developments.

Objective 8e

Increase advocacy and public support for initiatives, policies and legislation that eliminate barriers to healthy food choices and physically active lifestyles.

- ◆ Support capital improvement projects that increase opportunities for physical activity in existing areas.
- ◆ Support building local schools within walking and bicycling distance of the neighborhoods they serve.
- ◆ Improve street, sidewalk, and street-crossing safety of routes to school.
- ◆ Work with local and state government to change transportation policies and practices to promote safe non-motorized transportation (Guide to Community Preventive Services GCPS).
- ◆ Change state and local land use policies and practices to promote more bicycle and pedestrian friendly communities (GCPS).

Goal 9

Increase and maintain effective public health responses to the obesity epidemic in NYS.

Objective 9a

Increase availability, accessibility and sustainability of support and financial resources for overweight/obesity prevention activities.

- ◆ Leverage additional resources for obesity prevention programs and research efforts through grants and other sources.

Objective 9b

Strengthen statewide, regional and local infrastructure to promote coordination among partners across the state and within each region.

Objective 9c

Enhance communication and collaboration among the overweight/obesity prevention program, community partners and statewide stakeholders.

Goal 10

Expand surveillance and program evaluation to prevent overweight and obesity.

Objective 10a

Analyze, synthesize and disseminate existing data related to overweight, obesity, obesity-related diseases, nutrition, physical activity, television viewing, breastfeeding, food insecurity and related issues to monitor progress toward achieving program goals.

- ◆ Assess the utility of existing data systems for population-based surveillance of obesity-related indicators, risk factors and outcomes including data sources from partners outside the Department of Health.
- ◆ Routinely analyze reports of prevalence and trends from existing surveillance and other relevant data systems.
- ◆ Report on the health and economic burden of obesity in New York State.

Objective 10b

Summarize and disseminate science-based best practices for the prevention of overweight and obesity on an ongoing basis.

- ◆ Ensure timely access and dissemination of surveillance findings to meet the information needs of obesity prevention stakeholders.
- ◆ Apply the results of research to improve program effectiveness.

Objective 10c

Enhance, expand and strengthen surveillance to ensure that information is available across the population and within defined geographic areas.

- ◆ Expand routine collection of data pertaining to breastfeeding, perinatal weight gain, and television viewing.

- ◆ Identify gaps in surveillance information and develop strategies and resources to conduct surveillance across the population and within defined geographic areas.
- ◆ Modify and integrate existing surveillance and other data systems to measure and report on obesity-related indicators.
- ◆ Develop a statewide school-based monitoring system to assess the prevalence of childhood obesity.

Objective 10d

Develop and implement data collection systems to evaluate the impact of the overweight and obesity prevention program.

- ◆ Utilize formative evaluation to assess design needs and program implementation needs.
- ◆ Develop and validate policy and environmental indicators of overweight and obesity prevention.
- ◆ Develop a Community Check tool to be used at the local level to measure environmental and policy supports for physical activity and to guide local action.

Objective 10e

Evaluate the design, implementation and effectiveness of interventions to reduce overweight and obesity and to improve health outcomes.

- ◆ Develop strategies for formative process, impact and outcome evaluation for the obesity prevention program.
- ◆ Collaborate with New York State academic institutions, local health departments, and community organizations to conduct, evaluate and incorporate new research to support the obesity prevention program.
- ◆ Work with CDC sponsors to develop and report relevant obesity program performance measures.

Objective 10f

Increase the number and diversity of obesity prevention programs across age, gender, educational levels, income levels and racial/ethnic groups that are being evaluated.

- ◆ Identify high-risk populations and target specifically tailored interventions to those groups.
- ◆ Provide technical assistance to obesity program partners and coalitions to conduct local level program evaluation.

B. Selection of Populations at Highest Risk and Strategies for Intervention

The results of state and national surveys show that obesity rates far exceed the Healthy People 2010 objective of 5 percent across the population. Furthermore, the prevalence of overweight and obesity has increased for all Americans and New Yorkers. Thus, broad strategies affecting all New Yorkers and all socio-ecological spheres are needed.

Adults

Although the problem is pandemic, there are population groups at even greater risk. Findings from 2003, based on self-report, show that the prevalence of obesity in adults increases with age, and is inversely associated with income and educational attainment. Obesity prevalence among adults exceeds 25 percent for those with less than a high school education, a household income less than \$15,000 annually, and those 45-64 years of age. Over one-third (36.5%) of New York State adults with disabilities are obese.

There are also disparities in obesity rates by racial/ethnic groups and by gender. Over two-thirds (67.4%) of non-Hispanic Black adults in New York State are overweight or obese, compared to 58.3% Hispanics and 55.0% White non-Hispanics. Obesity prevalence among non-Hispanic Black adults (29.9%) is 1.5 times that of non-Hispanic Whites

(20.1%). Non-Hispanic Black females are at particularly high risk with an obesity rate of 32.9%, compared to 25.6% for Hispanic females and 18.1% for non-Hispanic Whites.

Children

Obesity prevalence rates for New York children exceed national rates. The prevalence of obesity among preschool children living in low-income families in NYS (16.8%) exceeds that for low-income children (14.7%) and exceeds national NHANES rates from a sample of all preschool children (10.3%). In NY, the highest obesity rates among low-income preschool children are for Hispanics (21.9%), followed by Blacks (15.2%) and Whites (13.5%). New York State also has very high obesity rates among elementary school children. Overall prevalence for children from NYC (23%) and upstate NY (21%) were more than four times the Healthy People 2010 target of 5% or less. Rates also differed by race/ethnicity, with rates of 18.7% and 15.9% for Whites, 22.5% and 22.8% for Blacks, and 29.3% and 31.1% for Hispanics, for the upstate NY and NYC samples, respectively.

Thus, high-risk populations in New York State include children, especially Hispanic children. Adults with low-education and low-income are also at increased risk of obesity and black

women are an especially high risk subgroup. Challenges to reaching these high-risk populations will involve understanding perceptions of the public health risks associated with obesity, identifying barriers, and developing culturally and linguistically appropriate messages. Furthermore, overcoming barriers of low-income populations

such as unsafe neighborhoods, limiting outside play and physical activity, may require changes to ordinances, capital improvement programs, and other planning practices by state and local government. Strategies aimed at businesses to increase accessibility and affordability of more healthful foods may require innovative incentives.

C. Next Steps

The goals, objectives and strategies outlined within the statewide strategic plan will be used to guide the actions needed to implement the plan. Steering committee, leadership team, planning group and current stakeholder participation will be expanded by inviting others into partnership. Partners coming together to prevent and reduce overweight and obesity among New Yorkers will need to select and prioritize the goals and objectives that they will address. Long-term community health improvement changes will be pursued through building and sustaining collaborative partnerships at the state, regional and local levels.

The New York State Department of Health will continue to use Centers for Disease Control and Prevention Cooperative Agreement funding for the *State Nutrition and Physical Activity Program to Prevent Obesity and Related Chronic Diseases*,

the socio-ecological approach and their partnerships to achieve long-term plan goals. Work will continue to identify and secure additional resources needed to produce systemic and programmatic changes that will help New Yorkers make healthy choices easy choices.

Continued vigilance of the public health threat that overweight and obesity presents is needed. To accomplish this, ongoing process and outcome evaluation will be conducted to ascertain the degree to which desired health outcomes are being met and to determine whether or not continued resources and efforts toward selected strategies are producing the expected yield. Policy and environmental changes identified as improving or having the promise of improving the public health condition will continue to be considered for implementation.

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A. Partnership Vignettes

Cornell NutritionWorks

www.nutritionworks.cornell.edu

The Online Course on Preventing Childhood Overweight is an interactive, web-based continuing professional education program for nutrition and health practitioners. As part of Cornell NutritionWorks, a new online course on “Preventing Childhood Overweight at Home, at School, and in the Community” is being developed, which will be pilot tested in the spring 2005. This course will build upon the growing number of offerings already available on Cornell NutritionWorks related to childhood overweight. Cornell NutritionWorks provides a convenient, accessible form of continuing education to busy professionals to increase their capacity to address nutrition issues such as childhood obesity at the community level.

Cornell NutritionWorks was developed by Cornell University Division of Nutritional Sciences faculty in 2002 to meet the professional development needs identified by community practitioners. In addition to the opportunity to interact with Cornell faculty members, Cornell NutritionWorks provides access to current nutrition research, references and tools that enhance practice, discussion forums for exchanging information with peers, and self-assessments for continuing professional

education units. Membership in Cornell NutritionWorks became free in 2004. There are currently over 1,300 members, from all 50 states and 28 countries. There is a small fee for credits, which can be paid online. Current funding for Cornell NutritionWorks comes from Cornell Cooperative Extension, the College of Human Ecology at Cornell, and the Offices of the President and Provost at Cornell.

Cornell University Division of Nutritional Sciences Food and Nutrition Education in Communities

The Food and Nutrition Education in Communities programs include Cornell Cooperative Extension’s (CCE) work through the Expanded Food and Nutrition Education Program (EFNEP) and Food Stamp Nutrition Education or Eat Smart New York (ESNY). The goal of these programs is to educate participants, using a skill-building approach that improves nutrition behaviors (dietary quality, food safety, and food resource management) and, to a lesser extent, physical activity behaviors. Both programs are currently expanding the focus on childhood obesity prevention. EFNEP will begin demonstration projects in a few counties during the next year to identify effective methods to impact the

environment and personal behaviors necessary to achieve and maintain a healthy weight. The goal is to impact behaviors of adults who influence children. Cornell NutritionWorks online course, “Preventing Childhood Overweight at Home, at School, and in the Community,” will be the training to prepare CCE staff to carry out this initiative.

NYS EFNEP is funded by USDA through the Cooperative State Research, Education, and Extension Service, receiving about \$3 million per year. EFNEP has served NYS for 35 years and currently provides nutrition education to low-income families with children and to low-income youth in 35 counties in NYS and in four boroughs of New York City. Participants have incomes at or below 185% of the federal poverty line. Over 7000 families and 14,000 youth are reached each year through EFNEP. ESNY is funded by the Food and Nutrition Service of USDA, receiving about \$10 million in federal dollars annually, which must be matched with an equal number of county and state dollars. ESNY has been in NYS for 10 years and currently provides nutrition education to food stamp recipients in 54 counties and New York City. Over 11,000 adults and 28,000 youth reached through ESNY. EFNEP and ESNY partner with a variety of agencies at the county and state level; examples include the state and county health departments, particularly WIC; the NYS Department

of Agriculture and Markets; the NYS Office of Temporary and Disability Assistance and local Department of Social Service offices; public schools; child care programs (after school, day care, and summer camp); Head Start programs; food pantries; and various occupational training programs.

Low-fat Milk Promotion

Recent evidence indicates that low-fat dairy products and calcium play a role in preventing overweight and chronic diseases such as hypertension and diabetes. Unfortunately, intake of dairy products has declined over the past 20 years. Eat Well Play Hard (EWPH) demonstration projects in three communities have been successful in working with day care providers and schools to promote low-fat and fat free milk: Dutchess County EWPH worked with the City of Poughkeepsie School District which began purchasing 1% or fat free milk and discontinued the sale and purchase of whole or 2% milk in all 8 of their schools. In addition, two schools purchased milk machines to replace soda and other non-nutritious beverages. These policies affected 11,500 students.

Erie County conducted a Low Fat Milk Campaign and tracked the purchase inventory of milk over time. Of the 14 schools in the project area, four switched completely to 1% or fat free, affecting over 9000 students. Additionally through these efforts, the Summer Food Program selected 1% or fat free milk as the milk provided for the 220,000 meals served.

Jefferson County efforts resulted in the Fort Drum Military Base switching to low fat dairy products at the day care centers serving 900 children daily, and the replacement of whole or 2% milk with 1% and fat free milk for the 18,000 meals served during the Summer Food and Nutrition program.

Public/private partnerships to promote healthy eating

The Jefferson County Eat Well Play Hard demonstration project partnered with the Hannaford Market chain and the NYS Apple Grower's Association to implement an apple coupon redemption system during the fall harvest. The project distributed over 6,000 coupons with total sales of apples increasing by 11,000 pounds over the same time period for the previous year.

The Dutchess County Eat Well Play Hard demonstration project partnered with a local McDonald's to modify the Happy Meal Menu. The "Happy Meal Plus" included 1% or fat free milk or a 5 oz. low fat yogurt in place of a soft drink and added a choice of salad or fruit cup. A physical activity toy, such as a beach ball or jump rope was also included. A total of 943 Plus meals were sold during the promotion. Over a two month period, the number of Plus meals sold was 67% above the average sales for the Happy Meal. Sales of low fat milk for the McDonald's store were up by 19% over the same period during the previous year. Children selected the fruit cup 38% of the time; salad was selected 29% of the time.

Changing the School Nutrition Environment

School food service staff, vendor representatives, the Student Nutrition Club, and other school staff from Cicero-North Syracuse High School worked to make the school nutrition environment one that promotes healthy eating. Some of the changes implemented included elimination of high fat snacks (only snacks with 8 grams of fat or less allowed), reducing high fat entrees, changing how foods are prepared, and selecting lower fat ingredients. The results were quite positive: lunch sales increased by at least 65 students per day and sales of the now healthier a la carte selections, increased as well.

Schenectady's Promise: The Alliance for Youth

A countywide initiative spearheaded by United Way of Schenectady, the County Youth Bureau and BOCES of the Capital Region, and Kevin Karpowicz, MD, MPH. The program serves two primary purposes: positive youth development and community collaboration in an organized fashion. Schenectady's Promise is affiliated with the national effort, America's Promise.

There are over 80 partners, both individuals and groups, that have signed a pledge to fulfill the five promises that serve as the organizing principle. The five promises are Health Start, Caring Adults, Safe Places, Marketable Skills and Opportunities to Serve. Each of

the five promises has a specific action team where the issue is explored at length. Local agencies, where youth are involved, pledge to become sites of promise where each of the five promises will be addressed. The information generated by the action teams is shared with the sites of promise.

Schenectady's Promise Pledges to include youth at every table. By empowering youth and including them as a valuable partner, Schenectady's Promise will work toward the positive youth development; where youth will be more likely to have a positive image of themselves and pursue more positive health promoting lifestyles.

Steps to a Healthier NY

The goal of the Steps to a Healthier NY (Steps) program is to help individuals live longer, better and healthier lives by reducing the burden of diabetes, asthma and obesity by addressing three related risk factors – physical activity, poor nutrition, and tobacco use. New York State's Departments of Education and Health are partnering with four counties to implement effective strategies to maximize community and school resources and address the critical health issues and related risk factors.

In September 2003, New York State received a five year grant from the CDC to address these issues; seventy-five percent of these federal funds are provided directly to the four counties of Broome, Chautauqua, Jefferson and Rockland with a combined population

of approximately 800,000 people. These counties were selected based on their need, demographics, and previous experience in developing and implementing effective community-based public health programs.

The goals of Steps are achieved through the building of partnerships (community consortiums) between public and private organizations working in areas of disease prevention and medical, social, educational, business, religious and civic organizations. Evidence-based community and school-based interventions have been tailored to each individual county's needs and resources. A number of Steps interventions related to obesity, nutrition, and physical activity exist in the areas of Policy, School-Based, Community-Based, Workplace, Health Care. The Obesity Prevention Program works with the Steps to a HealthierUS. Program including providing data and information for New York's four Steps counties and providing staff expertise in Steps counties. Together, the Obesity Prevention and Steps Programs sponsored social marketing training for stakeholders involved in both the Obesity intervention and the four Steps counties. The benefits of this included economy of scale in purchasing services and importantly, brought together staff of both programs and intervention sites to share information, network and create new partnerships to prevent diabetes in New York State.

The Broome County Healthy Heart Program

The Broome County Healthy Heart Program implemented an 8-week community-based campaign to increase walking among 40-65 year olds called “BC Walks.” The campaign included paid media (TV, radio and print), as well as unpaid media coverage, a speakers’ bureau, and numerous community events. A pre and post survey of a random sample of the target audience found that 47% of Broome County respondents had increased their total weekly walking time compared to 35% in the comparison community, and 41% of Broome County respondents increased their weekly walking by at least 30 minutes compared with 30% in the comparison community.

Center for Obesity Research and Education- C.O.R.E

An initiative of SUNY Cortland whose purpose is to serve as a research and educational resource for endeavors on obesity and physical activity to reduce the burden of obesity in children and adults through research, education, and service. The centerpiece of CORE is the creation and maintenance of a statewide database regarding current and on-going physical demographics of children in grades K-6 within each of the 62 New York State Counties. The immediate outcome of this data collection will be an account of overweight status of our children in NYS.

Spearheaded by Philip J. Buckenmeyer, and Jeff Bauer, Ph.D. the CORE initiative became operational as of January 2005. The strength of CORE is its multidisciplinary composition that includes 14 faculty from various departments across campus. These departments support up to 1,400 student teachers across the state, which provide an immediate contact to several NYS regions.

State Department of Transportation Partnership

The Healthy Heart Program partnered with the State Department of Transportation to conduct over 15 Walkable Community workshops throughout the state. A 4-hour workshop brought together local decision makers, health and planning professionals, and concerned citizens to learn more about how they can make their communities more pedestrian friendly. In several of these communities, projects to improve pedestrian safety have been initiated as a direct result of these workshops.

Warren Washington County Healthy Heart Program

The Warren Washington County Healthy Heart Program has worked with local transportation partners to improve the Warren County Bikeway and the Feeder Canal Trail and to promote the use of the trails by hosting numerous trail-oriented events. Over the two-year period of their work, trail use doubled. The majority of users were on bicycles, but the number of walkers tripled.

Greenmarket 5-A-Day Partnership

Data reported in the 2002 NYC Community Health Survey showed that only 9.5% of NYC residents consumed five or more servings of fruits and vegetables on a given day. In some areas, the figure was as low as 4.7%. Programs that address barriers, such as availability and cost of produce in larger cities, are clearly needed. To address the issue, the Wellness at Work program developed a partnership with Greenmarket, an organization providing farmers' markets across the city. Program staff developed and distributed promotional kits to the farmers' markets, as well as to mobile fruit and vegetable vendors across the city. The kits contained an apron, produce bags, recipe cards and informational sheets, all branded with the 5-A-Day logo. Roughly 175 boxes were sent out throughout the 5 counties in NYC. In addition, staff canvassed the city and gave out an additional 200 boxes.

This initiative marked the first time the 5-A-Day message and program were promoted throughout NYC by the City Health Department. This program helped make initial efforts to develop a database of local fruit and vegetable vendors, which will facilitate future and continued outreach to these groups. Efforts to assess the effects on fruit and vegetable consumption of this simple promotion and collaboration are ongoing.

Individual Interventions for Physical Activity

Senior Exercise Self-Efficacy Pilot Program (SESEP): The SESEP was conducted in joint collaboration with the New York City Housing Authority (NYCHA), which provides health promotion and disease prevention services to underserved elderly adults in senior centers located at public housing projects. The project used short-term motivation-based interventions to encourage the elderly to adopt and maintain healthy behaviors. The project's aim was to affect individual behavior by helping older adults realize they were capable of performing exercises from which they could derive benefits. Self-efficacy was enhanced through education, observing role models, obtaining goals through systematic training sessions, receiving positive feedback in response to successful change, and positive reinterpretation of physical symptoms associated with the health behavior.

At 12 selected NYCHA senior centers, clear and easy-to-follow exercise instruction, as well as motivational training, was provided in the form of two classes per week for twelve-weeks. One class per week focused on resistance training, while the other focused on aerobic training. All classes included educational, flexibility and motivational training components, with special attention given to older adults' unique physical and psychological barriers to exercise. A trained lay instructor from

the seniors' community instructed the classes, providing a role model and a source of positive reinforcement. All classes incorporated individual goal setting into their curricula and prompted participants to exercise independently. Two hundred forty four subjects were recruited at baseline and 166 (100 cases and 66 controls) participated in the baseline interview and follow-up data collection. The average age of participants was 73. The majority of participants were female (79%), African American (72%), unmarried (86%), retired (89%), and high school educated (67%). The evaluation revealed that there was a statistically significant improvement in the treatment group's mental health ($F=6.0, p<.05$), as opposed to that of the comparison group. Additionally, there was a statistically significant improvement in the treatment group's total mobility ($F=7.0, p<.05$) versus that of the comparison group. Data collection was facilitated through a partnership with the Nursing Program at New York University. Graduate nursing students were trained on data collection procedures and assisted in interviewing participants and taking baseline measurements. Although the self-efficacy measurement between both the intervention and comparison groups were not statistically significant, the intervention group's outcome expectations were statistically significant ($F=10.4, p<.01$). By utilizing a place-based setting such as a senior center, the data suggested that behavioral

intervention increases healthy behaviors, particularly in this largely minority, female population. This study was limited because it did not monitor long-term behavioral changes. In addition, self-reporting of physical activity may not have been as reliable as other, more objective measures. Nonetheless, this study reveals the capacity for behavioral intervention to improve physical activity, improve nutrition, and general health.

Just Ask Us Restaurant Intervention

In 2002-2003, the Wellness at Work Program implemented a restaurant intervention with two major purposes: 1) to educate the public regarding healthy menu modifications in restaurants, and 2) to incorporate healthy nutrition messages into the curriculum of the Bureau of Food Safety and Community Sanitation. The Bureau of Food Safety and Community Sanitation, within the NYC DOHMH, is responsible for training and certifying all food handlers employed by NYC restaurants. The intervention, "Just Ask Us," aimed to provide restaurant patrons with the option to request basic healthy menu modifications such as sauce or dressing on the side, egg substitutes, and no salt added to their meals. The goal was to provide the consumer with ways to dine out and still maintain a healthy diet. The intervention consisted of two components. For food preparers, the intervention allowed for the incorporation of healthy nutrition

guidelines into the city-mandated food protection course required for food preparers. Over 400 food handlers complete this class during any given month. For restaurants, implementation trainings were given to staff and promotional materials (menu labels, server pins, window decals, posters, and comment cards) were distributed. The major proposed outcomes of this intervention were to evaluate whether the availability of healthy options influenced decisions to go to a particular restaurant, whether it increased the likelihood that patrons would ask for menu modifications, and if the servers assisted customers with menu modifications. Although evaluation of the program never occurred due to limited funding, several barriers that were encountered will prove useful for future attempts in implementing the program. For example, finding ways to market the restaurants to increase customer traffic and providing rewards to those vendors that successfully implement the program is essential for long-term participation. In conclusion, the program ensured a community level buy-in to disease prevention by linking mandated training to consumer choice.

The United Nations (UN) Challenge

A grant from the Robert Wood Johnson Foundation from July 1, 2001 - June 30, 2004 supported the creation and implementation of a two-year, comprehensive worksite

health promotion program at the UN headquarters in New York City. The United Nations Challenge intervention was based on aspects of the 2003 Commissioner's Challenge at the NYC DOHMH and included three main components: (1) Know your Numbers, (2) Healthy Eating Plan and (3) Move for Life and was the first to utilize the Wellness Resource Center, an online tailored workplace health promotion tool. Additionally, the intervention conducted workshops that dealt with financial management, stress management, nutrition, and physical activity. The Wellness Initiative at the UN follows a seven-step model developed by the Wellness Councils of America (WELCOA). This model incorporates best practices for implementing health promotion and disease prevention programs, and accommodates the unique characteristics at each worksite, including organizational health structure, employee health needs and interests, and institutional resources. The latter characteristics are especially important at the UN, one of the most diverse employers in New York City.

Provider Education Project: Promoting the Use of Body Mass Index to Assess Weight Status in Pediatric Patients

Body Mass Index (BMI)-for-age percentile is the screening tool of choice in the assessment of weight status (both underweight and overweight)

for children aged 2-20 years, as recommended by a number of national organizations, including the American Academy of Pediatrics, the Centers for Disease Control and Prevention and the Maternal and Child Health Bureau. Despite publication of guidelines and updated BMI-for-age growth charts, many health care providers have not implemented these current recommendations. A 2002 national survey of pediatricians revealed that only 12.5% of respondents routinely use BMI-for-age percentile with their pediatric patients. Based on the above recommendations, the New York State Department of Health Bureau of Child and Adolescent Health has developed a statewide educational mailing to promote the use of BMI for age percentile by NYS pediatric providers.

The project described here represents the pilot phase of this educational program. This pilot phase will be used to 1) describe the weight assessment methods most frequently employed by NYS providers, and 2) evaluate the impact and effectiveness of the educational mailing. Results from this evaluation project will be used to refine the educational materials prior to statewide distribution.

The NYC DOHMH Commissioner's Challenge

"The Commissioner's Challenge," an incentive-based, 3-month health promotion contest was introduced in May 2003 as a novel worksite

intervention by the Wellness at Work Program for New York City Department of Health and Mental Hygiene (NYC DOHMH) employees. The challenge was the first intervention to be offered both on the Internet and via paper to employees. It provided employees with the opportunity to learn more about their health by being in a team and accruing points in order to win the grand prize of a healthy breakfast with Commissioner Thomas R. Frieden, MD, MPH. The intervention components of the challenge were developed directly in response to the needs assessment (WWS) that was completed by NYC DOHMH employees in 2002. The challenge consisted of three major programs: "Know Your Numbers," a campaign to encourage employees to visit their health care provider and have their blood pressure, cholesterol/HDL, BMI, height and weight checked; the "Move for Life" program which addressed physical activity by granting points to participants for completing various forms of physical activity; and a nutrition program that provided employees with online access to Berkeley Nutrition Screeners, which measure fruit/vegetable and fat intake and provide individualized feedback about ways to improve eating habits. As a part of the challenge, the Wellness at Work team collected data about the number of participants in each of the components and their health data.

There was an overall average participation rate of 12.5% among employees. Of the 669 individuals who

participated in the Challenge, nearly half achieved or surpassed their fitness goals. 29% were at considerable risk due to high cholesterol levels. 25% were considered to be overweight (BMI 25.0-29.9), while 40% were obese (BMI greater than 30.0). The employee profile results revealed that many NYC DOHMH employees needed to lose weight and enhance their cardio-vascular fitness. This challenge will be repeated in March 2004 with the addition of a customized Healthy Eating Plan and employee smoking cessation program.

Healthy Heart Program

The Healthy Heart Program was a large worksite intervention project conducted aimed to prevent cardiovascular disease in high-risk, low wage-earning employees (average yearly income <\$30,000/year). The program was established with a pilot grant from the New York State Department of Health (NYS DOH) between 1996 and 1999, and focused on implementing environmental interventions that encouraged physical activity, nutrition, stress relief, and smoking cessation. This program was initiated at 11 worksites and used an environmental surveying tool, the Heart Check Assessment to assess changes in the pre- and post-intervention environment for physical activity, heart healthy nutrition, and tobacco use. The data collected revealed significant gains in the environment such as increased opportunities for physical activity, healthy eating, and tobacco free

environments, as well as administrative support to sustain these changes. Due to restrictions on the grant, environmental modifications were evaluated at the organizational level only, and no data was collected to assess individual level behavioral change.

In 1999 the NYC DOHMH received a 5-year worksite environmental health promotion grant from the NYS DOH in 1999. This grant expanded the worksite selection criteria to include not-for-profit and corporate worksites. One hundred seventeen sites (including 33 NYC DOHMH sites) were recruited; 107 sites (92%) were retained (defined as completing pre- and post-intervention surveys) throughout the length of the grant. Programming in the areas of physical activity and nutrition were tailored to each worksite depending on the needs and interests of the organization's employees. Worksites were required to create Wellness Teams composed of employees representing various sectors of the organization. These teams offered expertise in tailoring programming to their worksites and helped to promote a culture of wellness among the worksite's employees. The data on 100 of the worksites that assessed the effects of environmental change showed gains in all surveyed areas at follow-up. The most significant gains were in nutrition and physical activity, with a 2.7 and 2.3 fold increase, respectively. The grant did not allow provisions for the translation of individual behavioral changes.

NYC Department of Health and Mental Hygiene's Worksite Health Promotion Program

In Spring 2002, the Worksite Wellness Survey (WWS), an 11-page self-reported needs assessment tool designed to examine health risks, culture, environment and behavioral risk factors was administered within the NYC DOHMH. Its purpose was to facilitate the design of a comprehensive, evidence-based worksite health promotion program. The survey was administered to a random sample of 1,400 employees at the NYC DOHMH with a 49% response rate. The survey revealed that the average demographic represented at the NYCDOHMH was middle-aged (average age was 43.5 years old), female (73%) and ethnically and culturally diverse (34% African-American, 31% White (Non-Hispanic), 18% Hispanic, 10% other, 5% Asian, and 2% Native American). Of all respondents, 98% had achieved a high school level education or greater.

The results suggested that the majority of the NYC DOHMH employees have poor eating habits (82.7% consumed fewer than 4 servings of fruits and vegetables per day), are sedentary (73%) and overweight or obese (58%). Employees were largely uninformed about their basic health indices such as blood pressure and cholesterol levels. Interest in on-site health promotion was good with the majority of respondents desiring programming in the areas of physical activity (53%), health screenings

(48%), nutrition (47%), and weight control (47%).

The information gained from the WWS was instrumental in the development of programmatic initiatives that specifically targeted the unhealthy behaviors of the NYC DOHMH employees, and guided the development of the current strategic plan for the Wellness at Work Program. Initiatives developed for the NYC DOHMH have served as models that the Wellness at Work Program has extended to work sites citywide. These programs intervene on the behavioral level by educating employees about their health risks and behaviors, and offering programming to help them improve their eating habits and increase their physical activity. The various programs address environmental barriers to health and wellness through the introduction of food policies to increase the availability of healthy foods, targeted media campaigns regarding nutrition and physical activity, and the promotion of opportunities for increased physical activity on-site.

NYC Department of Health and Mental Hygiene's Wellness at Work Program

The Wellness at Work (WAW) Program is housed in the Bureau of Chronic Disease Prevention within the Division of Health Promotion and Disease Prevention of the NYC DOHMH and was officially established in the Fall of 2001. The WAW Program was established to implement a comprehensive citywide

health promotion initiative to provide technical assistance to businesses through information sharing, public education, networking, coalition building and policy formulation. The initial efforts were focused on worksites.

Preventing Excessive Weight Gain in Pregnancy:

An Approach to Promoting Healthy Body Weights in Childbearing Women
Christine M. Olson, Professor
Division of Nutritional Sciences,
Cornell University

Description of Program: The long term goal of this project is to decrease the amount of weight retained in the postpartum period by lower income, rural women who enter pregnancy with normal or high body mass indices (BMI). This goal was addressed by encouraging women to gain an amount of weight during pregnancy that is within the appropriate ranges recommended by the Institute of Medicine (IOM). The intervention was implemented in the hospital and clinic system of Bassett Healthcare serving eight counties in Upstate New York. Health care providers monitored women's gestational weight gain using adapted IOM gestational weight gain grids and drew their attention to the optimal range of gestational weight gain. Women were provided with a tool for self-monitoring of weight gain and encouraged to use it by health care providers. In addition, they received five action-promoting newsletters in the mail that include post

cards on which they set goals and had the opportunity to ask questions that were answered in the next newsletter.

Evaluation of the Program: Two hundred eight pregnant women entered the intervention cohort and 179 were included in the analytical sample.

These women were compared to 381 high and normal BMI women who participated in an observational study of postpartum weight retention in the same health care facility (historical control group). Overall, the intervention had no significant effect on the proportion of women who gained more weight in pregnancy than the IOM recommends (45 percent control group vs. 41 percent in the intervention group). However, among low income women, it had a significant effect on excessive gestational weight gain. Fifty-one percent of the low income control group women gained more than the recommended amount compared to 33 percent in the low income intervention group ($p < 0.01$). The impact of the intervention among low income women was present in both the normal and overweight groups. Women were followed until one year postpartum. In the low income sub-sample, overweight women in the intervention group were significantly less likely to retain 5 or more pounds than similar women in the control group ($p = 0.04$).

Partners: Bassett Healthcare in Cooperstown, NY and the Division of Nutritional Sciences, Cornell University.

Time Period: September 30, 1999 through August 31, 2003.

Amount and Source of Funding:

\$373,995 (direct costs), National Institutes of Health (Grant No. DK 57439)

Outcome: The intervention reduced excessive gestational weight gain and postpartum weight retention in low income women.

Publication: Olson CM, Strawderman MS, Reed RG. Efficacy of an intervention to prevent excessive gestational weight gain. *American Journal of Obstetrics and Gynecology* 191:530-536, 2004.

Jumping Rope After School to Get the Jump on Preventing Overweight and Obesity

Spear-headed by Connie Herzig, Cooperstown elementary school children have been jumping as part of the Red Hot Ropes for 13 years. An after school class of 3rd, 4th and 5th grade students, that challenges more than 1/2 of each class plus some 20 parent volunteers to learn at least 15 tricks - tricks that are fun, yet great exercise.

“Forced Learning”: Cooperstown is known for baseball, but it’s the jump rope that’s “huge” at the school. Besides being fun and great exercise, Coach Connie Herzig says it’s a real confidence builder. Children learn if they work hard, they can learn. Learning isn’t seeing, it’s doing it and practice.

Feeling Good Mileage Class

For 6 weeks in the spring, elementary children are challenged to walk, run, skip around a 1/4 mile track. Each lap is recorded by a paper punch on a

card that’s filled after accumulating 20 punches or 5 miles. For each 5 miles, children receive a colorful plastic foot to tie on to their sneaker laces. For those who complete 25 or 50 miles, they receive recognition and a plastic number for their sneakers at an award ceremony when everyone also received a certificate listing their mileage.

Be a Power Eater: The Good Food for Great Kids Program

Be a Power Eater: The Good Food for Great Kids Program is being launched in all Pre-K through 8th grade Buffalo public schools (approximately 31, 000 students). An enhanced fruit and vegetable display will be placed in school lunch lines for a six-week period (January 24-March 4, 2005) where students will receive incentives and rewards for selecting a fruit or vegetable. The program where the opportunity for rewards and prizes increases proportionately to the number of times a student selects an item. The program will focus on changing behavior in children to lessen health trends in poor nutrition and overweight/obesity. The project will evaluate which approaches have the greatest behavioral outcomes, by school and grade, and results will be available by the end of 2005.

The Be a Power Eater program also has a research component. Variations of the basic program will be tried at the 65 schools. The schools are divided into three groups (A, B, C):

- ◆ The “A” schools will be involved in the program that includes the main program + 4th grade nutrition curriculum* for two schools.
- ◆ The “B” schools will participate in the main program + a school competition where the top 3 schools who have consumed the most fruits and vegetables win a special award + 4th nutrition curriculum* for two schools.
- ◆ The “C” schools will participate in the main program + a “Promise Contract” where homeroom students will sign a poster in the classroom pledging to eat more healthfully + 4th grade nutrition curriculum* for two schools

* The curriculum will be completed prior to the program start.

According to Gretchen Fierle, the Project Coordinator, “the Healthy Heart Program’s funding has allowed us to leverage other funds.” Of the \$450,000 cost of this project, \$101,250 is from the Healthy Heart contract. More than 15 organizations and 12 funding agencies have developed this district-wide initiative. This intervention is the first of its kind in Western New York and no other urban community in the United States has undertaken a program of this magnitude, aligning existing community and media resources to address a community issue.

Special Supplemental Nutrition Program for Women, Infants and Children (WIC)

WIC monitors weight during pregnancy and throughout the postpartum period

(one year for breastfeeding women.)

Nutritional risk eligibility is determined based on federally- mandated nutritional risk criteria. Prenatal risks include pre-pregnancy overweight, and high maternal weight gain. Postpartum risks include breastfeeding less than 6 months postpartum with pre-pregnancy BMIs greater than or equal to 25, and breastfeeding more than 6 months postpartum with a post partum BMI greater than or equal to 25. The WIC BMI risk level has recently been lowered from 26.1 to 25. More women in the WIC program will now be identified as overweight, and therefore, more women will receive counseling or education.

PCAP/MOMS

Standards in the Prenatal Care Assistance Program (PCAP) and Medicaid Obstetric and Maternity Services (MOMS) programs call for routine assessment of weight and weight-gain during the prenatal period. Women whose weight gain exceeds or falls below the curve recommended by the Institute of Medicine are referred to a nutritionist or dietician for counseling. DOH nurses monitor compliance with these program requirements and provide technical assistance to providers who are not meeting them.

Infant Feeding in the Hospital

In 1984 the hospital code in NYS was amended to require all hospitals with newborn nurseries to provide breastfeeding education and support to

new mothers. In order to assure that staff throughout the state were versed in the basics of breastfeeding promotion and support, a series of training sessions was presented in each region of the state.

Breastfeeding Networks

In 1980 in order to address the extremely low rate of breastfeeding at hospital discharge the NYC Regional office of NYSDOH brought together a small group of health professionals and breastfeeding advocates. The success of the NYC group was the stimulus to start similar groups throughout the state. Today there are breastfeeding networks throughout the state that provide professional and consumer education, answer questions for mothers, and increase the positive visibility of breastfeeding in the community. Many of the breastfeeding networks are associated with the DOH-funded Comprehensive Prenatal/Perinatal Services Networks (see below).

Comprehensive Prenatal/ Perinatal Services Networks (CPPSNs)

The CPPSNs are community-based organizations funded by NYSDOH to develop community assets to address the issues of infant mortality and low birth weight in areas of the state with high rates of poor pregnancy outcomes. As part of their work these 14 organizations provide consumer and provider education. Several of the networks including two in NYC and four in

upstate are the primary sponsors of the breastfeeding networks described above.

Prenatal Care

The Prenatal Care Assistance Program and Medicaid Obstetric and Maternity Services (PCAP/MOMS) provide prenatal care to most of the low-income women in New York. The program standards for both call for education and counseling about breastfeeding during prenatal care. The NYSDOH provides oversight and technical assistance to PCAP clinics to promote adherence to these standards. In the 1990s, the department conducted workshops around the state providing training about breastfeeding promotion and support to PCAP nurses and other staff.

Community Health Workers (CHWs)

Community Health Workers (CHWs) provide individual outreach and support to childbearing families in high-risk regions of the state. The training that all new CHWs receive includes information about breastfeeding, and the program monitors breastfeeding rates among their clients.

Special Supplemental Nutrition Program for Women, Infants and Children (WIC):

The national WIC program initiated specific breastfeeding promotion and support activities in response to the decline in breastfeeding rates during the 1980s. Since 1989, the WIC program in New York State has incorporated breastfeeding promotion and support

as part of its policy to encourage breastfeeding as the optimal infant feeding method to ensure the health and well-being of infants.

In 1991, NYS WIC introduced its first Peer Counseling pilot program, and that program's success led to similar efforts around the state. In 1994, an enhanced breastfeeding food package for exclusively breastfeeding women was established. Today, every WIC agency has a breastfeeding coordinator on staff, as mandated by the WIC contract deliverable. NYS WIC policy mandates WIC local agency protocols addressing need criteria, training, procurement and distribution of breast pumps to breastfeeding mothers. WIC local agencies must have a breastfeeding-friendly environment and staff trained in breastfeeding promotion and support. Currently, a statewide incentive is under way to provide Certified Lactation Counselor (CLC) training for WIC local agency staff. On an on-going basis, posters, brochures, and other materials designed to promote and support breastfeeding among low-income women are distributed to all local agencies. Over the past decade, breastfeeding initiation rates have doubled.

Breastfeeding and Human Lactation Study Center

Dr. Ruth Lawrence, an internationally known expert on breastfeeding, and the New York State Department of Health have provided continuing educational opportunities for physicians, midwives,

nurse practitioners, and other health care providers about normal lactation and the management of breastfeeding in special circumstances. Best Practices Guidelines and policies for hospitals, managed care plans, ambulatory care facilities, workplaces, as childcare centers have been developed and distributed promoting and supporting breastfeeding. The guidelines are based on the consensus of ad hoc expert panels and in the case of the hospital guidelines, on the breastfeeding-promotion section of the New York State code of hospital regulations. The Center conducts research focused on breastfeeding behaviors and breastfeeding management.

Breastfeeding Grand Rounds

Physician education about normal lactation and about management of breastfeeding in special circumstances is a critical piece of breastfeeding promotion, since physicians influence families' breastfeeding decisions and experiences -- either positively or negatively. Since 1995, the NYSDOH has produced an annual series of free satellite broadcasts, Breastfeeding Grand Rounds, providing continuing education about breastfeeding for physicians, midwives, nurse practitioners, and other health care providers. The broadcasts have a national audience of roughly 1000 health care providers, primarily in New York State.

Best Practices Guidelines

Policies and practices in a wide variety of institutions -- hospitals, managed care plans, ambulatory care facilities, workplaces, and childcare centers - - determine whether the environment is supportive of breastfeeding. Over the past decade, the NYSDOH has developed best practice guideline sets for each of the settings listed above to encourage adoption of policies and practices that promote and support breastfeeding. The hospital guidelines are based on the breastfeeding-promotion section of the New York State code of hospital regulations, and the others are based on the consensus of ad hoc expert panels.

Surveillance and feedback to providers

The health department has surveyed hospitals five times since 1992 to assess the rate of breastfeeding initiation, and three times during that period to assess their compliance with the best practice guidelines (described above). Once the department conducted a survey of managed care plans to assess their policies and practices. Following each survey, the department sent feedback to providers about their performance and how it compared with others in their region and statewide.

In addition to conducting these periodic surveys, the department has incorporated assessment of breastfeeding practices into ongoing monitoring and quality improvement efforts with managed care organizations.

Lactation Information Network

To promote communication about educational programs, policy questions, and other issues among breastfeeding networks around the state, the NYSDOH developed an e-mail list-serve -- the Lactation Information Network (LIN-L). Any interested individual can participate in the list-serve, posting announcements or questions that all other list-serve participants will receive and can respond to.

Cardiovascular Health Program

The NYS Cardiovascular Health Program, also known as the Healthy Heart Program (HHP), helps prevent and reduce overweight in and obesity in NYS leading risk factors to cardiovascular diseases. The HHP works to change environments and policies that will prevent and reduce health disease and stroke in communities and worksites. Recently the OP program worked with the HHP program to leverage resources to implement CDC's Heart Healthy and Stroke-Free Worksites Toolkit ("Successful Business Strategies to Prevent Heart Disease and Stroke") through consultants, insurers and business leaders to help businesses employ health promotion and wellness programs and disease management services to reduce the effects of overweight and obesity and contain health care costs. An RFA is under development to provide seed money to ambulatory care providers to implement the chronic care model to improve

treatment of people with hypertension.

The NYS Healthy Heart Program has worked for years to affect policies and environments to promote and to increase physical activity and healthy eating in communities in NYS. Worksites Wellness contractors that create opportunities for workers to be active and eat well, such as: establishing policies for walking breaks and healthy items in worksite cafeterias and vending machines, creating walking clubs, sponsoring Move For Life and other incentive programs, and setting up wellness committees to oversee future efforts. Move for Life is a physical activity program that worksite business managers can use to implement an easy-to-follow plan for an eight-to-ten week program that will increase the physical activity level of employees of all physical abilities, regardless of age, or current fitness or activity level. BC Walks was a community-based campaign to increase walking among older adults in Broome County, New York. It included a paid media component and significant increase in walking rates. Move for Life is a physical activity program that worksite business managers can use to implement an easy-to-follow plan for an eight-to-ten week program that will increase the physical activity level of employees of all physical abilities, regardless of age, or current fitness or activity level. Walkable Communities Workshops are training sessions for lay and professional community residents to provide them with ways to make it safer, easier and more pleasant for people to walk.

Diabetes Prevention and Control Program

Coordination with the New York State Health Department's Diabetes Prevention and Control Program has occurred through a number of venues including working together in developing this Plan and the Diabetes Plan for NYS. Program staff participates in planning and implementation work with the Steps to a HealthierUS Program including providing data and information for NYS's four Steps counties and providing staff expertise in Steps counties. Together, the OP and Steps Programs sponsored social marketing training for program staff and for people involved in both the OP intervention and the four Steps counties. The benefits of this included economy of scale in purchasing services and importantly, brought together staff of both programs and intervention sites to share information, network and create new partnerships to prevent diabetes in NYS.

Comprehensive Cancer Program

The Comprehensive Cancer Program is an active participant in the OP Plan development and implementation processes. The Obesity Prevention and Comprehensive Cancer Programs are investigating ways to best monitor and track plan implementation work electronically or through web-based approaches. Monitoring and tracking plan activities are critical to assessing progress, communicating results, sustaining and attracting continued resources and measuring success.

Arthritis and Disability and Health Program Address Overweight and Obesity Prevention

A significant program component of Arthritis and Disability and Health Programs is providing resources to community-based organizations to support peer-led training programs for people with arthritis and related conditions and people with disabilities. Training outcomes of such programs as Arthritis Self-Help Course (ASHC) and Living Well with a Disability include providing ways for participants to eat nutritiously and make exercise a regular part of their lives to decrease pain, reduce reliance on medications and overall improve quality of life. Although resources are limited, still these programs provide important links to typically underserved populations that are effected by overweight and obesity. Both programs are engaged in the OP plan development and implementation processes. The Arthritis Foundation (AF) sponsors many ASHC, PACE (People with Arthritis Can Exercise) and arthritis programs in New York State. The New York City AF Chapter currently works with managed care organizations offering these courses to participants to improve their physical fitness and reduce their reliance on medications.

TV Turnoff Week

Some communities and schools in New York participate in a TV Turnoff Week once a year to encourage families to turn

off their televisions and participate in more recreational and physical activities for a week. This event has been shown to change the viewing habits of those who participated not only for seven days, but for much longer, sometimes even permanently, afterwards.

Reducing TV Viewing by Preschoolers

As part of the Department's Obesity Prevention Program, a public health evaluation is being conducted in the Arbor Hill community area in Albany, New York. Known as the Health and Fitness by Age 5 Intervention, this community-based intervention targets preschool children, their parents and childcare teachers and related caregivers to prevent overweight among preschool children. One of the main goals of the intervention is to reduce TV-viewing time at daycare centers and at home through implementation of the "Fit 5 Kids" curriculum in Centers. Using social marketing techniques, this intervention will also facilitate a community-wide "TV Turnoff Week".

The Obesity Prevention Program worked with the NYS Education Department to provide NYS schools with web-based resources they can use to promote physical activity and healthy eating and to help them to respond to recent federal and state legislation that requires all school districts to create nutrition councils to promote healthy eating among students and staff. In concert with the Governor's Office,

the Health Department is providing incentive and mini-grants to schools that have completed the School Health Index and a plan of action. These schools are eligible for a base grant and a mini-grant to help them to respond to one or more parts of their action plan that will lead to policy changes to support physical activity and healthy eating.

The NYS Cardiovascular Health Program (HHP), also known as the Healthy Heart Program, has worked to change environments and policies that will prevent and reduce health disease and stroke and its attendant morbidity and mortality. The program works in communities, schools, worksites and health care settings. Currently, the HHP funds 17 community-based provider organizations statewide that work to affect policies and environments to increase access to walking, running and bicycling and increase access to fresh fruits and vegetables and low-fat dairy products.

The Healthy Heart Program expanded the number of community-based providers that work in the school and worksite sectors. Providers work with schools and worksites to develop comprehensive policy approaches to improve cardiovascular health of populations in these settings such as making facilities accessible to children to increase physical activity, increasing healthful foods on school campus as measured by the School Health Index, promoting active lifestyles at worksites.

Schools + Professionals in Nutrition (SPIN)

Schools + Professionals in Nutrition (SPIN) Program, an outgrowth of the New York State Action for Healthy Kids Team, pairs school professionals with a volunteer nutritional professional who work together to improve nutrition among students in part through helping schools to complete the School Health Index (SHI) and an Action Plan. Matched schools and nutrition professionals have access to resources, support and technical assistance as needed to foster productive partnerships.

Statewide Policy Changes Supporting Obesity Prevention in Women, Infants and Children (WIC) Program

The WIC Program, which provides supplemental foods and nutrition education for over 450,000 low-income women, infants and children, supports the Eat Well Play Hard (EWPH) program objectives through changes to state policies and resources provided to WIC local agency staff and participants. For example, EWPH strategies were incorporated into the new automated WIC system. WIC food packages in the new system select 1% or less milk as the “default” food package for women and children over the age of two years. The WIC program has established a goal of low-fat/fat-free milk check issuance rate of 40% or greater for participants over the age of 2. In April 2004, 35% of the participants over age 2 received WIC checks specifying low-fat or fat-free milk.

Existing Surveillance Systems

The Obesity Prevention Program is working with well-established surveillance systems across multiple program areas to describe the burden of obesity in New York State. Using information from existing surveillance systems including the BRFSS, YRBS, PedNSS, PRAMS, and periodic surveys of elementary school children, new mothers, and hospitals this data will be a resource showing current prevalence trends in overweight and obesity among preschoolers, school-age children, adolescents and adults in the state. It will also present important information regarding risk and protective factors associated with obesity including physical activity, nutrition and breastfeeding practices. Also described will be rates of chronic conditions related to obesity, and the economic impact of obesity in New York State.

Enhancing Local Surveillance Systems

The Obesity Prevention Program is enhancing its local-level surveillance resource capacity by utilizing information from two existing surveillance activities and integration with other program areas. Expanded BRFSS is a statewide surveillance effort modeled after the annual statewide BRFSS to collect and report behavioral information of relevance to obesity prevention at the local level. In partnership with other programs,

expanded BRFSS is now being used to better understand the extent and distribution of local-level obesity and overweight, nutrition, physical activity, and related chronic conditions. In addition, annual BRFSS surveys are being conducted in Broome, Chautauqua, Jefferson, and Rockland counties – the four intervention areas for Steps to a Healthier NY. These surveys will be used to monitor a number of issues of importance to obesity prevention including the prevalence of obesity and overweight, nutrition, physical activity, and related chronic conditions. In 2005, as a component of Steps to a Healthier NY these four counties will also begin biennial implementation of a local YRBS to report related information for youth.

Oral Health, Nutrition, and Physical Activity Survey

Building on the strength of previous success in conducting a series of surveys of school children in New York State, the Obesity Prevention Program is co-sponsoring the Oral Health, Nutrition, and Physical Activity Survey of 3rd grade children. This representative survey conducted in areas of the state outside of New York City is following the model of previous similar collaborations conducted in 1988, 1990, and 1996 to report the prevalence of overweight, at-risk for overweight and related information among school-age children.

Surveillance of Breastfeeding Interventions

The Obesity Prevention Program is also enhancing its perinatal surveillance capacity to fill information gaps related to breastfeeding interventions to reduce obesity risk. Data about breastfeeding are collected in several ways. New York State's new Statewide Perinatal Data System collects data on breastfeeding initiation and exclusivity for all infants born in New York, excluding New York City births. Aggregate data on breastfeeding initiation have been collected for over ten years through periodic hospital surveys and through the CDC-sponsored Pregnancy Risk Assessment Monitoring System, which collects data from a sample of new mothers. In addition to breastfeeding initiation rates, PRAMS questions address continuation through the first few months postpartum, and reasons for discontinuing breastfeeding. The National Immunization Survey has recently added questions about breastfeeding initiation and duration, with data available on the state level.

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E. Appendix III: Logic Model

Principles

VISION
All New Yorkers will achieve and maintain a healthy weight

MISSION
To decrease the prevalence of overweight and obesity and reduce the burden of obesity related diseases by improving healthy eating and increasing physical activity.

- Build on existing activities, programs and linkages
- Work as a collaborative, multi-disciplinary partnership
- Use evidence- and theory-based strategies

Inputs

Overweight and Obesity Prevention Planning Partnership

- NYSDOH**
- Staff
 - Leadership
 - Expertise
 - Administrative resources
 - Existing initiatives:
 - Healthy Heart
 - Eat Well Play Hard
 - Steps to a Healthier NY
 - Oral Health
 - Other internal partners

- CDC**
- Major funding
 - Research base
 - Guidance
 - Technical assistance



- External Partners**
- Other state agencies
 - Professional organizations
 - Advocacy groups
 - Community leaders
 - Researchers
 - Business and industry
 - Media

- Community Forums**
- School/Child Care Settings Workgroup
 - Healthcare/Worksite Settings Workgroup

STANDALONE EVENTS

Target Sectors/Settings

- Schools
- Worksites
- Child Care and Early Education Settings
- Health Care Providers
- Communities
- State, Local and Community Policymakers
- Mass Media
- Parks and Recreational Settings

Outputs

Strategies

- Engage and mobilize partners
- Promote guidelines and best practices
- Provide training, tools and technical assistance to support implementation
- Develop and implement media campaigns
- Educate providers, leaders and other decision-makers
- Employ social marketing techniques
- Identify and leverage resources
- Provide positions on policy
- Carry out and evaluate demonstration projects
- Develop, maintain and utilize surveillance

Outcomes

Proximal Determinants

- Environmental Factors**
- Provider practices
 - Social norms
 - Access to goods, services and settings supporting healthy behavior
 - Organizational policies
 - Laws and regulations
 - Economic incentives/disincentives
- Personal Determinants**
- Awareness
 - Knowledge
 - Attitudes
 - Beliefs
 - Expectations
 - Skills
 - Self-efficacy

Behavioral Change

- Increase physical activity
- Decrease television viewing
- Improve nutrition:
 - ↑ Vegetables
 - ↑ Fruits
 - ↑ Low Fat Dairy
 - ↓ Sweetened beverage
 - ↓ Fat/Caloric Density
 - ↓ Portion Size
- Increase breastfeeding:
 - Initiation
 - Exclusivity
 - Duration

Long Term Impacts

- Increase energy expenditure
- Decrease caloric intake