



Eat Smart, Move More: North Carolina's Plan to Prevent Overweight, Obesity and Related Chronic Diseases

2007–2012

The Overweight and Obesity Epidemic... Years in the Making	2
Economics of Overweight and Obesity ...	3
Socioecological Approach to Reverse the Rising Tide	4
Building on What Has Already Been Done	5
The Goals and SMART Objectives	6
The Strategies	8
Key Resources	11
Glossary	14
References	16
Acknowledgements	17



Eat Smart, Move More: North Carolina's State Plan to Prevent Overweight, Obesity and Related Chronic Diseases was written by a committee of the Eat Smart, Move More...North Carolina Leadership Team. The Leadership Team is made up of professionals from across the state with the common goal of obesity prevention.

Eat Smart, Move More: North Carolina's State Plan to Prevent Overweight, Obesity and Related Chronic Diseases is for anyone working in the area of overweight and obesity prevention. It is designed to help organizations and individuals craft strategies to address overweight and obesity in their community and begin to create policies and environments supportive of healthy eating and physical activity.

Together we can create a North Carolina where adults and children of all ages and abilities eat smart and move more wherever they live, learn, work, play and pray. It will take all of us working toward the common good to achieve a healthier, more productive North Carolina.

For more information, visit www.EatSmartMoveMoreNC.com.

The Overweight and Obesity Epidemic...

Years in the Making

More than half of American adults are overweight or obese. Additionally, 30 percent of children ages 6-19 are overweight or at risk for overweight.¹ In some parts of our state, the number of children who are overweight is even higher. From 1999-2004, the prevalence of overweight among children and adolescents and obesity among men increased significantly.¹

The question is often asked, "How has this happened?" The answer is simple. We are consuming more calories than we burn.

*But WHY is this happening?
The answer to that question is more complex.*





To meaningfully address the overweight crisis, we must look at our environment and our policies to understand why it is so easy for any American, regardless of age,

race, gender or socioeconomic status, to be overweight. What has happened to our society and our culture over the past 20, 30, 40, even 50 years? How has our environment contributed to adults and children having an unhealthy weight?¹

There are many factors in our American culture that make it possible for so many people to be overweight. Let's look at a few of these.

The number of fast-food outlets has dramatically increased over the past two decades. Every day, one in four Americans eats a fast-food meal,² which is not surprising since the number of fast-food establishments in the country has increased from 70,000 in 1970 to almost 200,000 today.³

Not only are we choosing fast food more often, but the amount we consume has also dramatically increased. The normal fast-food meal of 20 years ago is the kid's meal of today. Fries, hamburgers and drinks have all gotten larger and larger. Not only are we consuming more fast food than ever before, but we are eating more meals away from home in general. Eating away from home often means meals that are high in calories and fat.⁴ In schools, high-fat,

high-sugar foods are sold to children in competition with the healthy school lunch.

Americans' consumption of sugar-sweetened beverages continues to rise. What was in years past an occasional treat served in small quantities is now an everyday, with-every-meal norm, often with free refills. There are enough soft drinks produced in the U.S. to supply every citizen with 14 ounces of soda per day.⁵



Physical activity patterns of Americans have also changed. In an attempt to make our lives easier, we have removed many of the daily opportunities to move our bodies. In 1980, there were just over 161 million vehicles on the road in the U.S. Today there are well over 225 million.⁶ We build our neighborhoods and communities so that walking and biking are not safe alternatives to riding in a car. Physical activity for all ages has decreased, especially among our youngest residents. Children's bikes are often motorized and require little or no effort to ride. Physical activity opportunities during the school day have decreased or have been eliminated.

No one could have predicted the impact that television would have on our society. Today, virtually all U.S. households have at least one TV with nearly 80 percent having multiple sets.⁷ Additionally, the viewing options for TV have increased from three network channels to endless options of cable, pay per view, video and DVD. The 1980s marked a time in history when, for the first time, people of all segments of society used television as their number one leisure time activity. Americans now spend an average of four hours each day, inactive, sitting in front of the television.⁸ That means hours of inactivity and hours of exposure to advertising of high-fat, high-calorie foods. Many of these ads are aimed directly at children.

Empowering individuals, families and communities with knowledge and skills to change their eating and physical activity patterns is imperative. However, knowledge is only the beginning. People must live in environments that support healthy eating and physical activity. It will take all of us working together in schools, worksites, faith communities, health care and other community organizations, to create and support environments that make healthy eating and physical activity possible for all North Carolinians.

Economics of Overweight and Obesity

By helping more communities eat smart and move more, the enormous economic burden of obesity related disease can be relieved. Financial costs for obesity are estimated at more than \$24.1 billion annually in medical care and lost productivity in N.C. That means that every day, every man, woman and child across the state pays \$6.80 to cover the bill.⁹



Socioecological Approach to Reverse the Rising Tide

Many factors affect individuals' decisions and abilities to practice positive behaviors with respect to healthy eating and physical activity. These factors include the physical and social environments of families, communities and organizations; the policies, practices and norms within their social and work settings; and their access to reliable information.

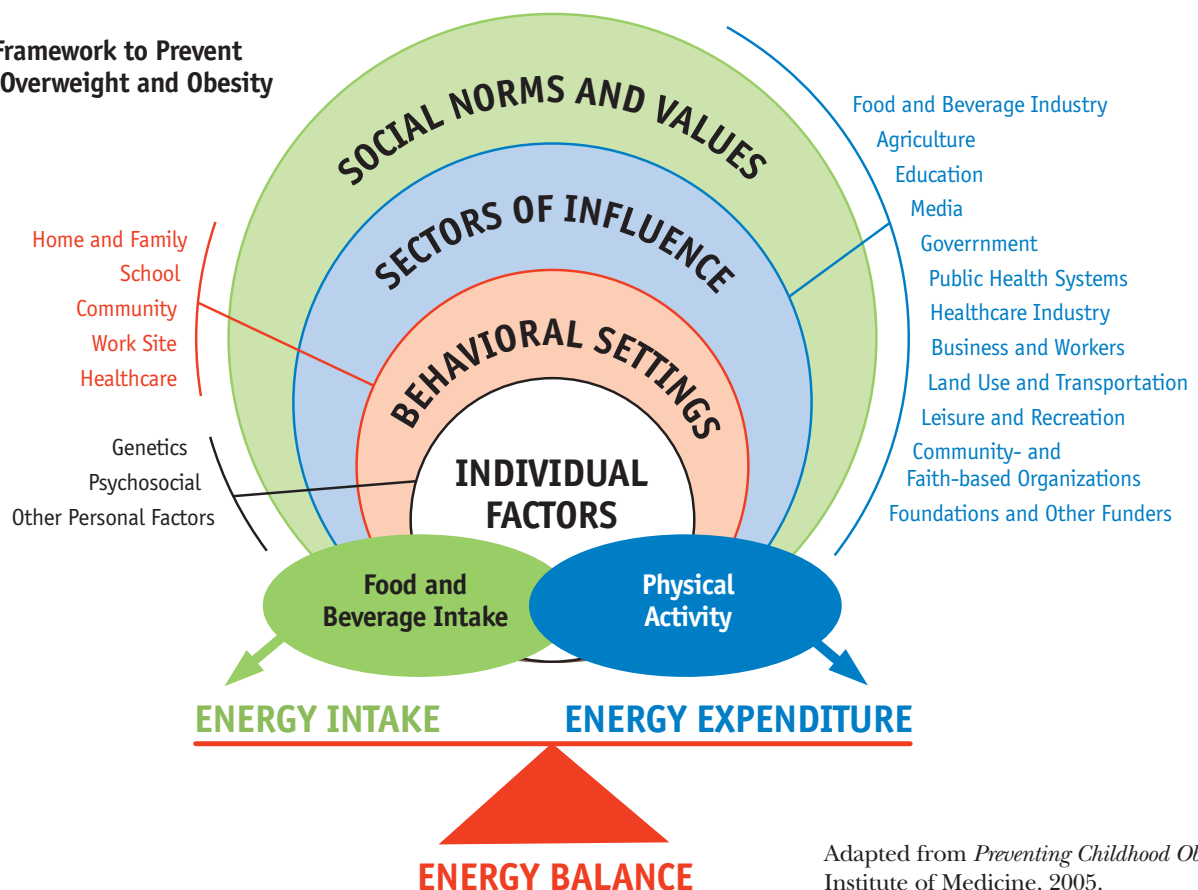
The multi-level model, also called the socioecological model (Figure 1), provides a framework that includes multiple factors that influence an individual's ability to change. Lasting changes in health behaviors require physical environments and social systems that support positive lifestyle habits.¹⁰

In order to reverse the rising tide of overweight and obesity, changes need to be made in the surrounding organizational, community, social and

physical environments. Without these changes, successful health behavior change is difficult to achieve and sustain. Confidence in adopting and maintaining a behavior may be strengthened when the physical and social environment supports the new behavior.

Policy and environmental interventions can improve the health of all people, not just small groups of motivated or high-risk individuals. They can impact a broad audience and produce long-term changes in health behaviors. These interventions are supported by enhanced public awareness of the need for healthy eating and increased physical activity opportunities and their influence on health. By collectively focusing on policy and environmental changes, individuals can reduce or eliminate barriers to healthy eating and physical activity.

Figure 1. A Framework to Prevent and Control Overweight and Obesity



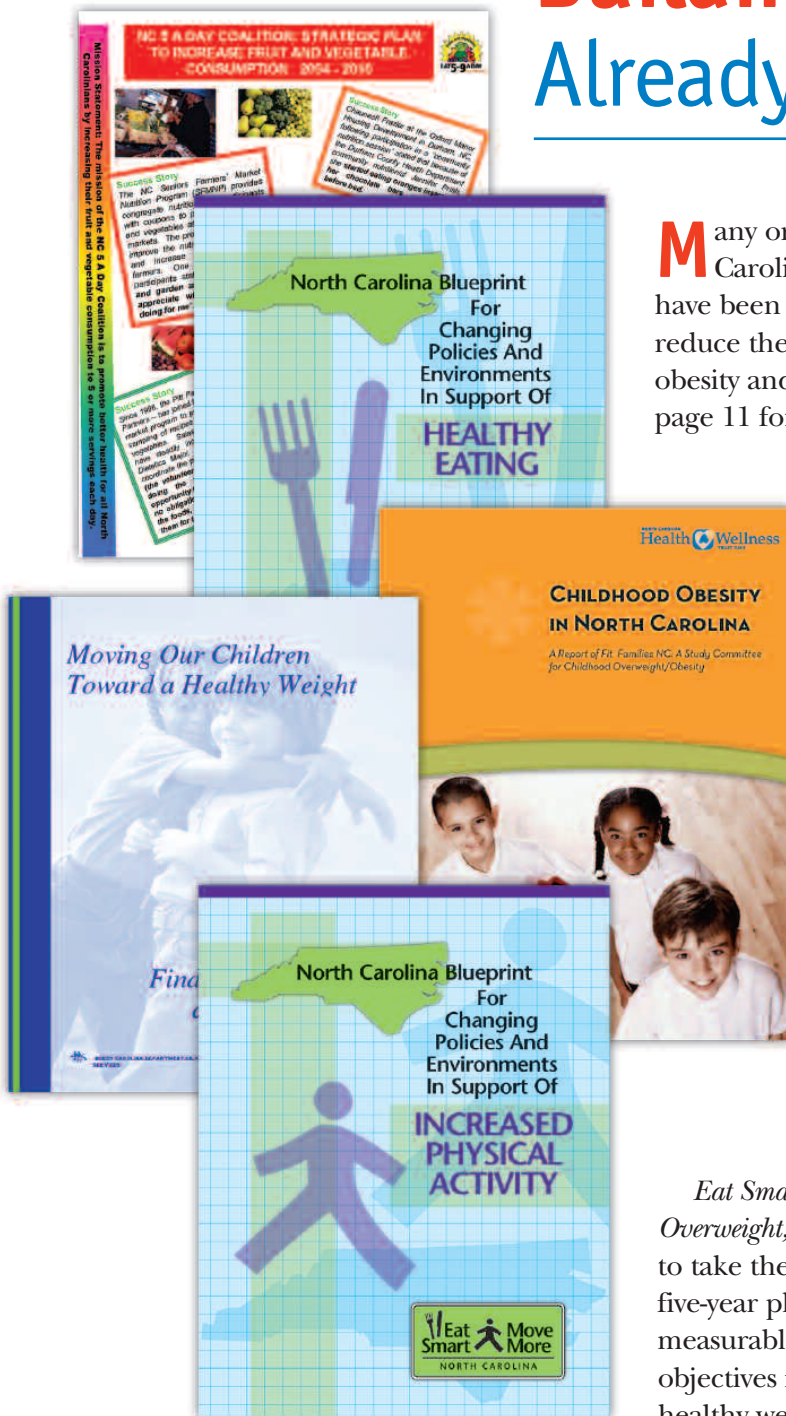
Adapted from *Preventing Childhood Obesity*, Institute of Medicine, 2005.

Building on What Has Already Been Done

Many organizations have developed plans to help North Carolinians eat smart and move more. These plans have been widely adopted and used to stimulate action and reduce the social and economic impact of overweight, obesity and other chronic diseases. (See Key Resources on page 11 for more information on each plan.)

- *Moving Our Children Toward a Healthy Weight—Finding the Will and the Way*
- *North Carolina Blueprint for Changing Policies and Environments in Support of Healthy Eating*
- *North Carolina Blueprint for Changing Policies and Environments in Support of Increased Physical Activity*
- *North Carolina 5 A Day Coalition: Strategic Plan to Increase Fruit and Vegetable Consumption 2004-2010*
- *Childhood Obesity in North Carolina: A Report of Fit Families NC: A Study Committee for Childhood Overweight/Obesity*
- *Promoting, Protecting and Supporting Breastfeeding: A North Carolina Blueprint for Action*

Eat Smart, Move More: North Carolina's Plan to Prevent Overweight, Obesity and Related Chronic Diseases is not intended to take the place of the aforementioned plans. This plan is a five-year plan that provides our state with specific, measurable, attainable, realistic and time-framed goals and objectives for helping all North Carolinians achieve a healthy weight.



The Goals and SMART Objectives

A SMART Objective is

Specific
Measurable
Attainable
Relevant and
Time-oriented

North Carolina's *Plan to Prevent Overweight, Obesity and Related Chronic Diseases*

is a call to action
to make healthy eating
and physical activity the
norm rather than the

exception. It provides a framework for the future,
outlining the goals, objectives and strategies to create
and sustain a North Carolina where eating smart and
moving more are a way of life that leads residents to a
healthy weight.

To move forward from words on a page to
community change, it will take all of us—individuals,
organizations and public and private partners,
working toward the common good to achieve a

healthier, more productive North Carolina. If you can
imagine a North Carolina where adults and children
of all ages and abilities eat smart and move more
wherever they live, learn, work, play and pray, heed
this call to action.

THE GOALS

1. Increase healthy eating and physical activity opportunities for all North Carolinians by fostering supportive policies and environments.
2. Increase the percentage of North Carolinians who are at a healthy weight.
3. Increase the percentage of North Carolinians who consume a healthy diet.
4. Increase the percentage of North Carolina adults and children ages 2 and up who participate in the recommended amounts of physical activity.

GOAL #1: Increase healthy eating and physical activity opportunities for all North Carolinians by fostering supportive policies and environments.

Objective A: By December 31, 2012, increase yearly the number of policies, practices and incentives to promote healthy eating and physical activity wherever North Carolinians live, learn, work, play and pray.

Objective B: By December 31, 2012, increase yearly the number of facilities/environments to promote healthy eating and physical activity where North Carolinians live, learn, work, play and pray.

Baseline—State level data gathering mechanisms are capturing new and/or enhanced policies and environmental changes. These mechanisms include indicators that capture a variety of policy and environmental changes in multiple settings.

GOAL #2: Increase the percentage of North Carolinians who are at a healthy weight.

Objective: By December 31, 2012, there will be no increase in the percentage of North Carolina adults, youth and children who are classified as overweight or obese.

Baseline—BRFSS, 2000: 35.9 percent of adults were overweight, and 21.8 percent were obese. YRBS, 2001: 16.2 percent of middle school students were at risk for overweight, and 13.2 percent were overweight; 14.3 percent of high school students were at risk for overweight, and 12.9 percent were overweight. NC-NPASS, 2001: 14.4 percent of public health department clients between ages 2-18 were at risk for overweight, and 14.4 percent were overweight. (Note: in previous years the percentage at risk exceeded the percentage overweight; in 2001 they are the same; in 2005 the percentage overweight exceeds the percentage at risk.)*

GOAL #3: Increase the percentage of North Carolinians who consume a healthy diet.

Objective A: By December 31, 2012, 14 percent more North Carolina adults, youth and children will consume five or more servings of fruits and vegetables each day.

Baseline—BRFSS, 2001: 22.1 percent of N.C. adults consumed at least five or more servings of fruits and vegetables. YRBS, 2001: 17.8 percent of high school students consumed five or more servings of fruits and vegetables per day during the past seven days. BRFSS, 2005: 22.5 percent of adults consumed at least five or more servings of fruits and vegetables per day. YRBS, 2005: 26 percent of high school students ate fruit three or more times, and 28 percent ate vegetables three or more times on a typical day. YRBS, 2005: 40 percent of middle school students ate fruit three or more times, and 33.5 percent ate vegetables three or more times on a typical day. CHAMP, 2005: 25.6 percent of children ate three or more servings of fruit, and 25.8 percent ate three or more servings of vegetables each day.*

Objective B: By December 31, 2012, the proportion of North Carolina infants who are breastfed will increase to 75 percent and the proportion of infants who are breastfed for at least six months will increase to 50 percent.

Baseline—PedNSS, 2001: 50.4 percent of infants and children under five were breastfed. PedNSS, 2001: 16.6 percent of infants and children under five were breastfed for at least six months. PedNSS 2004: 53 percent of infants and children under five were breastfed. PedNSS, 2004: 18.7 percent of infants and children under five were breastfed for at least six months. CHAMP, 2005: 65.7 percent had breastfeeding initiated, and 25.4 percent were breastfed for at least six months.*

Objective C: By December 31, 2012, when eating out, more North Carolina adults and children will choose foods and beverages generally considered to be healthier. Healthier will be defined by: lower in fat, sugar, calories; fast-food meals once per week or less often and labeled as healthy.

Baseline—BRFSS 2006 data will be available in early 2007 for baseline on the percentage of NC adults who report choosing foods or beverages labeled as healthy. BRFSS 2008 data will be available indicating the percentage of adults who choose foods and beverages that are labeled as healthy. PAN Behaviors 2005: Insufficient numbers of adults to provide reliable data.

Objective D: By December 31, 2012, 25 percent fewer North Carolina children ages 2-17 will eat fast food three or more times per week.

Baseline—CHAMP 2005: 12.3 percent of children ages 2-17 ate fast food at least three times per week.

Objective E: By December 31, 2012, at least 70 percent of North Carolinians will prepare and eat their main meal at home at least five times per week.

Baseline—YRBS, 2005: 78.2 percent of middle schools students ate dinner at home with their families four or more times during the past seven days. YRBS, 2005: 62.5 percent of high school students ate dinner at home with their families four or more times during the past seven days. CHAMP, 2005: 66.9 percent of children ages 2-17 ate dinner together with family at home more than four times per week. No "meals at home" measure for adults is available at this time.

Objective F: By December 31, 2012, the percentage of North Carolina adults, youth and children who typically consume more than one 12-ounce serving of sugar-sweetened beverages per day will not exceed 50 percent.

Baseline—YRBS, 2005: 95.6 percent of middle school students report drinking a soft drink or sweetened beverage one or more times on a typical day. YRBS, 2005: 90.9 percent of high school students report drinking a soft drink or sweetened beverage one or more times on a typical day. CHAMP, 2005: 19.9 percent of parents report their children drink sweetened beverages three or more times on a typical day.



GOAL #4: Increase the percentage of North Carolina adults, youth and children ages 2 and up who participate in the recommended amounts of physical activity.

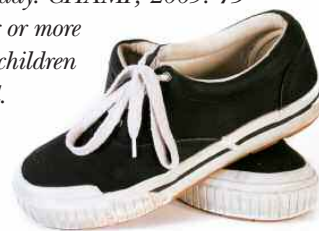
Objective A: By December 31, 2012, at least 46 percent of adults will get recommended amounts of physical activity each week and fewer than 15 percent will report no leisure time physical activity.

Baseline—BRFSS, 2001: 42.4 percent of adults in N.C. had recommended amounts of physical activity; 30.4 percent had no leisure time physical activity.*

Objective B: By December 31, 2012, at least 52 percent of youth and children will participate in at least 60 minutes of physical activity every day.

Baseline—YRBS, 2001: 23.5 percent of high school youth participated in moderate physical activity for at least 30 minutes per day, and 47.5 percent of middle school youth participated in moderate physical activity for at least 30 minutes per day. CHAMP, 2005: 73 percent of children ages 2-17 spent one hour or more in physically active play, and 96 percent of children ages 2-17 never walk or ride a bike to school.*

**Baseline data begins in 2000-2001 to reflect trends over a longer period of time. Newer baseline data is used where new questions were added to existing surveys or new surveys were implemented.*



The Strategies

In order to increase the effectiveness of obesity prevention efforts for North Carolinians, we must embrace evidence-based strategies that promote healthy weight and reverse the obesity epidemic. The following list of strategies will help us increase awareness, change behavior and create policies and environments that promote and support physical activity and healthy eating for all North Carolinians.

A strategy is a long term plan of action designed to achieve a particular goal.

INDIVIDUAL AND FAMILY STRATEGIES

- Prepare and eat more meals at home.
- Serve portions appropriate to a family member's age and activity level.
- Enjoy more fruits and vegetables (fresh, frozen, canned, dried) at home and whenever you eat out.
- Offer water as the standard beverage at meals and snacks.
- Limit sugar-sweetened beverages to occasional servings of moderate portion size.
- Learn to eat only when hungry and stop when full.
- Limit eating out and choose restaurants with healthy options.
- Limit the number of fast-food meals eaten each week.
- Help all family members learn to assess the amount to eat when served large portions so that caloric intake and physical activity is balanced.
- Breastfeed infants for at least the first 4 to 6 months of life.

- Establish physical activity as a routine part of everyday life for all family members.
- Learn about public facilities for physical activity in your neighborhood and establish a regular physical activity plan for your family.
- Limit the amount of television, video games and computer use by all family members.
- Encourage active play as an alternative to TV watching and video games.
- Teach children and youth to critique TV advertising and resist pressure to buy foods and beverages high in calories and low in nutrients.

COMMUNITY AND SCHOOLS STRATEGIES

- Conduct and/or support highly visible, community-wide campaigns with messages directed to large audiences through different types of media, including television, radio, newspapers, movie theaters, billboards and mailings. These campaigns should include strategies such as support or self-help groups, physical activity counseling, risk factor screening and other community events.



*Eat Smart,
Move More...
North Carolina
billboards*

**Prepare More
Meals at Home**



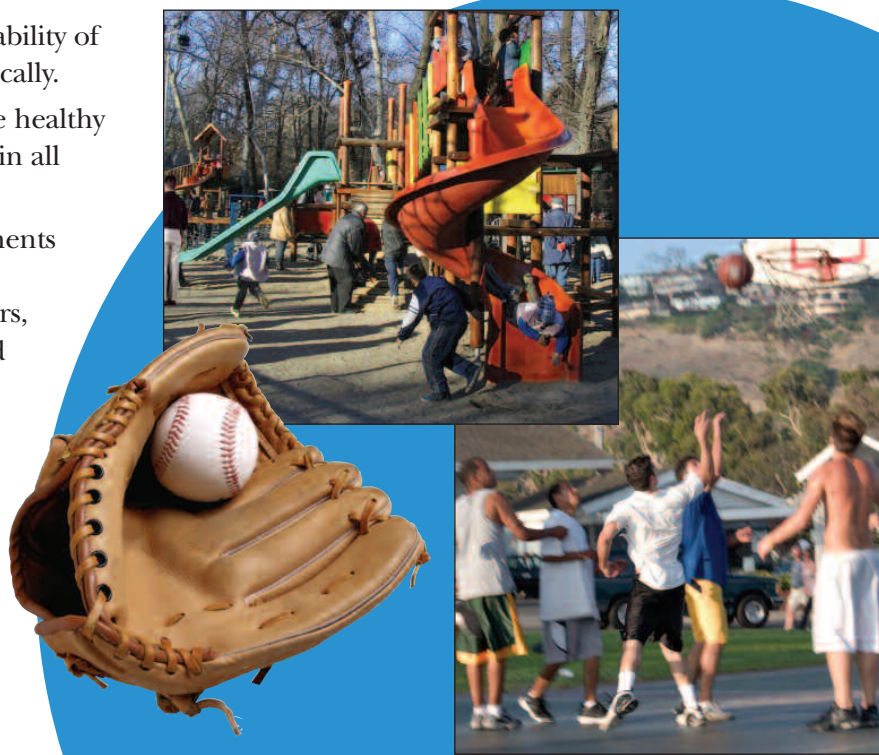
Breastfeed Your Baby

This year's #1 baby gift—breast milk.
Get more tips at

www.EatSmartMoveMoreNC.com



- Engage community leaders as role models to promote healthy eating and physical activity.
- Create and support worksite interventions for overweight treatment and prevention. Interventions should be multicomponent aimed at healthy eating, physical activity and cognitive change.
- Establish and support a network of accessible, family-based and culturally relevant interdisciplinary weight management services for children, youth and adults.
- Include screening and obesity prevention services as part of routine health care.
- Expand routine tracking of Body Mass Index by health care professionals who also offer relevant evidence-based counseling and guidance, serve as role models and provide leadership in their communities for obesity prevention efforts.
- Increase awareness of prevention and treatment programs for adults and children.
- Ensure equitable access to childhood and adult overweight prevention and treatment services to reduce health disparities.
- Increase access to community gardens and farmers' markets where fresh fruits and vegetables can be grown or purchased.
- Work with farmers to increase the availability of fruits and vegetables that can be sold locally.
- Increase access to a variety of affordable healthy foods in grocery stores and restaurants in all neighborhoods.
- Provide and support physical improvements for child care facilities and schools that promote healthy eating, such as steamers, blenders, salad bars, milk machines and removal of fryers.
- Prohibit advertising or service of sugar-sweetened beverages in schools or child care.
- Assure that all public buildings have designated and appropriate space provided for women who are breastfeeding and for storage of breast milk.
- Display point-of-decision prompts (signs) by elevators or escalators that encourage people to use nearby stairs for health benefits or weight loss.
- Encourage physical activity by building, strengthening and maintaining social networks that provide supportive relationships for behavior change (e.g., setting up a buddy system, making contracts with others to complete specified levels of physical activity, or setting up walking groups or other groups to provide friendship and support).
- Create and support programs that teach behavioral skills to help participants incorporate physical activity into their daily routines. The programs should be tailored to each individual's specific interests, preferences and readiness for change and should teach behavioral skills such as 1) goal-setting and self-monitoring of progress toward those goals, 2) building social support for new behaviors, 3) behavioral reinforcement through self-reward and positive self-talk, 4) structured problem-solving to maintain the behavior change, and 5) prevention of relapse into sedentary behavior.



- Expand opportunities for physical activity through physical education classes, intramural and interscholastic sports programs and other physical activity clubs, programs and lessons; after-school use of facilities, use of schools as community centers; and walking and biking to school programs.
- Increase the availability of quality, daily physical activity and physical education in schools for all children.
- Provide fun physical activities in after-school programs.
- Compile and publicize a listing of existing facilities that provide safe, inclusive and affordable opportunities for physical activity in the community.
- Encourage the promotion of physical activity in faith communities and expanded use of their physical activity facilities.
- Expand opportunities for physical activity including recreational facilities, parks, playgrounds, sidewalks, bike paths and safe streets in neighborhoods.
- Involve worksites, coalitions, agencies and communities in attempts to change the local environment to create opportunities for physical activity. Such changes include creating walking trails, building exercise facilities or providing access to existing nearby facilities.
- Build new bike paths, sidewalks, accessible walking trails and parks where the need exists.
- Review transportation policies and traffic patterns and revise to facilitate safe walking and biking.
- Adopt local policy that sets standards for green space and sidewalks in new developments.

POLICY AND ENVIRONMENTAL STRATEGIES

- Implement policies to encourage providing healthy options in age-appropriate portion sizes in all situations where food and beverages are served, including worksites, government agencies, schools, after-school programs, clubs, faith organizations and restaurants.
- Develop and implement a mechanism for use of electronic benefit transfer (EBT) in farmers' markets and produce stands.
- Create policies that provide economic incentives to encourage production and distribution of healthy foods and beverages, including fruit and vegetables.
- Develop and maintain breastfeeding friendly policies and environments at worksites, healthcare agencies and faith organizations.
- Prioritize capital improvement projects to increase opportunities for physical activity.



Key Resources

STATE

EatSmartMoveMoreNC.com

Eat Smart, Move More...NC is a statewide movement that encourages healthy eating and physical activity wherever people live, learn, work, play and pray. The website offers a wealth of resources for health professionals, media representatives, consumers and anyone else looking for data, information or ideas about eating smart and moving more.

FitTogetherNC.org

Fit Together is a statewide campaign designed to raise awareness around the dangers of unhealthy weight and more importantly to equip individuals, families and communities with the tools they need to address this serious health concern. The website links North Carolinians to tools for healthier weight and lifestyles.

Moving Our Children Toward a Healthy Weight—Finding the Will and the Way

This leadership plan is designed to raise awareness about childhood overweight and provide recommendations for action to address childhood overweight. It uses a multi-level approach, focusing on individual and interpersonal behavior change, as well as organizational, community and societal changes necessary to support healthy eating and increased physical activity for children, youth and their families. This document is available for download at www.NCHealthyWeight.com.

N.C. Health and Wellness Trust Fund's *Childhood Obesity in North Carolina*

This is a report of Fit Families NC, a study Committee for Childhood Overweight/Obesity which was commissioned by the N.C. Health and Wellness Trust Fund to help us better understand the causes of the obesity epidemic and develop realistic recommendations for addressing it. This report outlines the key recommendations of the committee, which included representatives from (but not limited to) public health, education, academia, faith-based organizations, city/county government and the beverage industry. The report can be accessed at www.healthwellnc.com/hwtfc/.

North Carolina Blueprint for Changing Policies and Environments in Support of Healthy Eating

This is a community guide for developing and implementing effective policy and environmental change interventions aimed at supporting and encouraging individuals to eat healthier, as well as to increase public awareness of the importance of these changes. The *Blueprint* provides strategies and activities for increasing healthy eating. This document is available for download at www.EatSmartMoveMoreNC.com.

North Carolina Blueprint for Changing Policies and Environments in Support of Increased Physical Activity

This is a community guide for developing and implementing effective policy and environmental change interventions aimed at supporting and encouraging individuals to be more active, as well as to increase public awareness of the importance of these changes. The *Blueprint* provides strategies and activities for increasing physical activity. This document is available for download at www.EatSmartMoveMoreNC.com.

North Carolina 5 A Day Coalition: Strategic Plan to Increase Fruit and Vegetable Consumption 2004-2010

This plan outlines the vision, outcomes, guiding principles, goals and objectives for the 5 A Day program in North Carolina. The overall success in improving the health status of North Carolinians depends greatly on achieving dramatic increases in the rates of fruit and vegetable consumption among both adults and children. This document is available for download at www.NC5aday.com.



Pediatric Healthy Weight Research and Treatment Center

The Center, at East Carolina University, is focused on preventing and reducing childhood obesity, primarily in eastern North Carolina, through research, clinical care and community collaborations. It operates two healthy weight clinics that treat overweight children in the region. The Center has provided leadership for the development and implementation of a standardized medical nutrition therapy (MNT) protocol that is used throughout Pitt County. It also increases awareness of the obesity epidemic through an annual summit, bi-monthly forums for health professionals and researchers and a white paper on childhood obesity in eastern North Carolina. The MNT protocol and white paper can be assessed at the Center's website at www.ecu.edu/pedsweightcenter.

Promoting, Protecting and Supporting Breastfeeding: A North Carolina Blueprint for Action

This is a blueprint for action in North Carolina to promote, protect and support breastfeeding through individual efforts, policies, environmental support and research. It provides guidance for public awareness campaigns and policy changes in health care systems, the insurance industry, the business community and educational institutions. This document can be accessed at www.nutritionnc.com/breastfeeding/breastfeeding-ncActionPlan.htm.

NATIONAL

American Dietetic Association (ADA) Evidence-Based Nutrition Practice Guideline

In May 2006, ADA published its *Adult Weight Management Evidence-Based Nutrition Practice Guideline*, which lists evidence-based recommendations for treatment of overweight and obesity in adults. The ADA guidelines consist of systematically developed statements based on scientific evidence to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances. The Guideline is available online to members of the American Dietetic Association at www.eatright.org or by annual subscription for non-members.

American Dietetic Association (ADA) Position Papers

ADA Position Papers explain the Association's stance on issues that affect the nutritional status of the public. Positions, which consist of a position statement and a support paper, are based on sound scientific data. In June 2006, the ADA published its Position Paper on Individual, Family, School and Community-Based Interventions for Pediatric Overweight. This document can be accessed on the American Dietetic Association's website at www.eatright.org.

Calories Count: Report of the Working Group on Obesity

Issued by the U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, this report provides recommendations that address multiple facets of the obesity problem including developing appropriate and effective consumer messages to aid consumers in making wiser dietary choices; formulating educational strategies in the form of partnerships, to support the dissemination and understanding of these messages; specific new initiatives to improve the labeling of packaged foods with respect to caloric and other nutritional information; initiatives enlisting and involving restaurants in the effort to combat obesity; the development of new therapeutics; the design and conduct of effective research in the fight against obesity; and the continuing involvement of stakeholders in the process. This report is available at www.fda.gov/oc/initiatives/obesity.

Centers for Disease Control and Prevention (CDC)

Weight Management Research to Practice Series

There are currently two papers in this series, each of which address a particular weight management issue. The papers summarize the science on the issue and then make research-based suggestions for practice. The two papers currently in the series are titled "Can Eating Fruits and Vegetables Help People to Manage Their Weight?" and "Do Increased Portion Sizes Affect How Much We Eat?" The series is available at www.cdc.gov/NCCDPHP/dnpa/nutrition/health_professionals/.

Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults

The National Heart, Lung, and Blood Institute, in cooperation with the National Institute of Diabetes and Digestive and Kidney Diseases, released the first federal guidelines on the identification, evaluation and treatment of overweight and obesity. Access these reports at www.nhlbi.nih.gov/guidelines/obesity/.



Dietary Guidelines for Americans 2005

The Dietary Guidelines for Americans 2005 provide authoritative advice for people 2 years of age and older about good dietary habits, which promote health and reduce the risk of chronic disease. The *Guidelines* have been published jointly every five years since 1980 by the Department of Health and Human Services (DHHS) and the Department of Agriculture (USDA). These documents serve as the basis for federal food and nutrition education programs. The *Guidelines* are available at www.health.gov/dietaryguidelines/.

MyPyramid.gov

The MyPyramid system provides many options to help Americans make healthy food choices and to be active every day. MyPyramid incorporates recommendations from the 2005 Dietary Guidelines for Americans. MyPyramid was developed to carry the messages of the dietary guidelines and to make Americans aware of the vital health benefits of simple and modest improvements in nutrition, physical activity and lifestyle behavior. The MyPyramid symbol is meant to encourage consumers to make healthier food choices and to be active every day.

Guide to Community Preventive Services (Community Guide)

The *Community Guide* summarizes what is known about the effectiveness, economic efficiency and feasibility of interventions to promote community health and prevent disease. It was developed by the Task Force on Community Preventive Services, an independent decision-making body appointed by the Director of the Centers for Disease Control and Prevention (CDC). The *Community Guide* is available at www.thecommunityguide.org/.

Institute of Medicine of the National Academies (IOM)

The IOM is a non-profit organization chartered in 1970 as a component of the National Academy of Sciences. It provides unbiased, evidence-based and authoritative information and advice concerning health and science policy to policy-makers, professionals, leaders in every sector of society and the public at large. *Preventing Childhood Obesity: Health in the Balance* was published in 2004 and *Progress in Preventing Childhood Obesity* was published in 2006. Access the IOM online at www.iom.edu/.

The Keystone Forum on Away-From-Home Foods: Opportunities for Preventing Weight Gain and Obesity

The purpose of this forum was to propose strategies to support consumers' ability to manage calorie intake when selecting and eating away-from-home foods. Participants in the forum included 44 individuals from industry, government, academia, public health organizations, consumer organizations and others. The forum was funded by Food and Drug Administration as part of the follow-up to its 2004 Counting Calories report. The final report (May 2006) from the forum is available at www.keystone.org/.

The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity 2001

The Surgeon General's Call to Action promotes the recognition of overweight and obesity as major public health problems; assists Americans in balancing healthful eating with regular physical activity to achieve and maintain a healthy or healthier body weight; identifies effective and culturally appropriate interventions to prevent and treat overweight and obesity; encourages environmental changes that help prevent overweight and obesity; and develops and enhances public-private partnerships to help implement this vision. This report is available at www.surgeongeneral.gov/library/.

Weight-Control Information Network

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) of the National Institutes of Health (NIH) established the Weight-control Information Network (WIN) in 1994 to provide the general public, health professionals, the media and Congress with up-to-date, science-based information on obesity, weight control, physical activity and related nutritional issues. Access this network at <http://win.niddk.nih.gov>.



Glossary

Best Practices—Programs, initiatives or activities that are considered leading edge, or exceptional models for others to follow.

Behavioral Risk Factor Surveillance System (BRFSS)—Ongoing data collection program sponsored by the Centers for Disease Control and Prevention to monitor the prevalence of major behavioral risks among adults associated with premature morbidity and mortality.

Body Mass Index (BMI)—An index of body weight for height used to classify overweight or obesity in adults. BMI, adjusted for age and gender, is also used to identify children and adolescents who are overweight or at-risk for overweight.

Child Health Assessment Monitoring Program (CHAMP)—A surveillance system to monitor health and risk behaviors of children in N.C. under 18 years of age.

Obesity—An excess amount of subcutaneous body fat in proportion to lean body mass. In adults, a BMI of 30 or greater is considered obese. The Institute of Medicine defines obesity in children and youth as the age- and gender-specific BMI that is equal to or greater than the 95th percentile of the CDC BMI charts. NOTE: Others, including CDC, classify children at or above the 95th percentile as overweight and do not use the term obese for children.

Overweight—In adults, a BMI of over 25 but less than 30 is considered overweight. In children and youth, BMI is used to assess underweight, overweight and risk for overweight. For children an age and gender specific BMI at or above the 95th percentile is considered overweight (note that the Institute of Medicine classifies children at or above the 95th percentile as obese). Children at the 85th percentile and below the 95th percentile are considered to be at-risk for overweight according to CDC.

Chronic disease—An illness that is prolonged, does not resolve spontaneously and is rarely cured completely. Chronic diseases such as heart disease, cancer and diabetes account for seven of every 10 deaths and affect the quality of life of 90 million Americans. Although chronic diseases are among the most common and costly problems, they are

also among the most preventable. Adopting healthy behaviors such as eating nutritious foods, being physically active and avoiding tobacco use can prevent or control the devastating effects of these diseases.

Environment—The entirety of the physical, biological, social, cultural and political circumstances surrounding and influencing a specified behavior.

Environmental change—Describes changes to physical and social environments that provide new or enhanced supports for healthy behavior.

Evidence-based—Development, implementation and evaluation of effective programs and policies through application of principles of scientific reasoning, including systematic uses of data and information systems, and appropriate use of behavioral science theory and program planning models. From such an approach, activities are explicitly linked with the underlying scientific evidence that demonstrates effectiveness. An evidence-based approach involves the development and implementation of effective programs and policies.

Health disparities—Differences in health status among distinct segments of the population including differences that occur by gender, race or ethnicity, education or income, disability or living in various geographic locations.

Healthy diet—A diet which contains a balanced amount of nutrients, varied food and minimal amounts of sugar, fat and salt. Healthy eating is identical to a healthy diet, in that it relates to the practice of food intake for healthy living.

Healthy eating—Describes following a dietary pattern consistent with the Dietary Guidelines for Americans.

Health promotion—A strategy for improving the health of the population by providing individuals, groups and communities with the tools to make informed decisions about their well-being. Moving beyond the traditional treatment of illness and injury, health promotion efforts are centered primarily on the social, physical, economical and political factors that affect health, and include such activities as the promotion of healthy eating and increased physical activity.

Healthy weight—Compared to overweight or obese, a body weight that is less likely to be linked with any weight-related health problems such as Type II diabetes, heart disease, high blood pressure and high blood cholesterol. A body mass index (BMI) of 18.5 up to 25 refers to a healthy weight, though not all individuals with a BMI in this range may be at a healthy level of body fat; they may have more body fat tissue and less muscle. A BMI of 25 up to 30 refers to overweight and a BMI of 30 or higher refers to obese, although some individuals with a BMI in this range may be at a healthy weight.

Incentives—Rewards for achieving a level of performance or goal.

Intervention—An organized or planned activity that interrupts a normal course of action within a selected group of individuals or the community at large in order to diminish an undesirable behavior or to enhance or maintain a desirable one. In health promotion, interventions are linked to improving the health of the population or to diminishing the risks of illness, injury, disability or death.

North Carolina Nutrition and Physical Activity Surveillance

System (NC-NPASS)—Provides indicators of nutritional status such as overweight, underweight and anemia. In the future, NC-NPASS will monitor trends in key nutrition and physical activity behaviors such as soft drink consumption, fruit and vegetable consumption, levels of physical activity and television viewing.

PAN Progress ✓Check—An evaluation system to track environmental and policy changes.

Physical Activity and Nutrition (PAN) Behaviors Monitoring

Form—A survey tool that assists local health departments and other agencies in collecting data for conducting community assessments, planning and evaluating programs and applying for grants. The PAN Behaviors Data Collection and Reporting Guidance Manual provides technical information to staff in public health agencies on tools for collecting and reporting information on physical activity and nutrition behaviors.

Pediatric Nutrition Surveillance System (PedNSS)—Sponsored by the Centers for Disease Control and Prevention (CDC), program-based surveillance system that monitors the nutritional status of low-income infants, children and women in federally-funded maternal and child health programs. PedNSS data represent more than 7 million children from birth to age 5. This surveillance system provides data that describe prevalence and trends of nutrition, health and behavioral indicators for mothers and children.

Physical activity—Any bodily movement that is produced by the contraction of skeletal muscle and that results in energy expenditure.

Moderate—An amount of activity sufficient to burn approximately 150 calories of energy per day or 1000 calories per week. The duration of time it takes someone to achieve a moderate amount of activity depends on the intensity of the activities chosen.

Moderate Intensity—Any activity performed at 50 to 69 percent of maximum heart rate for age. For most people, it is equivalent to sustained walking, is well within most individuals' current physical capacity, and can be sustained comfortably for prolonged periods of time (at least 60 minutes). A person should feel some exertion but also should be able to carry on a conversation comfortably during the activity.

Vigorous Intensity—Hard or very hard physical activity requiring sustained, rhythmic movements and performed at 70 percent or more of maximum heart rate for age. Vigorous activity is intense enough to represent a substantial physical challenge to an individual and results in significant increases in heart and breathing rate.

Policies—Laws, regulations and rules (both formal and informal) within a setting.

Policy change—Modifications to laws, regulations, formal and informal rules, as well as standards of practice. It includes fostering both written and unwritten policies, practices and incentives that provide new or enhanced supports for healthy behaviors and lead to changes in community and societal norms. Policy changes can occur at different levels, such as the organizational level (a single worksite), the community level (an entire school system) or at the society level (state legislation).

Social marketing—Applying advertising and marketing principles and techniques (e.g., applying the planning variables of product, promotion, place and price) to health or social issues with the intent of bringing about behavior change. The social marketing approach is used to reduce the barriers to and increase the benefits associated with the adoption of a new idea or practice within a selected population.

Youth Risk Behavior Surveillance System (YRBS)—Sponsored by the Centers for Disease Control and Prevention (CDC), this is a program developed to monitor priority health-risk behaviors that contribute to the leading causes of mortality, morbidity and social problems among youth in the U.S.

References

1. Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak, CJ, Flagal, KM. Prevalence of Overweight and Obesity Among U.S. Children, Adolescents, and Adults, 1999-2004. *Journal of the American Medical Association*. 2006; 295(13): 1549-55. Available at <http://jama.ama-assn.org>.
2. Bowman SA, Vinyard BT. Fast Food Consumption of U.S. Adults: Impact on Nutrient and Energy Intakes and Overweight Status. *Journal of the American College of Nutrition*. 2004; 23(2): 163-168. Available at www.jacn.org/.
3. U.S. Census Bureau. U.S. Department of Commerce. Food Services and Drinking Places: 2002. October 2004. Available at www.census.gov/.
4. The Keystone Forum on Away-From-Home Foods: Opportunities for Preventing Weight Gain and Obesity. The Keystone Center: Washington; May 2006. www.keystone.org.
5. Nestle M. Soft Drink "Pouring Rights": Marketing Empty Calories. *Public Health Reports*. 2000; 115: 308-319.
6. U.S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information. www.fhwa.dot.gov/.
7. U.S. Census Bureau, Statistical Abstract of the United States, 2006. Section 24: Communications and Information Technology. 737: Table 1117. www.census.gov/prod/2001pubs/.
8. U.S. Census Bureau, Statistical Abstract of the United States, 2006. Section 24: Communications and Information Technology. 736: Table 1116. www.census.gov/prod/2005pubs/.
9. Chenoweth & Associates, Inc. The Economic Cost of Unhealthy Lifestyles in North Carolina. 2005. Available at: www.beactivenc.org/mediacenter/Summary%20Report.pdf.
10. McLeroy, K.R., Bibleau, D., Streckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly*. 15: 351-378.



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