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the obesity epidemic in Florida

building physical activity & nutrition opportunities for a healthy life

2001 report

Florida Department of Health **Bureau of Chronic Disease Prevention** **Bureau of Epidemiology**

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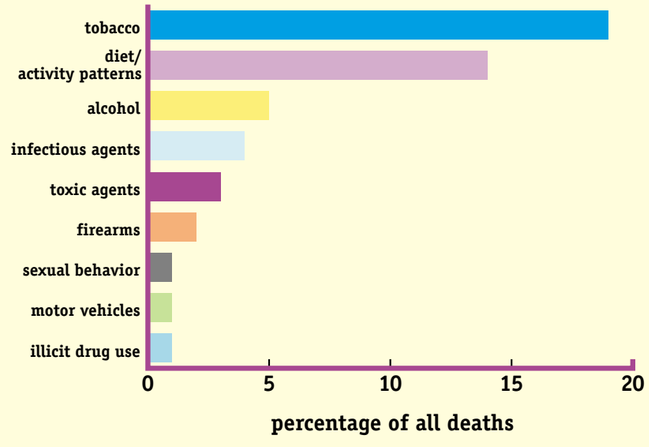
inside this report:

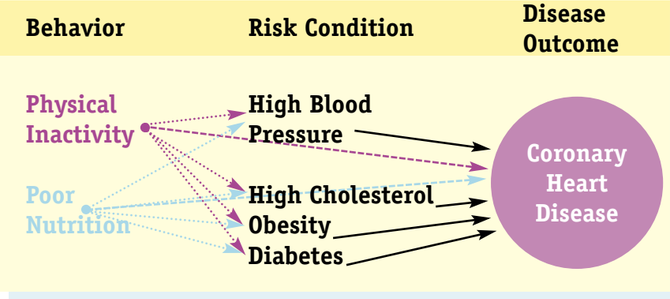
introduction

Poor nutrition and physical inactivity together are the second leading preventable cause of death in the United States. Only tobacco use kills more people. Poor nutrition and physical inactivity are responsible for an estimated 300,000 deaths each year and are causally related to a variety of chronic diseases and conditions, including overweight and obesity, hyperinsulinemia and type 2 diabetes, high blood pressure, high cholesterol, coronary heart disease, stroke, osteoarthritis, and some cancers. While poor nutrition and physical inactivity are associated with an increased risk of death across the weight span, related overweight and obesity also are leading killers, accounting for an estimated 300,000 deaths each year in the United States. Because of the close relationship between poor nutrition and physical inactivity and overweight and obesity, there is considerable overlap between the deaths due to poor nutrition and physical inactivity and the deaths due to obesity. In addition to being preventable causes of death, these conditions are costly. In 1995 in the United States, approximately $51.6 billion was spent on direct medical care for obesity and obesity-related diseases, and $47.6 billion in lost productivity was attributed to morbidity and mortality related to obesity.

Actual causes of death, U.S., 1990



Prevention pathways—an example



Overweight and obesity result from an imbalance of energy intake and energy output, that is when energy intake (food) is greater than energy output (physical activity). In both adults and children, overweight and obesity are quantified by units of body mass index (BMI). The BMI quantifies excess weight adjusted for height and is strongly correlated with body fat. For adults, overweight is defined as a BMI level of 25 or higher and obesity is defined as a BMI level of 30 or higher. A BMI of 25 corresponds to a weight of 155 pounds in a person who is 5 feet 6 inches tall and 184 pounds in a person who is 6 feet tall. While the terms "obesity" and "overweight" refer to adults, the terms "overweight" and "at risk for overweight" refer to children. For children, the BMI values defining those who are at risk for overweight (above the 85th percentile, formerly called "overweight") and those who are overweight (above the 95th percentile, formerly called "obese") are sex- and age-specific. These sex- and age-specific BMI values are derived from the 1963 National Health Examination Survey. For example, a 6 year old male would be at risk for overweight if his BMI were greater than 17.0 (the BMI value at the 85th percentile), and would be overweight if his BMI were greater than 18.4 (the BMI value at the 95th percentile). For a 6 year old female, the corresponding BMIs

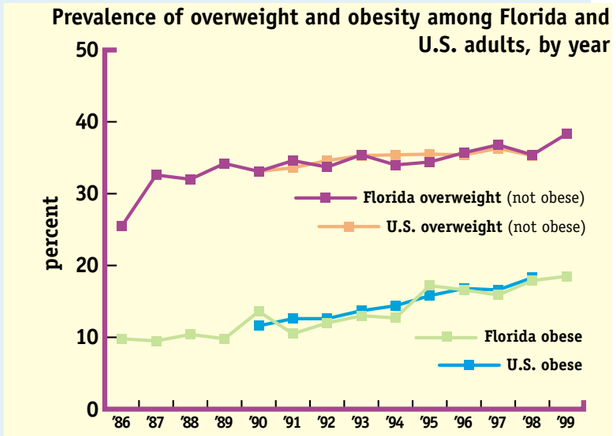
would be 17.1 and 18.8 [see www.cdc.gov/nchs/data/ad/ad314.pdf]. By the age of 17 or 18, as children approach adulthood, the BMI values marking the 85th and 95th percentiles are very close to the BMI values of 25 and 30 which define overweight and obesity for adults.

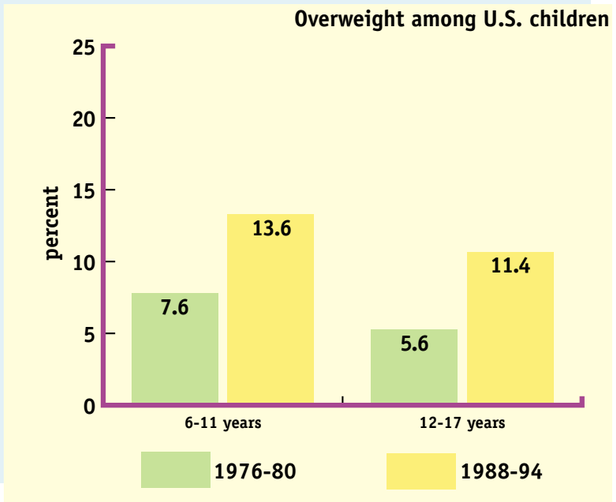
Nutrition and physical activity patterns are more difficult to measure and track. Some common indicators for nutrition are: meeting the recommendations of the USDA Food Guide Pyramid (which only 2% of children do); consuming five or more servings of fruits and vegetables daily, as recommended by the National Cancer Institute (which fewer than 15% of children and 25% of adults do); and limiting the percentage of calories derived from fat (to < 30%—currently at 34% to 37%). Tracking these indicators requires in-depth studies of food consumption and has generally not been undertaken at the state or local level. Common indicators of physical activity include the percent of the population that engages in no leisure time physical activity; the percent that meets the Healthy People 2010 goal of regular physical activity; and the percent of students who participate in daily physical education classes. Each of these indicators is of limited quality for quantifying and tracking total energy expenditure through activity.

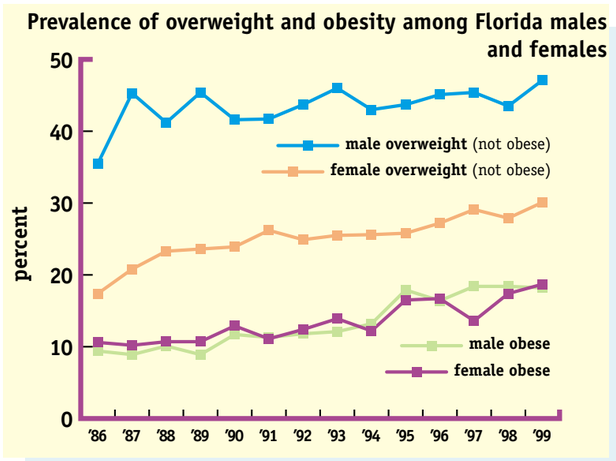
a major public health problem

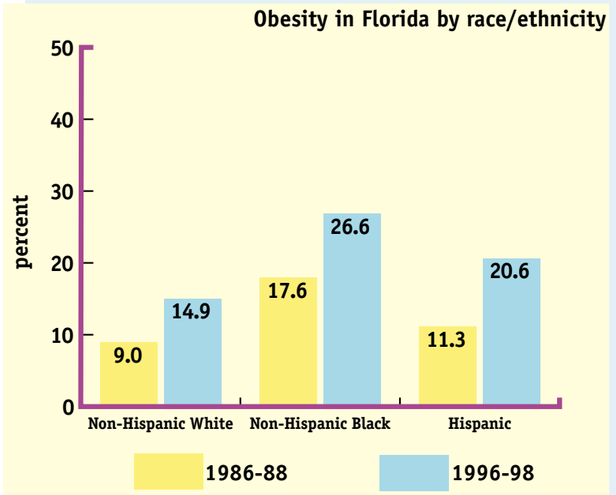
The prevalence of overweight and obesity in adults and children has increased dramatically in the United States over the past 20 years, and is a symptom of the changes in nutrition and physical activity that adversely affect health status. In Florida, while the prevalence of overweight has increased modestly since 1986, when weight and height were first monitored in the adult population, the prevalence of obesity has nearly doubled. Currently, in Florida, 38.3% of adults are overweight and an additional 18.5% are obese, representing increases of 17.5% and 94% since 1986 according to the Behavioral Risk Factor Surveillance System (BRFSS). Nationally, the percent of children aged 6-11 years who are overweight (that is, who are above the sex- and age-specific 95th percentile) has almost doubled between the second and third National Health and Nutrition Examinations Surveys (NHANES), conducted in 1976-1980 and 1988-1994, respectively, increasing from 7.6% of children to 13.6%. The percent of overweight adolescents aged 12-17 years has more than doubled over the same time period, increasing from 5.6% of adolescents to 11.4% (NHANES II and III).

Health consequences associated with childhood overweight include decreased release of growth hormone, hyperinsulinemia, carbohydrate intolerance, type 2 diabetes, high blood pressure, and high cholesterol. Sixty percent of overweight children have at least one risk factor for cardiovascular disease, such as high blood pressure, high cholesterol, or hyperinsulinemia. Twenty-five percent









No one has escaped the epidemic of obesity. Across gender, age, and racial and ethnic groups, dramatic increases in the prevalence of obesity have been observed over very short periods of time.

of overweight children have two or more risk factors for cardiovascular disease. These adverse health conditions in childhood lead to chronic diseases in adulthood.

While overweight and obesity are major public health problems, their causes—poor nutrition and physical inactivity—put even normal weight people at risk for adverse health outcomes. In fact, 27% of children aged 5 to 10 years—regardless of weight status—already have one risk factor for cardiovascular disease. Thus, for individuals across the weight spectrum, healthful nutrition, particularly diets high in fruits, vegetables, and whole grains and low in fat and saturated fat, and regular physical activity, lower the risk for many chronic diseases including coronary heart disease, stroke, some cancers, diabetes, and osteoporosis.

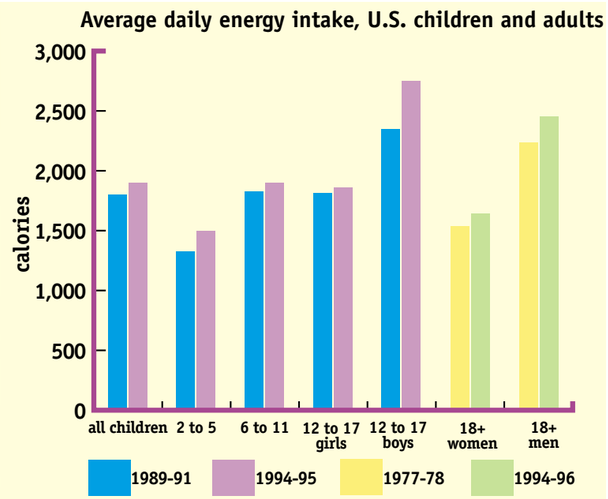
No one has escaped the epidemic of obesity. Across gender, age, and racial and ethnic groups, dramatic increases in the prevalence of obesity have been observed over very short periods of time. In general, men are more likely than women to be overweight and are just as likely to be obese. For women, overweight has increased 73% from 17.4% in 1986 to 30.1% in 1999. For men, the increase in overweight has been smaller, at 33%, increasing from 35.5% to 47.1% over the same time period. For both men and women, obesity has increased substantially (from 9.4% to 18.2% for men and from 10.6% to 18.7% for women).

Across the age span, all groups have seen increases in obesity. The most dramatic increase occurred among the youngest adults, those aged 18 to 29 years, among whom the prevalence of obesity increased by 110% from 1986-88 to 1996-98. Obesity increased 73% among 30-44 year olds, 38% among 45-64 year olds, and 77% among those aged 65 and older.

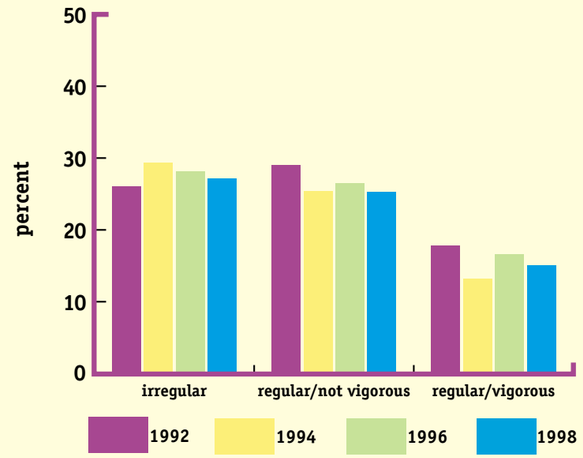
Overall, since monitoring of weight status began in Florida in 1986, non-Hispanic blacks have had the highest obesity rates followed by Hispanics and non-Hispanic whites. Over the ten years from the late 1980s to the late 1990s, the greatest increases have tended to occur in those population subgroups such as non-Hispanic whites and Hispanics with the lowest rates. The obesity rate increased by 65% among non-Hispanic whites, by 51% among non-Hispanic blacks, and by 82% among Hispanics from 1986-88 to 1996-98 (BRFSS).

As rates of obesity skyrocket, the propelling force seems to be excess calorie intake not sufficiently balanced by energy expenditure. In the United States, from 1977-78 to 1994-96, caloric intake for men increased from 2,239 to 2,455 kilocalories per day. Over the course of a year, without increasing physical activity, this increased caloric intake would lead to a weight gain of 22.5 pounds if these calories were stored as fat. For women during this same period, caloric intake increased from 1,534 to 1,646 kilocalories per day which equates to 11.7 pounds per year if these calories were stored as fat. At the same time, the proportion of the population who are physically active has not increased. Additional data suggest that even among those who are physically active, the level of activity has declined. Since 1992, the percent of Florida adults engaging in irregular physical activity has generally increased while the "regular/not vigorous" and "regular and vigorous" categories have generally decreased.

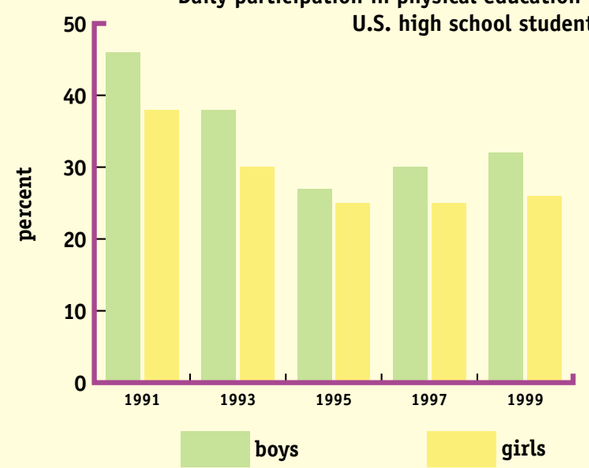
Average daily energy intake, U.S. children and adults



Changes in the intensity of physical activity, Florida adults



Daily participation in physical education—U.S. high school students



leading health indicators

Healthy People 2010 includes 467 objectives to improve health status by the end of the decade. These objectives have been prioritized into 10 Leading Health Indicators, which reflect the major public health concerns in the United States and can become the "basic building blocks for community health initiatives." The first two of the ten leading health indicators are physical activity and overweight/obesity. The specific objectives related to these two leading indicators include:

physical activity

- Increase to 85% the proportion of adolescents who engage in vigorous physical activity that promotes cardio-respiratory fitness 3 or more days per week for 20 or more minutes per occasion.
- Increase to 30% the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day.

overweight and obesity

- Reduce to 5% the proportion of children and adolescents who are overweight or obese.
- Reduce to 15% the proportion of adults who are obese.

Healthy People 2010 notes that regular physical activity is associated with lower death rates, and, along with healthful nutrition, is important for maintaining a healthy weight. Regular physical activity and efforts to maintain a healthy weight should start early in childhood and continue throughout adulthood. Initiatives at the national, state, and local levels are needed to reach these targets by 2010.

the role of the environment

Healthy People 2010 acknowledges that obesity is the result of a complex array of social, behavioral, cultural, environmental, physiological, and genetic factors. Over the past 20 years—the time period during which the epidemic of obesity has emerged—dramatic changes have occurred in the social and physical environment, while genetics and physiology have remained largely unchanged. The social and physical environment in which people live exerts a powerful influence on individual behaviors—promoting some behaviors and constraining others. For example, advertisements and media messages, "super-sized" portions, and promotional pricing encourage the consumption of foods that are high in calories, sugar, or fat and low in nutrition, while plentiful fast food restaurants, vending machines and convenience stores make these foods readily available and easily accessible. At the same time, opportunities to expend excess calories are constrained by automatic doors and drive through services, lack of sidewalks and safe recreational areas. Promotions, pricing, packaging, and availability of food all encourage Americans to eat more, not less, and promotion of non-nutritious food begins at an early age. The average child sees 10,000 food commercials each year, 95% of which are for candy, fast food, soft drinks, and sugared cereals. The food industry spends about $11 billion annually to advertise their products and another $22 billion on trade shows and other consumer promotions. Conversely, the National Cancer Institute spends about $1 million annually on its 5 A Day campaign to increase consumption of fruits and vegetables.

As our society has moved to a service economy and information economy, opportunities for physical activity during work hours have decreased. Most people avoid regular and vigorous physical activity during leisure time and labor-saving devices of all kinds limit our ability to burn calories during the daily routine of living.

Americans spend about one-half of their food budgets and consume about one-third of their calories outside the home, in places where there is limited nutritional labeling and fewer healthful nutrition choices. Food consumed outside the home is generally higher in fat and lower in nutrients than food prepared in the home. With one-third of calories consumed outside the home, the average diet is higher in fat and sugar than it needs to be or than it has been. In addition, many restaurants serve "super size" portions with as much as 1,000-2,000 calories, or 50%-100% of daily caloric intake, served in one meal.

Healthful nutrition choices are based on the food guide pyramid—including foods that are naturally high in nutrients, fiber, vitamins and minerals such as whole grains, fruits and vegetables. Avoiding foods that are at the tip of the food guide pyramid—those high in fat or sugar and low in nutrition—can lead to a more optimal diet. Americans have access to a diet high in calories, fat, or sugar, low in nutrition and widely available, low in cost, heavily promoted, and good tasting. While good tasting, fruits and vegetables are less widely consumed. The National Cancer Institute recommends all Americans consume at least 5 servings of fruits (2 servings) and vegetables (3 servings) each day for better health. In Florida, fewer than 25% of adolescents and adults eat the recommended number of servings of fruits and vegetables each day (YRBS, BRFSS).

As our society has moved to a service economy and information economy, opportunities for physical activity during work hours have decreased. Most people avoid regular and vigorous physical activity during leisure time and labor-saving devices of all kinds limit our ability to burn calories during the daily routine of living. With less physically demanding work and energy-saving devices, the number of individuals who obtain physical activity in day-to-day activities is diminishing. Increased reliance on the automobile has replaced walking, biking and other modes of transportation that expend more energy. Twenty-five percent of the trips that we make are shorter than one mile and 75% of those trips are made in the car. Increased television watching and computer use by both adults and children have led to increasingly sedentary lifestyles by replacing more physically active behaviors. Dangerous neighborhoods, or the perception of them, have restricted outdoor activities. For example, because of safety or other concerns, many parents drive their children to school even though the school is only a few blocks away.

Effective prevention strategies must address aspects of the social and physical environments that promote poor health habits and constrain healthful behaviors. Policies that alter the social and physical environment, in turn, will lead to changes in individual behaviors that currently increase the risk of chronic conditions like obesity. Modifiable risk factors are characteristics, attributes or behaviors that increase a person's risk or chances of developing or dying from a condition or disease and that can be changed. Modifiable risk factors for overweight and obesity include increased caloric intake, poor nutrition, and physical inactivity. Each of these behaviors can be improved by appropriate prevention and intervention strategies.

Preventing chronic diseases, including obesity, requires changing the poor nutrition and physical inactivity behaviors of the population by changing the social and physical environments that support poor food choices and over-consumption of food along with under-expenditure of energy. Treating chronic diseases including obesity, once they occur, is more difficult and costly.

opportunities for prevention

Primary prevention of obesity, poor nutrition and physical inactivity means preventing these problems before they develop. In particular, those who are not yet overweight or obese should be targeted for intervention. Secondary prevention—preventing the health complications that develop as a result of obesity—can be accomplished by changing nutrition and physical activity behaviors among those who are already overweight or obese. Thus, the key to obesity prevention and control is population-wide policy and other interventions to support healthful nutrition choices and regular physical activity. Importantly, even for those who may never be at risk for obesity, improved nutrition and regular physical activity will improve overall health status.

With environmental changes and supportive policies in place, individuals can more easily adhere to the Dietary Guidelines for Americans to promote healthful nutrition. The Dietary Guidelines describe appropriate serving sizes and the number of servings to consume from five basic food groups. The sixth category—those foods high in fats and sugars—represents foods to be avoided. The Guidelines can be summarized by 10 basic strategies for healthful eating that are grouped under three broad principles: Aim for Fitness, Build a Healthy Base, and Choose sensibly. . .for good health.

These Guidelines should inform food offerings in schools, work sites, and institutions. Schools, in particular, are ideal settings for modeling healthful nutrition and physical activity behaviors, for creating an environment that promotes healthful nutrition and physical activity behaviors, and for teaching these behaviors to children and adolescents. Schools provide opportunities to practice healthful eating with children consuming one and sometimes two major meals at school. Schools can also teach students how to resist the social pressures that discourage healthful eating. Food consumed at school, however, has the highest saturated fat density of all away-from-home sources, including fast food. Schools that participate in the National School Lunch Program (NSLP) must prepare food to meet federal dietary guidelines; however, other on-campus food such as a la carte food and drinks from the cafeteria or vending machines, does not have to meet the guidelines, and often replaces more healthful food offerings.

Dietary Guidelines for Americans

AIM FOR FITNESS

Aim for a healthy weight

Be physically active each day

BUILD A HEALTHY BASE

Let the Pyramid guide your food choices

Choose a variety of grains daily, especially whole grains

Choose a variety of fruits and vegetables daily

Keep food safe to eat

CHOOSE SENSIBLY

Choose a diet that is low in saturated fat and cholesterol and moderate in total fat

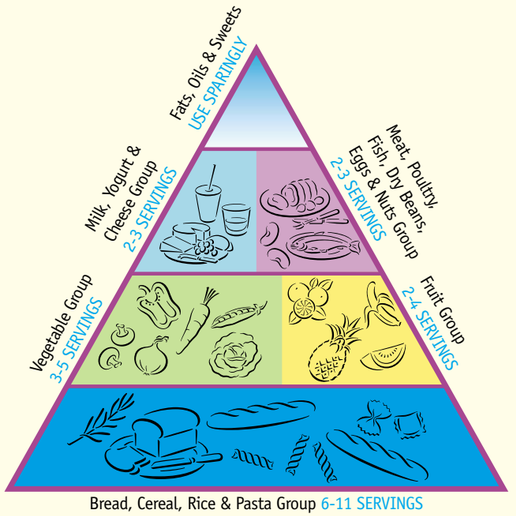
Choose beverages and foods to moderate your intake of sugars

Choose and prepare foods with less salt

If you drink alcoholic beverages, do so in moderation

[U.S. Department of Agriculture and U.S. Department of Health and Human Services]

Food Guide Pyramid



[U.S. Department of Agriculture and U.S. Department of Health and Human Services]

All institutions, including schools, day care centers, work sites, hospitals and senior centers, should make sure that all foods and beverages available make a positive contribution to each person's overall diet and overall health status and are derived from the five major food groups of the Food Guide Pyramid.

Those who follow the recommendations of the Food Guide Pyramid will consume five to nine servings of fruits and vegetables daily. One 6 ounce serving of fruit juice may be substituted for one fruit serving. The Five-A-Day for Better Health recommendations and campaign are based on data from several studies showing lower rates of cancer among those who consume more fruits and vegetables regularly.

The Surgeon General's report on Physical Activity and Health recommends that every American "accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week." Children aged 6 to 11 should be physically active for at least one hour and up to several hours each day, according to the National Association for Sport and Physical Education. Children spend more time watching television or videotapes and playing video games than doing anything else except sleeping. In a Stanford University study, researchers found a direct association between television, videotape, and video game use and body fat. Television watching contributes to obesity both by displacing physical activity and by increasing caloric intake during viewing. In addition, television exposes viewers to non-nutritious food advertising. The American Academy of Pediatrics issued guidelines recommending that parents limit their children's television viewing to no more than 1-2 hours of quality programming a day. More than one-third of young people aged 12-21 do not engage in vigorous physical activity. Among high school students, daily participation in physical education classes has dropped from 41% in 1991 to 29% in 1997.

Lifelong healthy eating and physical activity patterns are often established during childhood. Targeting children by helping them to maintain normal weight and to adopt the nutrition and physical activity behaviors associated with better health are key. Changing the current environment is essential to changing behaviors. The Division of Adolescent and School Health (DASH) at the Centers for Disease Control and Prevention developed two sets of guidelines:

- The Guidelines for School Health Programs to Promote Lifelong Healthy Eating (available at www.cdc.gov/mmwr/pdf/rr/rr4509.pdf);
- The Guidelines for Schools and Community Programs to Promote Lifelong Physical Activity Among Young People (available at www.cdc.gov/mmwr/pdf/rr/rr4606.pdf).

Most children are in school and can be influenced by a supportive school environment modeling healthful behaviors. In addition to influencing individual behaviors of young people, schools can educate and influence the behaviors of families and communities. The summary recommendations from the DASH guidelines are reprinted here.

The Surgeon General's report on Physical Activity and Health recommends that every American "accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week."

guidelines to promote lifelong healthy eating

- Seek input from all members of the school community to develop a coordinated school nutrition policy that promotes healthy eating through classroom lessons and a supportive school environment. The policy should commit the school to:
  - **Provide adequate time for nutrition education.**
  - **Offer healthy, appealing foods (such as fruits, vegetables, low-fat and fat free milk, and low-fat grain products) wherever food is available and discourage the availability of foods high in fat, sodium and added sugars (such as soda, candy, and fried chips) on school grounds and as part of fund-raising activities.**
  - **Discourage teachers from using food to discipline or reward students.**
  - **Provide adequate time and space for students to eat meals in a pleasant, safe environment.**
  - **Establish links with professionals who can provide counseling for nutritional problems, refer families to nutrition services, and plan health promotion activities for staff.**
- Implement nutrition education designed to help students adopt healthy eating behaviors as part of a sequential, comprehensive health education curriculum that begins in preschool and continues through secondary school. Such education should:
  - **Help students learn specific nutrition-related skills, such as how to plan a healthy meal and compare food labels.**
  - **Ensure that students also learn general health skills, such as how to assess their health habits, set goals for improvement, and resist social pressures to make unhealthy eating choices.**
- Provide nutrition education through activities that are fun, participatory, developmentally appropriate, and culturally relevant. These activities should:
  - **Emphasize the positive, appealing aspects of healthy eating rather than the harmful effects of unhealthy eating.**
  - **Present the benefits of healthy eating in the context of what is already important to students.**
  - **Give students many chances to taste foods low in fat, sodium, and added sugars and high in vitamins, minerals and fiber.**
- Coordinate school food service with nutrition education and with other components of the school health program to reinforce messages about healthy eating.
- Provide staff who are involved in nutrition education with adequate preservice and ongoing in-service training that focuses on teaching strategies for promoting healthy behaviors.
- Involve family members and the community in supporting and reinforcing nutrition education.
- Regularly evaluate the program's effectiveness in promoting healthy eating and make changes as appropriate.

guidelines to promote lifelong physical activity

- Establish policies that promote enjoyable, lifelong physical activity.
  - **Schools should require daily physical education and comprehensive health education (including lessons on physical activity) in grades K-12.**
  - **Schools and community organizations should provide adequate funding, equipment, and supervision for programs that meet the needs and interests of all students.**
- Provide physical and social environments that encourage and enable young people to engage in safe and enjoyable physical activity.
  - **Provide access to safe spaces and facilities and implement measures to prevent activity-related injuries and illnesses.**
  - **Provide school time, such as recess, for unstructured physical activity, such as jumping rope.**
  - **Discourage the use or withholding of physical activity as punishment.**
  - **Provide health promotion programs for school faculty and staff.**

- Implement sequential physical education curricula and instruction in grades K-12.
  - **Emphasize enjoyable participation in lifetime physical activities such as walking and dancing, not just competitive sports.**
  - **Help students develop the knowledge, attitudes, and skills they need to adopt and maintain a physically active lifestyle.**
  - **Follow the National Standards for Physical Education.**
  - **Keep students active for most of class time.**

- Implement health education curricula.
  - **Feature active learning strategies and follow the National Health Education Standards.**
  - **Help students develop the knowledge, attitudes, and skills they need to adopt and maintain a healthy lifestyle.**

- Provide extracurricular physical activity programs that offer diverse, developmentally appropriate activities—both noncompetitive and competitive—for all students.

- Encourage parents and guardians to support their children's participation in physical activity, to be physically active role models, and to include physical activity in family events.

- Provide training to enable teachers, coaches, recreation and health care staff, and other school and community personnel to promote enjoyable, lifelong physical activity to young people.

- Assess the physical activity patterns of young people, refer them to appropriate physical activity programs, and advocate for physical activity instruction and programs for young people.

- Provide a range of developmentally appropriate community sports and recreation programs that are attractive to all young people.

- Regularly evaluate physical activity instruction, programs and facilities.

prevention strategies

Many opportunities exist for individuals, health care providers, employers, and schools to address weight maintenance for the whole population as well as weight loss for the overweight and obese through a combination of increased physical activity; low-calorie, healthful diets; and behavioral strategies to reinforce healthy habits.

In addition to the Centers for Disease Control and Prevention, the US Department of Agriculture and numerous scientists, activists, and research and advocacy centers have made recommendations for strategies to change the environment to promote healthful nutrition and physical activity in a variety of settings. These are summarized below.

individuals can:

- **Limit television watching, video games and computer-related activities.**
- **Replace whole milk with fat free milk beginning at age two.**
- **Engage in regular, preferably daily, physical activity.**
- **Follow the dietary recommendations of the food guide pyramid.**

communities can:

- **Provide a range of extracurricular programs in schools and community recreation centers to meet the needs and interests of community members across the age span and from a variety of backgrounds.**
- **Provide funding and other incentives for bicycle paths, recreation centers, swimming pools, parks, and sidewalks.**
- **Develop and provide guides for cities, zoning authorities, and urban planners on ways to modify zoning requirements to increase area and opportunities for physical activity.**
- **Designate downtown areas as pedestrian malls and automobile-free zones.**
- **Modify residential neighborhoods, workplaces and shopping centers to promote physical activity.**

policy-level interventions can:

- **Restrict advertising of high-calorie, low-nutrient foods on television shows commonly watched by children.**
- **Require broadcasters to provide equal time for messages promoting healthful eating and physical activity.**
- **Protect school food programs by eliminating the sale of soft drinks, candy bars, and foods high in calories, fat or sugar in school buildings.**
- **Require that any foods that compete with school meals be consistent with federal recommendations for fat, saturated fat, cholesterol, sugar, and sodium content.**
- **Require chain restaurants to provide information about calorie content on menus or menu boards and nutrition labeling on wrappers.**

- Require that containers for soft drinks and snacks sold in movie theaters, convenience stores, and other venues provide information about calorie, fat and sugar content.
- Require print advertisements to disclose the caloric content of the foods being marketed.
- Develop an incentive system to encourage Food Stamp recipients to purchase fruits, vegetables, whole grains, and other healthful foods. For example, earmark increases in Food Stamp benefits for the purchase of healthful foods.
- Fund mass media health promotion campaigns that emphasize healthful eating and physical activity patterns.
- Levy city, state, or federal taxes on soft drinks and other foods high in calories, fat or sugar and low in nutrition to fund campaigns to promote healthful nutrition and physical activity.
- Subsidize the costs of lower calorie, high nutrition foods to encourage consumption of these items.
- Remove sales taxes on, or provide other incentives for, the purchase of exercise equipment.
- Declare and organize an annual National "No-TV" Week.

healthcare providers can:

- Receive education and training related to behavioral risks for obesity and poor health outcomes and counsel patients to bring about healthful behavior change. Less than half of obese adults report being advised to lose weight by a health care professional. Yet, those who are counseled to lose weight are three times more likely to try to lose weight.
- Counsel patients about the importance of incorporating physical activity into their daily lives and about healthful nutrition choices.

schools can:

- Monitor the foods provided for special occasions such as birthdays. Encourage healthful party foods and treats.
- Provide incentives and subsidies in school food programs to encourage purchasing healthful foods.
- Encourage and reward teachers and faculty to model healthful eating behaviors.
- Supply healthful foods for staff meetings and special events.
- Make regular physical activity available to all students.
- Limit time spent on computers and watching TV.

employers can:

- Institute campaigns to promote healthful eating and physical activity behaviors among federal and state employees and private sector worksites.
- Alter the worksite to promote physical activity.
  - Provide clean and safe stairwells and promote their use.
  - Provide worksite showers and lockers.
  - Provide bike racks in safe, convenient, accessible locations.
- Provide voluntary worksite fitness and weight-management programs.
- Offer confidential health risk appraisals to employees.
- Allow flexible work schedules so employees can exercise and/or participate in weight-loss programs.

know your body mass index

Body Mass Index (BMI) Table

BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
HEIGHT	WEIGHT IN POUNDS																
4'10" (58")	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
4'11" (59")	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
5' (60")	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
5'1" (61")	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
5'2" (62")	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
5'3" (63")	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
5'4" (64")	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
5'5" (65")	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
5'6" (66")	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
5'7" (67")	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
5'8" (68")	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
5'9" (69")	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
5'10" (70")	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
5'11" (71")	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
6' (72")	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
6'1" (73")	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
6'2" (74")	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
6'3"(75")	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279

Source: Evidence Report of Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults, 1998. NIH/National Heart, Lung, and Blood Institute (NHLBI). Centers for Disease Control and Prevention. United States Department of Health and Human Services.

BMI =
[weight in pounds ÷ height in inches ÷ height in inches] x 703

summary

One hundred years of public health interventions have shown that policies altering the social and physical environment to support positive behavior change have the greatest impact on improving positive health outcomes.

Such interventions must not only support healthful nutrition and regular physical activity, but also effectively counter or restrict the myriad incentives to over-consume and make poor nutrition choices. Such efforts will be more effective in controlling the obesity epidemic than those designed to persuade individuals to independently adopt good health behaviors. These efforts will result in reduced health care, insurance and treatment costs; a more productive work force; and ultimately, healthier Floridians.

references

Allison DB. Fontaine KR, Manson JE, Stevens J, VanItallie TB. Annual deaths attributable to obesity in the United States. JAMA 1999; 282(16): 1530-1538.

Barness L, ed. Pediatric nutrition handbook. 3d ed. Elk Grove Village, Ill.: American Academy of Pediatrics, 1993.

Battle EK, Brownell KD. Confronting a rising tide of eating disorders and obesity: treatment vs. prevention and policy. Addictive Behaviors 1996; 21(6): 755-765.

Burros M. Losing count of calories as plates fill up. New York Times 1997 Apr 2; Sect. C: 1,4.

Centers for Disease Control and Prevention. Guidelines for school health programs to promote lifelong healthy eating. MMWR 1996; 45 (No. RR-9): 1-41.

Centers for Disease Control and Prevention. Guidelines for school and community programs to promote lifelong physical activity among young people. MMWR 1997; 46 (RR-6): 1-42.

Centers for Disease Control and Prevention. Physical activity and good nutrition: essential elements for good health. 2000.

Centers for Disease Control and Prevention. Fact sheet: youth risk behavior trends from CDC's 1991, 1993, 1995, 1997 and 1999 YRBS Surveys. Atlanta, GA: U.S. Department of Health and Human Services; 2000.

Center for Science in the Public Interest. The pressure to eat. Why we're getting fatter. Nutrition Action Health Letter 1998; 25(6): 3-6.

Chiumello G, del Guercio MJ, Carnelutti M, Bidme G. Relationship between obesity, chemical diabetes, and beta pancreatic function in children. Diabetes 1969; 18: 234-43.

Dietz WH. Battling obesity: notes from the front. Chronic Disease Notes and Reports 2000; 13(1): 2.

Drash A. Relationship between diabetes mellitus and obesity in the child. Metabolism 1973; 22: 337-44.

Fontanarosa PB. Patients, physicians, and weight control. JAMA 1999; 282(16): 1581-1582.

Freedman DS, Dietz WH, Srinivasan SR, Berenson GS. The relation of overweight to cardiovascular risk factors among children and adolescents: the Bogalusa Heart Study. Pediatrics 1999; 103: 1175-82.

Gallo AE. The food marketing system in 1996. Agricultural Information Bulletin no. 743. Washington: Department of Agriculture (US); 1998.

Gov't & industry launch fruit and vegetable push; but NCI takes back seat. Nutr Week 1992; 22(26): 1-2.

Jacobson MF, Brownell KD. Small taxes on soft drinks and snack foods to promote health. Am J Public Health 2000; 90(6): 854-857.

Kuczmarski RJ, Ogden CL, Grummer-Strawn LM, et al. CDC growth charts: United States. Advance data from vital and health statistics; no. 314. Hyattsville, Maryland: National Center for Health Statistics. 2000.

Lauer RM, Conner WE, Leaverton PE, Reiter MA, Clarke WR. Coronary heart disease risk factors in school children. J Pediatr 1975; 86: 697-700.

Lin B, Frazao E. Nutritional quality of foods at and away from home. Food Review 1997; 20(2).

Lin B-H, Frazao E, Guthrie J. Away-from-home foods increasingly important to quality of American diet. Agricultural Information Bulletin no.749. Washington: Department of Agriculture (US); 1999.

Londe S, Bourgoine JJ, Robson AM, Goldring D. Hypertension in apparently normal children. J Pediatr 1971; 78: 569-75.

McGinnis M, Foege E. Actual causes of death in the United States. JAMA 1993; 27(18): 2207-2212.

Must A, Spadano J, Coakley EH, Field AE, Colditz G, Dietz WH. The disease burden associated with overweight and obesity. JAMA 1999; 282: 1523-1529.

Nestle M, Jacobson MF. Halting the obesity epidemic: a public health policy approach. Pub Health Reports 2000; 115: 12-24.

Partnership for Prevention. Priorities in prevention: excess weight and the obesity epidemic. June 2000.

Robinson TN. Reducing children's television viewing to prevent obesity. JAMA 1999; 282(16): 1561-1567.

Schimek P. Unpublished calculations from 1995 Nationwide Personal Transportation Survey. US Department of Transportation, Federal Highway Administration, Research and Technical Support Center. Lanham, Md: Federal Highway Administration; 1997.

Stine OC, Hepner R, Greenstreet R. Correlation of blood pressure with skinfold thickness and protein levels. Am J Dis Child 1975; 129: 905-11.

U.S. Department of Agriculture Food and Nutrition Service. Changing the Scene: Improving the School Nutrition Environment. September 2000.

U.S. Department of Health and Human Services. Healthy People 2010. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.

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

Wolf AM, Colditz GA. Current estimates of the economic cost of obesity in the United States. Obes Res. 1998; 6: 97-106.