

Texas Obesity Policy Portfolio 2006



**Texas Department of State Health Services
Center for Policy and Innovation**

Published with support from the Texas Health Foundation



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TEXAS DEPARTMENT OF STATE HEALTH SERVICES

EDUARDO J. SANCHEZ, M.D., M.P.H.
COMMISSIONER

1100 W. 49th Street • Austin, Texas 78756
1-888-963-7111 • <http://www.dshs.state.tx.us>

Dear Partner in Health:

We can no longer ignore the growing obesity epidemic in Texas. It will take all of us to make a difference in this problem from government to business and industry to community organizations like schools to our families. We must invest our time and energy and our resources if we are truly willing to do something about this urgent reality.

We must purposefully adopt effective and promising obesity prevention and control policies, which impact the problem, inform decision makers and leaders about the best available evidence and create an environment where the healthier choice is the easier choice. We can't afford to wait on funding alone to help solve this problem. And there is much we can do now in partnership together.

So how do we change the course of the obesity epidemic in Texas? The **Texas Obesity Policy Portfolio** is one tool we can use to influence the current trajectory of the obesity problem in Texas. This document chronicles our best health policy knowledge associated with obesity prevention and control. It reflects a common message generated by our academic centers, institutional and agency partners that we must work with the best available evidence to impact the problem and we must disseminate these policies and practices as quickly and as effectively as possible.

The Portfolio gives a range of referenced policy options from effective to untested, categorized by type of policy and identified for use in multiple sectors and settings. It serves as a starting point for policy development and implementation around which we can all rally.

Please join me and those who contributed to this body of knowledge in making obesity prevention and control a committed, sustained public health priority for the State.

In Partnership,

A handwritten signature in black ink, appearing to read "EJ Sanchez MD".

Eduardo J. Sanchez, MD, MPH
Commissioner of Health





Acknowledgements

Many thanks are extended to the Texas Health Foundation and to all of our academic and state agency partners. The cutting edge work of the Washington State Department of Health is also acknowledged and appreciated. A great deal of gratitude is extended to Boyd Swinburn and colleagues from the Center for Physical Activity and Nutrition Research at Deakin University in Melbourne, Australia, whose pioneering efforts in translating evidence into action were invaluable to the Texas Obesity Study Group's work. Without their efforts in describing the level of promise for categorizing potential policies, the Texas Obesity Policy Portfolio may not have come to fruition.

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Texas A&M Health Science Center, School of Rural Public Health

Kenneth R. McLeroy, Ph.D.
Associate Dean of Academic Affairs

Marcia Ory, Ph.D., M.P.H.
Professor, Department of Social Behavioral Health

Thomas Tai-Seale, Dr.P.H., M.P.H.
Assistant Professor, Department of Social Behavioral Health

University of North Texas Health Science Center, School of Public Health

Peter Hilsenrath, Ph.D.
Professor, Department of Health Management and Policy

The University of Texas at Austin

Robin Atwood, Ed.D.
Project Director, Department of Kinesiology and Health Education

Nell Gottlieb, Ph.D.
Professor, Department of Kinesiology and Health Education

David Warner, Ph.D.
Professor, LBJ School of Public Affairs

The University of Texas Health Science Center, School of Public Health

Steven H. Kelder, Ph.D., M.P.H.
Director, Center for Health Promotion and Prevention Research

Texas Department of Agriculture

Lisa Minton
Chief of Staff



Texas Department of State Health Services Leadership, Staff, and Interns

Donna Nichols, M.S.Ed., C.H.E.S.
Senior Prevention Policy Analyst
Center for Policy and Innovation
Texas Department of State Health Services

Kim Bandelier, M.P.H., R.D., L.D.
Program Coordinator
Nutrition, Physical Activity, and Obesity Prevention
Texas Department of State Health Services

Rick Danko, Dr.P.H.
Director
Center for Policy and Innovation
Texas Department of State Health Services

Eduardo J. Sanchez, M.D., M.P.H.
Texas Commissioner of Health
Texas Department of State Health Services

E. Michelle Baxter
Health Policy Intern
Center for Policy and Innovation
Texas Department of State Health Services

Gregory Boyer
Health Policy Intern
Center for Policy and Innovation
Texas Department of State Health Services

Ayanna Castro, M.P.H.
Health Policy Intern
Center for Policy and Innovation
Texas Department of State Health Services

Steven Chang
Public Health Intern
Texas Department of State Health Services

Haroon Samar, M.P.H.
Health Policy Intern
Center for Policy and Innovation
Texas Department of State Health Services



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Introduction

Introducing the *Texas Obesity Policy Portfolio*

So what's the big deal about overweight and obesity? Why should government be interested in this personal health issue and should government be the only actor in the campaign to reduce the size of our waists? Can we really influence health behavior and ultimately the health of our state?

Obesity has reached epidemic proportions in Texas. In this case bigger is not better. More than one in four, or 27 percent of Texas adults are obese, and more than one in three Texas children are overweight, increasing their chance of becoming obese adults by 25 to 50 percent.^{1, 4, 5} Texas is one of 13 states whose percentage of obese adults exceeds 25 percent, and these percentages are expected to increase.² Obesity is associated with health consequences such as heart disease, hypertension, various cancers, and diabetes, all of which can lead to premature death. Given the breadth of health implications associated with obesity, Texas has suffered heavy financial consequences, which have affected both the Texas economy and the health-care system.

Our physical health will impact our fiscal health. Cost data provided by the Phase I (see page 4) study report sounded the alarm for action. It was estimated that in 2001, overweight and obesity associated costs for Texas totaled \$10.5 billion. Based on 2001 cost estimates and percentages of overweight and obese Texans, it was projected that by 2040, overweight- and obesity-related costs could be as high as \$39 billion.⁴

It will take collaborative leadership and the commitment of health and business partners, communities, families and individuals alike to change the course of the obesity epidemic. To focus the state's direction, the Texas Commissioner of Health, Eduardo J. Sanchez, M.D., M.P.H., convened the Texas Obesity Study Group in 2003 to answer three key questions related to the obesity epidemic in Texas:

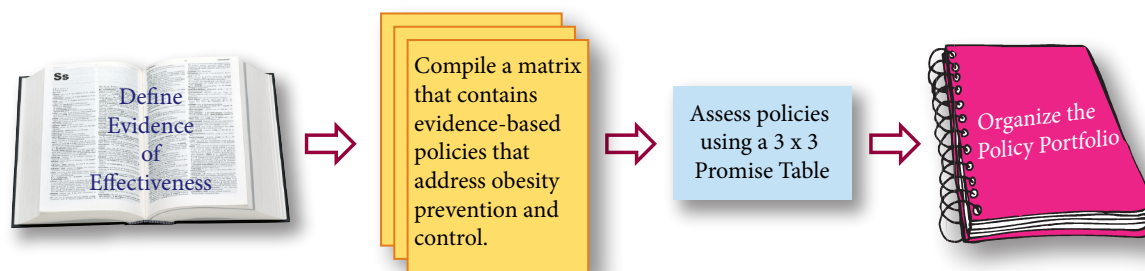
1. Phase I — What is the financial burden of overweight and obesity in Texas?
2. Phase II — What policy options do we have for changing the course of the obesity epidemic in Texas?
3. Phase III — What are the costs associated with these policy options?



While obesity can be attributed to individual characteristics, interactions with the larger social, cultural, and environmental contexts in which individuals live have a powerful influence and must be targeted to reinforce individual positive health behavior and to promote a culture of health. This document concentrates on the Phase II study question by focusing on evidence-based health policy, which is aimed at broad population groups.

We must act on best-available evidence and invest our resources where we can make a difference. Individual behavior change is difficult to achieve without addressing the context in which people make decisions. We know that sustained behavior change requires long-term strategies at both the individual and community level. The Texas Obesity Study Group created the *Texas Obesity Policy Portfolio* (the *Portfolio*) to offer policy options to decision-makers and community leaders. All policies included in the *Portfolio* were selected based on evidence of effectiveness. The steps involved in the creation of the *Portfolio* led to the formation of a portfolio, which spans across all life stages, sectors and settings, and which aims to influence the adoption of healthy behaviors.

Figure 1. Steps to the Creation of the *Texas Obesity Policy Portfolio*



While many questions remain to be answered around effective approaches to obesity prevention and control, there is much we can do together to make a difference in the health of our community and our state. The *Portfolio* is one tool we can use to galvanize commitment to the issue and to mobilize our communities around effective policy options. **The *Portfolio* is a starting point for decision making not an end point.** It should be considered a living, breathing document that will continue to build on evidence and new insights over time. Conceived by the Texas Obesity Study Group, the *Portfolio* offers policy-makers and leaders at the state, local, and private jurisdictions a comprehensive guide to prioritizing and adopting policies within the context of the communities in which Texans live, play, work, and go to school.



Background

Making the Case for Obesity Prevention and Control Policy

More than one in four, or 27 percent of Texas adults are obese.¹ According to the 2006 Trust for America's Health report, *F as in Fat: How Obesity Policies are Failing in America*, Texas is one of 13 states whose percentage of obese adults exceeds 25 percent.² Weight standards are most commonly derived from the measurement of an individual's body mass index (BMI), which correlates to the amount of body fat in the average individual. BMI is calculated by finding the ratio of weight to height ($wt/[ht]^2$). A healthy BMI for most adults is between 18.5 and 24.9. Adults who have a BMI between 25 and 29.9 are typically overweight, and those who have a BMI of 30 or higher are considered obese.³

Figure 2.^{2,3} Standard Weight Status Categories Associated with BMI Ranges for Adults

Weight Status	BMI range = $\frac{\text{(weight in pounds)}}{\text{(height in inches)} \times \text{(height in inches)}} \times (703)$
Normal	18.5–24.9
Overweight	25–29.9
Obese	30 or higher

According to 2005 data, 64.1 percent of adults in Texas are overweight or obese.¹ Rates of overweight and obesity are not only a concern for the adult population but for children as well.

Approximately one in three, or 35 percent of Texas school-age children are overweight.⁴ Percentages this high are alarming because overweight children have a 25 to 50 percent chance of progression to adult obesity and it may be as high as 78 percent in overweight adolescents.⁵

Trends indicate that between 1991 and 2001, the obesity rate among adults in Texas almost doubled from 13 percent to 25 percent.⁴ It is projected that by 2040, the percentage of obese adult Texans will jump to 35.2 percent.⁴ These statistics illustrate how rapidly the obesity epidemic is growing in Texas and will continue to grow if policy actions are not taken at the community, state, and national levels.

Overweight and obesity are associated with morbidity and premature death. Health implications of overweight and obesity include:⁴



- Coronary heart disease
- Ischemic stroke
- Congestive heart failure
- Hypertension
- Hypercholesterolemia
- Type II diabetes
- Osteoarthritis
- Cancers: cervix, colon, endometrial, gallbladder, kidney, ovary, and postmenopausal breast cancer

Given the breadth of health implications associated with overweight and obesity, Texas has suffered heavy financial consequences that have affected both the Texas economy and the health-care system.

In 2003 the Texas Commissioner of Health, Eduardo J. Sanchez, M.D., M.P.H., convened a Texas Obesity Study Group to begin to address the costs associated with obesity and to compile evidence-based policy options, as a means to prevent and control obesity in the state. Three key questions guide the work of the study group and have resulted in three distinct phases of study, two of which have now been completed:

1. Phase I — What is the financial burden of overweight and obesity in Texas?
2. Phase II — What policy options do we have for changing the course of the obesity epidemic in Texas?
3. Phase III — What are the cost associated with these policy options?

Phase I Study Question: What is the financial burden of overweight and obesity in Texas?

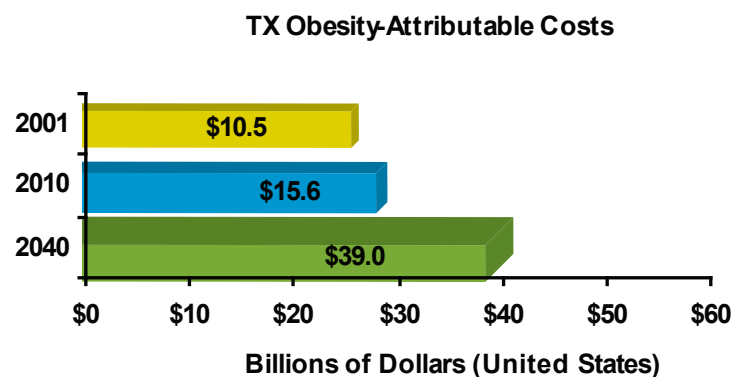
To answer this question, the Texas Department of Health published a report in 2004 titled, *The Burden of Overweight and Obesity in Texas 2000-2040*, (http://www.dshs.state.tx.us/phn/pdf/Cost_Obesity_Report.pdf) with financial support from the Texas Medical Association and the Texas Department of Agriculture Food and Nutrition Division. Phase I study group members included:

- Texas Commissioner of Health, Texas Department of Health
- Texas Commissioner of Agriculture, Texas Department of Agriculture
- Investigators from the Texas State Data Center and Office of the State Demographers at the Institute for Demographic and Socioeconomic Research, The University of Texas at San Antonio
- Policy analysts and program and center directors from the Texas Department of State Health Services
- Academic leaders for The University of Texas Health Science Center, School of Public Health in Houston
- Academic leaders from the University of North Texas Health Science Center
- Academic leaders from The University of Texas Lyndon Baines Johnson School of Public Affairs



Estimates and projections were made for the years 2001 to 2040 to quantify the financial burden of the obesity epidemic in Texas. The report sounds the alarm on the overweight and obesity epidemic and encourages action by decision-makers, advocates, and policy-makers. Projections of direct costs such as health-care expenditures and indirect costs such as lost productivity were completed using data provided by the Texas State Data Center in the Institute for Demographic and Socioeconomic Research at The University of Texas at San Antonio. Weight status prevalence data was collected by the Texas Behavioral Risk Factor Surveillance System.⁴ It was estimated that in 2001, overweight- and obesity-associated costs for Texas totaled \$10.5 billion. This amount is comparable to the \$10 billion dollars that tobacco-related diseases cost the state of Texas in 1999.⁶ In response to the tobacco cost burden, \$12.5 million per year was appropriated by the 77th Legislature to expand tobacco-use prevention and cessation.⁷ Similar attention must be given to the obesity epidemic. **Based on 2001 cost estimates and percentages of overweight and obese Texans, it was projected that by 2040, overweight- and obesity-attributable costs could be as high as \$39 billion.**⁴ Figure 2 depicts the projected growth in obesity-attributable costs from 2001 to 2040.

Figure 2 .⁴ The Burden of Overweight and Obesity in Texas 2001–2040 — Projected Figures



Phase II Study Question: What policy options do we have for changing the course of the obesity epidemic in Texas?

Cost data provided by the Phase I report, *The Burden of Overweight and Obesity Report* indicates that action is needed to respond to this statewide epidemic. The purpose of this Phase II report is to determine which policy options can serve as driving forces in changing the course of the obesity epidemic in Texas. The *Portfolio* can be used by decision-makers in various settings and sectors and is considered to be a living, breathing document, which will need to be updated as new policy research is conducted and translated into action. This document represents the best intelligence and consensus on the obesity issue as identified, by the Texas Obesity Study Group members. Phase II Study Group members included:

- Texas Commissioner of Health, Texas Department of State Health Services
- Policy analysts and program and center directors from the Texas Department of State Health Services
- Department administrators from the Texas Department of Agriculture



- Academic leaders for The University of Texas Health Science Center, School of Public Health in Houston
- Academic leaders from the Texas A&M Health Science Center, School of Rural Public Health
- Academic leaders from the Department of Kinesiology, The University of Texas at Austin
- Academic leaders from the University of North Texas Health Science Center
- Academic leaders from The University of Texas Lyndon Baines Johnson School of Public Affairs

The individuals involved in the study group contributed obesity research knowledge as well as program and policy expertise in the development of the *Portfolio*. The first step for the Phase II Texas Obesity Study Group involved creating a focal point, which would serve as the foundation for obesity prevention policy.

Creating a Focal Point: Societal and Environmental Influences

Healthy eating, physical activity, and an overall balance of energy intake and expenditure can impact weight status. Energy intake and expenditure most commonly refer to a person’s food consumption and physical activity. Efforts to improve weight status have traditionally focused on individual behavioral change and clinical intervention. Agencies such as the World Health Organization, the USDA Dietary Guidelines Advisory Committee, and the Institute of Medicine have offered individual-level recommendations for weight loss and obesity prevention. Some of the most consistent recommendations are included in figure 4. “Appendix A” outlines these recommendations in greater detail.

Figure 4.⁸

Recommendations for Adult Weight Loss and Obesity Prevention
<ul style="list-style-type: none"> • Eat a variety of foods including fruits and vegetables. • Reduce intake of sweetened soft drinks, juices, and alcohol. • Reduce caloric intake by 50 to 100 calories per day to prevent weight gain. • If overweight or obese, reduce caloric intake 500 to 1000 calories per day. • Eat less foods high in fat, sugar, or refined starch. • Eat more foods high in fiber (lentils, beans, collard greens, bran, raspberries). • Reduce portion size. • Gradually increase physical activity to at least 60 minutes a day to lose and maintain weight. • Reduce sedentary behavior.

Public health is about keeping people well, but includes efforts to reduce disability and increase quality of life. In addition to its emphasis on prevention, public health focuses our attention on working with populations of people, including families, neighborhoods, and communities, not just individuals. Such population-based approaches are most effective if coupled with societal reinforcement. **Changes at the individual and population level, as well as societal reinforcement, are key to reducing the prevalence of overweight and obesity in Texas.**

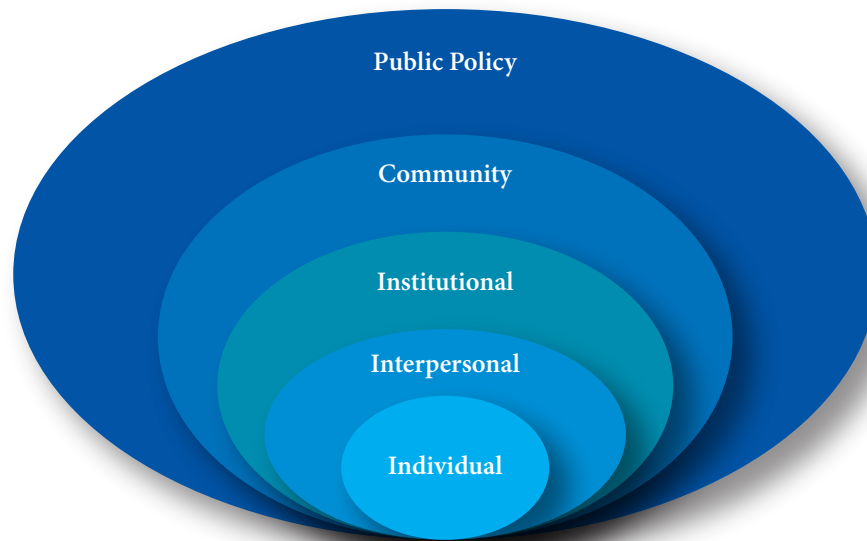


This document focuses on the prevention of obesity. Public health is about the prevention of disease, while medicine and many of the health professions focus on the treatment of disease.

The social-ecological model, which is made up of five interdependent spheres, is used to understand all factors which support or hinder positive health behavior. In addition to the individual sphere, the model includes interpersonal, institutional, community, and public policy influences.

Figure 5.9 Social-Ecological Model

Social-Ecological Model



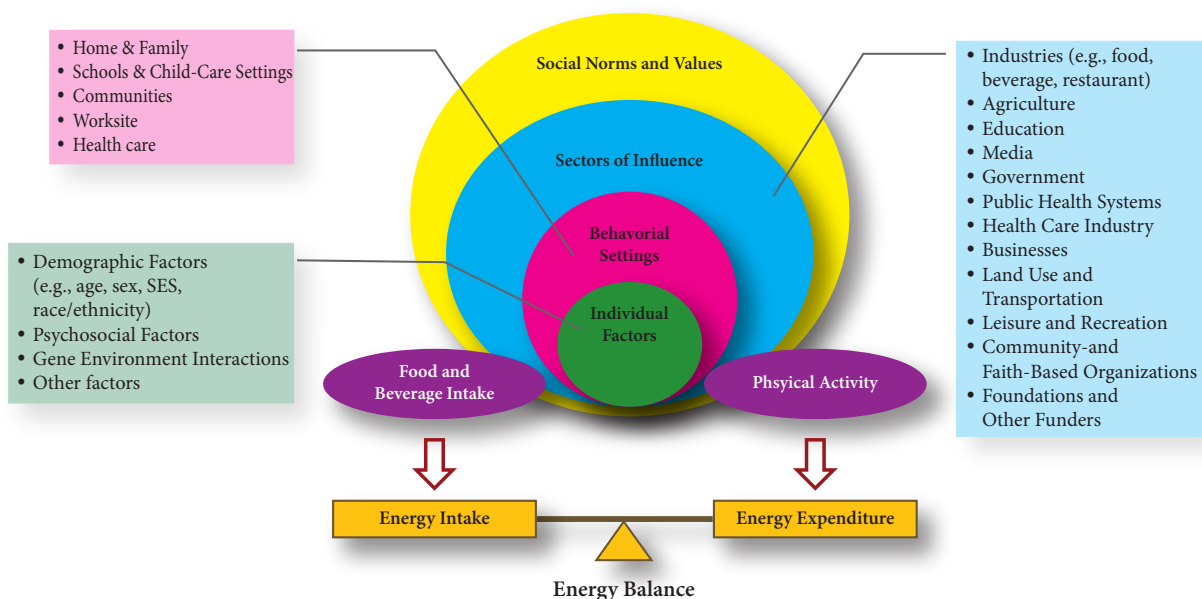
The social-ecological model suggests that changes in individual characteristics are affected not only by personal factors (e.g., age, gender, genetic profile, values) but also by interactions with the larger social, cultural, and environmental contexts in which they live (e.g., family, school, community, physical environment).⁹ Personal factors that predispose a person to becoming overweight or obese are difficult to control or overcome, and are typically addressed directly to the individual at risk. On the contrary, environmental and social factors that support or hinder healthy decisions can be addressed by decision-makers and targeted through population-based interventions.

In 2004, the Institute of Medicine (IOM) in collaboration with the National Academy of Science formed a committee of national experts to provide recommendations for preventing childhood obesity and released a report titled, *Preventing Childhood Obesity: Health in Balance*. The subsequent 2006 IOM report focused on the evaluation of actions taken by all sectors of society and described the progress made on the first report's recommendations.¹⁰ The IOM committee developed a model to aid in describing the complexity of the obesity epidemic. The model (figure 5) builds on the social-ecological model and includes individual- and population-related factors that influence an individual's energy balance. Energy balance refers to a state in which energy intake is equivalent to energy expenditure, resulting in no net weight gain or weight loss.¹¹



Figure 6.¹⁰ Energy Balance

Comprehensive Approach for Preventing and Addressing Childhood Obesity



This model illustrates that behavioral settings including homes, schools, worksites, and communities have a direct effect on individual health behavior and suggests that individual-level intervention needs to be supplemented with population-level intervention. Sectors of influence such as food industries, agriculture, education, media, government, public health, health care, land use, transportation, leisure and recreation, are identified as leverage points for changing the course of the obesity epidemic. These leverage points can be modified through policy development to establish healthy social norms and beliefs, thus helping individuals maintain positive health-behavior change. The Texas Obesity Study Group chose the IOM model and the social ecological model as focal points because they address the multiple influences of the obesity epidemic, thereby recognizing the obesity epidemic as a complex, multi-factorial problem requiring multiple policy options, which touch every setting and sector where we live, work, play, pray, and go to school.

Demonstrating the Point: A Community Prevention Policy Example

Meet Jonathan M, also known as J. He is a 10-year-old boy who lives at home with his mother, grandfather, and two sisters. J’s father passed away when he was 5, so his mother supports the family by waking up at 5 a.m. to work two jobs. His mother is usually exhausted by the time she gets home at 6 p.m. A typical day for J and his sisters includes time at school, their urban neighborhood, their place of worship, and at home. J’s grandfather spends most of the day at home, and occasionally goes to the senior center when they have special events.

Now, imagine a day in the life of the M family, and consider the choices that J and his family make regarding nutrition and physical activity, and how these choices are influenced by the obesity-prevention policies that exist in the community in which they live. Figure 7 follows the M family as they experience a typical day in each of the three communities listed. Here’s how



some of the obesity-prevention policies included in the *Portfolio* can play an important role in supporting healthy behavior.

Figure 7. Supporting Healthy Behaviors in the Community through Obesity Policy

Obesity Prevention Policy	Community A	Community B	Community C
Require physical activity curriculum to provide moderate to intense physical activity in schools to increase fitness levels.	X	X	✓
	The M children do not get any physical activity during the eight hours at school.	The M children do not get any physical activity during the eight hours at school.	The M children get regular physical activity and are fit and ready for school.
Implement traffic-calming measures for safer pedestrian and cycling areas. Increase sidewalks, lighting, and single lane roundabouts.	X	✓	✓
	The M children have to carpool with classmates and don't get to walk home or play outside after school.	The M children walk 15 minutes home safely and are able to play outside after school.	The M children walk 15 minutes home safely and are able to play outside after school.
Work with caregivers to initiate appropriate after-school care exercise/activities and programs, and put other community-based programs in place to influence weight-related behavior.	X	X	✓
	The M children attend an after-school program at their place of worship that includes homework and sugar-laden snacks. J's grandfather waits for the family at home while watching his favorite TV shows.	The M children attend an after-school program at their place of worship that includes homework and sugar-laden snacks. J's grandfather waits for the family at home while watching his favorite TV shows.	The M children attend an after-school program at their place of worship that includes time for physical activity, homework and healthy snacks. J's grandfather attends afternoon social and physical activity events at the senior center.
Include a wellness program, with a substantial physical activity component as part of the employee benefit package.	X	✓	✓
	J's mother does not have access to a wellness program that includes physical activity at her job or in her neighborhood. She does not exercise regularly and her children view this as normal.	J's mother has access to a wellness program that includes a physical activity component at her job. J and his sisters are aware that their mother exercises regularly and view this as normal thus increasing the likelihood that they will exercise regularly.	J's mother has access to a wellness program that includes a physical activity component at her job. J and his sisters are aware that their mother exercises regularly and view this as normal thus increasing the likelihood that they will exercise regularly.
Implement food pricing strategies that encourage buying healthy foods by raising the price for fatty foods and lowering the price for healthier foods within 5 percent of projected revenues.	X	X	✓
	J's mother saves money by buying highly processed foods that are cheaper. The M family does not eat well-balanced, healthy meals at home because all they have is what their mother can buy on her way home at the local neighborhood market.	J's mother saves money by buying highly processed foods that are cheaper. The M family does not eat well-balanced, healthy meals at home because all they have is what their mother can buy on her way home at the local neighborhood market.	J's mother is able to afford healthier food options and the M family is able to eat well-balanced, healthy meals at home.

X — Denotes that the obesity-prevention policy listed does not exist in that particular community

✓ — indicates that the obesity-prevention policy listed does exist in that particular community.



Community C illustrates how obesity-prevention policies can influence the health of families and individuals at schools, workplaces, places of worship, and the community environment. Community C provides J and his family with the greatest opportunity for increased physical activity and incentive to eat healthier foods, thus reinforcing such positive health behaviors. Increased physical activity and well-balanced meals can prevent and control overweight and obesity. Comprehensive policy interventions across all sectors and settings can facilitate making healthier choices, thereby creating social norms and a culture for health.

Overweight and obesity issues span across all age groups and life stages; therefore, interventions must be comprehensive in nature and address children, adolescents, adults, and the elderly. A comprehensive community approach involves interventions within an array of settings including children and adult day-care centers, schools, universities, worksites, and other community organizations like the Boys and Girls Club and fitness centers. Obesity-prevention policies can transform causative social factors into factors that are more protective against obesity and supportive of positive health behaviors.

Transforming Evidence into Action: The Texas Obesity Study Group Platform

Study group efforts were concentrated on identifying a framework for moving evidence into action. The framework involved four steps that led to the creation of a portfolio containing evidence-based obesity policy options (see figure 1, page 2).

Evidence of Effectiveness

Given the challenge of developing a plan of action, the study group first made sure that there was a clear and consistent definition for *evidence of effectiveness* as applied to a policy intervention, which could be agreed upon by all study group members. In an effort to define *evidence of effectiveness* the study group referenced definitions from leading organizations and authorities as documented in "Appendix B." Based on these findings, the study group focused on *evidence of effectiveness* as defined by Swinburn, New South Wales, and Washington State.^{5, 9, 12, 13}

When looking for evidence, it is important to consider what affects the current selection of evidence-based policy solutions. According to Swinburn and colleagues, there are three main inhibitors to developing evidence-based policy solutions for obesity:¹²

1. The urgent call for action, now, has come before the development of a strong evidence base.
2. Many solutions seem idealistic, expensive, and are strongly opposed by stakeholders.
3. The results of current preventive interventions are not easily or quickly assessed.

Thus, courses of action to prevent obesity should be evidence-based and this means using the "best evidence available," as distinct from the "best evidence possible."¹⁴



Evidence can be considered to be a body of facts, information, or data that provides a level of certainty that a proposition is true or valid.¹⁵ In recent years, the push to increase the effectiveness and efficiency of medical treatments has led researchers to explore the role of evidence in decision making. Evidence-based medicine (EBM) is making decisions based on research and demonstrated effectiveness and efficiency.¹² This attention to measuring quality of interventions has led researchers to randomized controlled trials (RCT) because of their increased internal validity.¹⁶

As EBM has grown in use, public health researchers have begun to explore an evidence base for public health. As prevention methods have evolved, *evidence-based public health* has become the goal when developing policy options.¹⁶

Randomized controlled trials, the gold standard for EBM, fall short as the standard bearer for public health interventions because of their limited usability. Public health interventions in community settings are complicated by the uncontrolled variables that influence and confound the outcome. The evidence base for public health must cast a larger net and incorporate various types of evidence. **The evidence base for obesity prevention needs many different types of evidence and often needs the informed opinions of stakeholders to ensure external validity and contextual relevance.**¹²

A similar framework known as RE-AIM by Dzewaltowski and colleagues estimates and evaluates the impact of public health interventions by considering evidence of five factors.^{17, 18} They are:

- R — reach
- E — efficacy/effectiveness
- A — adoption
- I — implementation
- M — maintenance

The RE-AIM framework addresses issues such as the generalizability of an intervention to the target population (external validity), breadth of application, and contextual issues, while evaluating evidence-based interventions. This framework and the work of Swinburn and colleagues support the Obesity Study Group's methodology for the creation of a portfolio of evidence-based obesity policies.

Swinburn and colleagues list the following as types of evidence relevant to obesity prevention in population settings:¹²

1. Observational epidemiology,
2. Experimental Studies,
3. Program/Policy evaluations,
4. Extrapolated analyses measuring effectiveness and cost, and
5. Evidence derived from experience such as theory and program logic, informed opinion, and the use of previously employed strategies for changing health-related behaviors.



No hierarchy of evidence quality is offered for these types of evidence because their intrinsic strengths and weaknesses play out differently in each of the different questions posed for obesity prevention. The RCT, therefore, sits alongside other forms of evidence and each is judged on its ability to contribute to answering the question at hand.

The outputs include the descriptions of specific programs, policies, or other actions that could be undertaken to prevent unhealthy weight gain.

Once a definition was completed for *evidence of effectiveness*, the group identified possible policy options to be implemented in Texas and sought the evidence to support a portfolio of such. Discussions led the study group to adopt a decision-making framework based on the ideas outlined by Swinburn and the International Obesity Task Force.

The Matrix and Promise Table

Health promotion planning principles were used to classify interventions to form a matrix. Data for the matrix was gathered from academic literature and Internet searches. A theoretical understanding of the social-ecological model supported data for the matrix. The matrix was created to support a comprehensive approach to reducing the cost burden of obesity in Texas with an emphasis on schools, worksites, health-care practice settings, and communities across the lifespan (“Appendix C”).

In an effort to be inclusive, policy options were defined by age groups (from infants to the elderly), given obesity is not an age-discriminatory disease. Policy options outlined in the matrix were also organized by the settings in which they were implemented. These settings include: federal and state, media, schools, faith-based organizations, cities/counties, worksites, and health-care settings. Thus, the matrix became the core comprehensive document from which the *Portfolio* originated. The obesity study group compiled the matrix from a research base in obesity policy that began in 2000. The matrix provided the study group with a clear picture of research gaps in the knowledge base including areas where further research is needed and where there are opportunities for translation. **This best-available evidence provided the genesis for the *Portfolio*.**

Policies were assessed by potential population impact and the certainty of effectiveness.

- a. **Potential population impact** in Texas communities was determined by:¹²
 - i. Efficacy — Impact of a policy under ideal conditions
 - ii. Reach — The proportion of relevant settings in which the policy of program is instituted
 - iii. Adoption — the uptake by individuals in the settings



b. Determination of the **certainty of effectiveness** that the evidence-based policies and programs would have in Texas were based on:¹²

- i. Quality of evidence
- ii. Strength of intervention logic
- iii. Sensitivity and uncertainty parameters in the modeling of the population impact

Once the level of population impact and certainty of evidence was determined, the “3 X 3 Promise Table” was used to assign a level of “promise” (high, medium, or low) to each policy option. **A policy that was determined to have a high certainty of effectiveness and a high potential for population impact was categorized as “most promising.” On the other hand, a policy that was determined to have a low certainty of effectiveness and a low potential for population impact, was categorized as “least promising.”** Figure 8 shows how policies can also be characterized from least promising to most promising. The “3 X 3 Promise Table” was used as a benchmark to categorize potential obesity policies because of its degree of specificity.

Figure 8.¹² Promise Table for Categorizing Potential Interventions

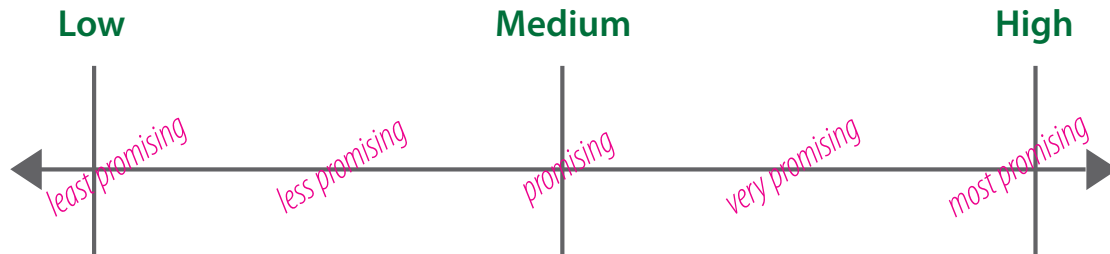
Certainty of Effectiveness	Potential Population Impact		
	<i>Low</i>	<i>Moderate</i>	<i>High</i>
<i>Quite high</i>	Promising	Very promising	Most promising
<i>Medium</i>	Less promising	Promising	Very promising
<i>Quite low</i>	Least promising	Less promising	Promising

While these levels of promise provided greater detail, it was in the interest of simplicity that the Texas Obesity Study Group adopted the Washington State Department of Health’s policy portfolio classification system. Washington State classifies policies as effective, promising, or untested. Figure 9 on page 14 shows the parallel between the scale of effectiveness proposed by Swinburn and by Washington State.



Figure 9. Classification of Obesity Policies

3x3 Promise Table Classification of Obesity Policies



Washington State Department of Health Classification of Obesity Policies



Portfolio of Options

The final product developed by the Texas Obesity Study Group was a portfolio containing current and proposed evidence-based policy options along with their respective levels of effectiveness (untested, promising, effective). A portfolio that includes various levels of interventions provides a basis for a comprehensive approach to decision making.

It is important to recognize that effective action on obesity will not be achieved by a single intervention. Therefore, a set of policy options that individually produce only a modest affect on energy balance may make an important contribution when combined with broader policy options. **It may be possible to develop a detailed “menu” of such policy options, but it is important to realize that what is**



developed for one population may not apply to another due to the wide range of contextual factors that influence these policy options.¹²

Currently, obesity prevention and control efforts are frequently incomplete, uncoordinated, unevaluated and often not sustainable.¹⁹ Limitations of obesity research include:¹⁹

1. A lack of evidenced-based research to form the basis for health policy
2. Useful interventions which are not being properly evaluated
3. Interventions which are not prevention and population focused

Although it is clear that remedies will need to involve policies that change the relevant societal and environmental drivers in a direction that promotes healthy population weights, the ways to do this are not straightforward.¹²

The lack of a scientifically sound examination of obesity may have an impact on the absence of actions taken to combat the problem. This issue is a complex one and has resulted in policy paralysis and needs more solid scientific research. Individuals and communities have been left with insufficient and occasionally conflicting information about the magnitude of the problem and methods to manage their health.²

Based on these limitations, The Texas Obesity Study Group chose to develop an evidence-based portfolio of policy options. The purpose of this portfolio is to provide a “menu” of policy interventions, which stakeholders and leaders can choose to implement in their respective sector or setting. The nutrition and physical activity policies are categorized and the sector or setting for each policy is defined. Policy options can be implemented at the federal, state, local, and county levels, as well as through media outlets, schools, worksites, faith-based organizations, and health-care settings. For each policy, the level of effectiveness is provided as determined by the “3 x 3 Promise Table” with referenced evidence given per policy option.

The *Portfolio* serves to guide decision making in obesity prevention and control by recognizing both the value and the limitation of existing evidence and integrating other key consideration in determining action on obesity.¹² Because the *Portfolio* spans a multitude of settings and sectors and is evidence-based and explicit, the policy options provided have a higher chance of actually being implemented and sustained.¹²

How does a Community Leader use the *Texas Obesity Policy Portfolio*?

Community leaders have the task of deciding which policy options will work best for their respective communities. Policy options can be implemented at the federal, state, local, or county level, and through media, schools, worksites, faith-based organization, or at health-care settings.

The *Portfolio* serves as a guide and a starting point for policy adoption.

The first step in policy development and implementation is first understanding the scope of the



problem. A community assessment completed by key stakeholders will serve this purpose and should answer questions such as:

- What is the burden of this particular disease in this community?
- What is the level of urgency?
- What is the perceived need in this community?

Once a community assessment is complete, policy options need to be prioritized based on importance and feasibility. Determining the feasibility of a policy option involves taking into account the political environment and the practicality of, and potential barriers to, policy implementation.

The selection of policy options requires assessment of cost-utility, effectiveness and implementation implications. The filter criteria in figure 10 developed by Swinburn and colleagues can guide how policy options can be implemented in a given community. The *Texas Obesity Policy Portfolio* provides policy-makers at the state, local, and private jurisdiction a comprehensive guide to prioritizing and adopting policies that will be most effective in Texas communities.

Figure 10.¹² Suggested Filter Criteria for Stakeholder Judgments on Implementation

Filter Criteria	Description
Feasibility	The ease of implementation considering such factors as the availability of a trained workforce; the strength of the organizations, networks, systems and leadership involved; existing pilot or demonstration programs.
Sustainability	The durability of the intervention considering such factors as the degree of environmental or structural change; the level of policy support; the likelihood of behaviors, practices, attitudes, etc. becoming normalized; the level of ongoing funding support needed.
Effects on equity	The likelihood that the intervention will affect the inequalities in the distribution of obesity in relation to socioeconomic status, ethnicity, locality, and gender.
Potential side effects	The potential for the intervention to result in positive or negative side effects such as on other health consequences, stigmatization, the environment, social capital, traffic congestion, household costs, other economic consequences.
Acceptability to stakeholders	The degree of acceptance of the intervention by the various stakeholders including parents and caretakers, teachers, health-care professionals, the general community, policy-makers, the private sector, government, and other third-party funders.



Texas Obesity Policy Portfolio

The *Texas Obesity Policy Portfolio* is a compilation of current and proposed *evidence-based* obesity policy options along with their respective levels of effectiveness (untested, promising, effective). This portfolio serves as a guide and a starting point for policy adoption and includes various levels of intervention (varying levels of effectiveness and various sectors and settings for implementation), thus providing a basis for a comprehensive approach to decision-making. The policies included in the *Portfolio* are listed under one or more of the following policy categories:

- Healthy food
- Recreation
- Breastfeeding
- Built Environment
- City Planning/Transportation
- Education
- Media
- Industry
- Wellness

An “X” in the table beginning on page 19 denotes the sector or setting in which a policy option can be adopted. Each policy option can be adopted and implemented in at least one of the following sectors or settings:

- Federal/State
- Media
- Schools
- Faith-based organizations
- City
- County
- Worksites
- Health care



The evidence legend identifies and cross references the evidence found in “Appendix C: Texas Obesity Policy Matrix Conceptual Framework.” The cited references on the portfolio can be found on page 57–67.





Texas Obesity Policy Portfolio										
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Worksites	Health Care	Evidence		Level of Effectiveness
Healthy Food Policies										
Allocate funding for the expansion of the WIC farmers' market program.	X		X					Farmers' market coupons increase fruit and vegetable consumption. ^{\$5}	Effective	
Allocate for the expansion of the senior farmers' market nutritional program.	X		X					Providing farmers' market coupons increases fruit and vegetable consumption. ^{\$5}	Effective	
Implement food-pricing strategies that encourage buying healthy foods.	X		X		X	X		Studies have shown that raising the price of fatty foods and lowering the price of healthier foods kept within five percent of projected revenues. ^{\$5}	Effective	
Allocate funding to provide equipment to use electronic methods of payment at farmers' markets.	X				X			Allowing electronic methods of payment at farmers' markets should increase the amount of healthy food bought by users of food stamp programs such as the Lone Star Card. ^{\$5}	Promising	
Provide incentives for grocery stores and/or farmers' markets to locate in underserved areas.	X				X			Due to the fact that there are fewer grocery stores in low-income communities, there are fewer opportunities to buy healthy food. Fewer number of places to buy healthy food leads to poor dietary quality, but locating better retailers in underserved areas can increase fruit and vegetable consumption. ^{\$5}	Promising	
Provide or subsidize transportation to farmers' markets and grocery stores.	X				X	X		Due to a variety of factors, individuals who live in low-income areas have less access to grocery stores. ^{\$5}	Promising	
Prohibit the sale of food that competes with the national school breakfast and lunch programs.	X		X		X			Students who participate in these programs have more access to key nutrients due to the nutritional constraints. Students who have access to à la carte, snack bar, and vending machine items eat fewer fruits and vegetables than those who do not. ^{\$5}	Promising	
Mandate salad bars in all schools.	X		X		X			Schools that offer salad bars have students who consume more fruits and vegetables, as well as have higher program participation rates, than those that do not. ^{\$5, \$5, \$10}	Promising	
Mandate the development and execution of nutritional standards for preschools and day cares so that food and drinks available comply with the Dietary Guidelines for Americans or equivalent standards.	X				X			Older students who have greater access to unhealthy foods consume less fruits and vegetables than those who do not have access to unhealthy food. ^{\$5, \$53, \$1, \$10}	Promising	

Evidence Legend — S - School, FS - Federal/State, CCG - City and county government, W - Worksite, H - Health care, M - Media, FB - Faith-based organizations, SS - All sectors and settings.

Effective policy options — a policy option or the environmental change the policy is meant to bring about was tested in one or more well-designed scientific studies and found to affect nutrition and/or physical activity behavior.⁹

Promising policy options — the rationale supporting the policy option or the specific policy approach was tested in one or more well-designed scientific studies and results of effectiveness are ongoing.⁹

Untested policy options — policy options, which are potentially great ideas, but are untested or are shown to not have definitive results.⁹



Texas Obesity Policy Portfolio									
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Worksites	Health Care	Evidence	Level of Effectiveness
Mandate the development and execution of nutritional standards so all food sold on school campuses is consistent with a set of standards.	X		X		X			Students who participate in the national school breakfast and lunch programs have more access to key nutrients due to the nutritional constraints. Students who have access to à la carte, snack bar, and vending machine items eat fewer fruits and vegetables than those who do not. ^{SS, S10}	Promising
Provide free breakfast and/or lunch to all students, regardless of their eligibility.	X		X		X			Students who participate in the national school breakfast and lunch programs have more access to key nutrients due to the nutritional constraints. Students who have access to à la carte, snack bar, and vending machine items eat fewer fruits and vegetables than those who do not. Also, students who are entitled to receive free or reduced-price meals are more likely to participate in the program. ^{S5}	Promising
Require a certain percentage of food sold in cafeterias and vending machines, and other sources of food, meet certain agreed upon guidelines.	X		X		X	X		The absence of healthy food is a large obstacle to eating healthy. Offering a myriad of healthy food as well as providing education, health promotion, and price incentives will affect food selection. ^{SS, W2, W8}	Promising
Create hospital policies that a certain percentage of meals and other food offered will meet certain agreed upon guidelines.	X				X	X	X	Offering a variety of food, along with the appropriate education, health promotion, and/or price incentives will positively affect food selection. ^{S5}	Promising
Implement a sales tax for foods that have minimal nutritional value.	X							A small tax can raise substantial revenue and impede eating unhealthy foods. This policy is similar to taxes on tobacco and alcohol which can influence amounts of consumption. ^{S5}	Promising
Account for health by developing a health knowledge-base.	X							Developing a health knowledge-base will bring attention to the many influences over a person's health which will curb overweight and obesity. ^{F51}	Promising
Create tax incentives to encourage smaller store owners in underserved areas to provide healthier food items.	X				X			Providing incentives to small food stores, which typically have less healthy food, will encourage stores to provide healthier food choices. ^{SS, F57}	Untested
Provide free services such as water, waste disposal, and other municipal resources to community gardens.					X			Treating community gardens like other recreational activities could foster greater use. Gardens can enhance physical activity as well as fruit and vegetable consumption. ^{S5}	Untested
In the comprehensive plan for cities, provide incentives for community gardens on public and/or private land.					X			Planting community gardens can enhance both physical activity as well as fruit and vegetable consumption. ^{S5}	Untested

Evidence Legend — **S** - School, **FS** - Federal/State, **CCG** - City and county government, **W** - Worksite, **H** - Health care, **M** - Media, **FB** - Faith-based organizations, **SS** - All sectors and settings.

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Promising policy options — the rationale supporting the policy option or the specific policy approach was tested in one or more well-designed scientific studies and results of effectiveness are ongoing.⁹

Untested policy options — policy options, which are potentially great ideas, but are untested or are shown to not have definitive results.⁹



Texas Obesity Policy Portfolio										
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Worksites	Health Care	Evidence	Level of Effectiveness	
Require all food purchased with government funds meet certain agreed-upon nutritional standards.	X				X			Government funds can support healthier eating through requirements such as these. ^{55,51}	Untested	
Provide additional funding for the expansion of the Summer Food Service Program for children.	X				X			Providing additional state funding for support of the Summer Food Service Program will increase the likelihood of food security for low-income children. ⁵⁵	Untested	
Prohibit or set restrictions on marketing contracts between schools and soda companies.	X		X		X			Prohibiting or limiting exclusive contracts discourage the consumption of sodas in schools. Consuming sodas leads to excess calories, weight gain, and displaces healthier foods such as milk. ^{55,57}	Untested	
Create opportunities to have recess before lunch, not after lunch.	X		X			X		Providing time for recess before lunch will allow students to choose full meals and decrease cafeteria waste from students leaving their meal to play at recess. ⁵⁵	Untested	
School fundraising activities should not use food, or should only use foods that comply with strict dietary and portion guidelines.	X		X		X			Limiting the kinds of fundraising activities and the types of food, if any, that can be sold, can promote healthier eating in school-aged children. ⁵⁵	Untested	
Establish criteria for and procedures to purchase food from local farmers.	X				X			Purchasing food from local farmers increases student interest and satisfaction with fresh fruits and vegetables. Student usage of the school salad bar increases with the serving of local fruits and vegetables. ⁵⁵	Untested	
Provide students with a reasonable amount of time to eat lunch.	X							Allocating ample time for students to eat will allow them to choose full meals, instead of snacks which are usually in response to feelings of hunger. ⁵⁵	Untested	
Serve only foods meeting certain dietary guidelines at gatherings, meetings, seminars, and workshops.	X		X		X	X	X	Providing only healthy food at meetings will encourage people to eat healthfully. ⁵⁵	Untested	
Sell milk in schools with no greater than 1% fat.	X		X		X			Children consume a great deal of their saturated fat from either whole or 2% milk. Limiting availability to only 1% milk or leaner will have significant effects on their fat intake. ⁵⁹	Untested	
Establish a farmers' market or community supported agriculture drop-off on-site or near the worksite.	X				X	X		Establishing a farmers' market or community-supported agriculture program close to work will increase fruit and vegetable consumption among employees. Those who frequent farmers' markets feel that their fruit and vegetable consumption increases due to these visits. ⁵⁵	Untested	

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Untested policy options — policy options, which are potentially great ideas, but are untested or are shown to not have definitive results.⁹



Texas Obesity Policy Portfolio									
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Worksites	Health Care	Evidence	Level of Effectiveness
Forbid food and beverage marketing on school grounds and at school functions.	X		X		X			Eliminating marketing will discourage consumption of unhealthy food. Children exposed to food endorsements choose foods that are advertised more often than those that are not advertised. Also, most food advertising directed at children is high-sugar cereals, fast food, and candy. ⁵⁵	Untested
Provide free gardening space for resident use at apartment housing complexes, including low-income housing facilities.	X				X			Allowing space to encourage gardening among housing residents could foster greater physical activity and fruit and vegetable consumption. ⁵⁵	Untested
Require that the basic food application process be simplified.	X							Easing the basic food application process could capture those eligible for this program, but who do not participate. ⁵⁵	Untested
Recreation Policies									
Create new walking and biking trails, parks, and recreation facilities.	X		X		X	X		The creation of and improved access to recreational facilities increases physical activity. Access to such facilities positively correlates with activity, and negatively correlates with being overweight. ^{55, 661}	Effective
Provide transportation incentives to allow access to recreational facilities.	X		X		X	X		Improving access to recreational facilities for more physical activity with outreach can increase the amount of physical activity. Access to such facilities positively correlates with activity, and negatively correlated with being overweight. ⁵⁵	Effective
Grant after-hours access to schools and recreational facilities.			X		X	X		The creation of and improved access to places of physical activity increases physical activity. Access to such facilities positively correlates with activity, and negatively correlates with being overweight. ⁵⁵	Effective
Allocate funding for walking and biking maps, including connections between paths.	X				X			Reaching out to the public is an important aspect to the success of programs that increase the accessibility and availability of physical activity. ⁵⁵	Promising
Establish tax incentives or exceptions for private donations of easements for increasing walking and biking trails.	X				X			Better walking and biking infrastructures are associated with more individual walking and biking trips. ^{55, 157}	Promising
Require a greater proportion of federal transportation resources to be spent on walking and biking trails.	X							Better walking and biking infrastructures are associated with more individual walking and biking trips. ⁵⁵	Promising
Enact collaborative policies among state and local entities so state and local recreation areas promote physical activity.	X				X			Access to walking and biking trails, parks, and other recreational activities is linked to increased physical activity and negatively associated to overweight. ^{55, 161}	Promising

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Promising policy options — the rationale supporting the policy option or the specific policy approach was tested in one or more well-designed scientific studies and results of effectiveness are ongoing.⁹

Untested policy options — policy options, which are potentially great ideas, but are untested or are shown to not have definitive results.⁹



Texas Obesity Policy Portfolio									
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Workplaces	Health Care	Evidence	Level of Effectiveness
Eliminate sales tax for the purchase of exercise equipment for individuals.	X							Owning or having access to exercise equipment is linked to increased physical activity. ^{55, 57}	Promising
Allocate funding to increase physical activity facilities in schools.	X		X		X			Increasing accessibility to facilities to be physically active in addition to informational outreach can increase physical activity. Making play environments more aesthetically pleasing has been linked to increased physical activity. ⁵⁵	Promising
Account for health by developing a health knowledge-base.	X							Developing a health knowledge-base will bring attention to the many influences over a person's health which will curb overweight and obesity. ⁵¹	Promising
Offer financial incentives to employees who can document participating in regular physical activity.	X			X	X	X	X	Fiscal discounts, including lowered insurance premiums, may improve participation in worksite wellness programs. ⁵⁵	Untested
Breastfeeding Policies									
Create policies that are compliant with the UNICEF/WHO baby-friendly hospital guidelines.	X				X		X	The implementation of these guidelines that are outlined in the nine steps provided by United Nations Children's Fund/World Health Organization increases breastfeeding initiation rates. ⁵⁵	Effective
Require employers to provide paid break time for mothers to express breastmilk in a private location, other than a bathroom stall.	X				X	X		Women who work for employers who allow time and space for expressing breastmilk are shown to breastfeed at rates equivalent to women not working outside of the home. Workplaces will save money by decreasing absenteeism, lowering medical claims, increasing productivity, and inducing an earlier return among new mothers. ⁵⁵	Promising
Develop incentive programs to encourage employers to ensure breastfeeding-friendly worksites.	X				X	X		Women who work for employers who allow time and space for expressing breastmilk are shown to breastfeed at rates equivalent to women not working outside of the home. Workplaces will save money by decreasing absenteeism, lowering medical claims, increasing productivity, and inducing an earlier return among new mothers. ⁵⁵	Promising
Provide flexible schedules, lactation rooms, and access for new mothers to lactation consultants at the worksite.	X				X	X		Women who work for employers who allow time and space for expressing breastmilk are shown to breastfeed at rates equivalent to women not working outside of the home. Workplaces will save money by decreasing absenteeism, lowering medical claims, increasing productivity, and inducing an earlier return among new mothers. ^{55, W3, W15}	Promising

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Effective policy options — a policy option or the environmental change the policy is meant to bring about was tested in one or more well-designed scientific studies and found to affect nutrition and/or physical activity behavior.⁹

Promising policy options — the rationale supporting the policy option or the specific policy approach was tested in one or more well-designed scientific studies and results of effectiveness are ongoing.⁹

Untested policy options — policy options, which are potentially great ideas, but are untested or are shown to not have definitive results.⁹



Texas Obesity Policy Portfolio									
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Worksites	Health Care	Evidence	Level of Effectiveness
Allow for safe storage and procedures for using breastmilk, following parent's instructions for breastmilk usage, and providing an area on-site for mothers to express breastmilk at child-care centers.	X				X	X		Child care facilities can support a mother's choice to breastfeed by providing safe breastmilk storage and procedures, and providing private facilities where mothers can breastfeed. ⁵⁵	Untested
Establish child-care facilities on-site or close to worksites so mothers can continue to breastfeed while their infant is in child care.	X			X		X		Providing accessible child-care facilities will facilitate a working mother's choice to breastfeed by allowing mothers to breastfeed longer. ⁵⁵	Untested
Exempt breastfeeding mothers from jury duty.	X				X			This action strives to minimize the disruption of breastfeeding mothers and has already been enacted in five states. ⁵⁵	Untested
Exempt materials for the purpose of breastfeeding from sales tax.	X				X			Decreasing the costs of breastfeeding supplies by eliminating the sales tax encourages more mothers to breastfeed. ^{55, 157}	Untested
Mandate that all health-care professionals who provide maternal and child-care services take training in lactation support.	X						X	Providing lactation training to health-care providers will increase breastfeeding. ^{55, 165}	Untested
Allocate funding to WIC clinics to acquire breast pumps to loan to participants.	X							Providing breast pumps to mothers who participate in the WIC program will encourage the continuation of breastfeeding after returning to work and/or school. ⁵⁵	Untested
Built Environment Policies									
Mandate that new housing and commercial developments install sidewalks and internal connections to form pedestrian and bicycle networks.	X				X			Better walking and biking infrastructures are associated with more individual walking and biking trips. ⁵⁵	Promising
Forbid or create disincentives for constructing car-decks and dead-end roads.	X				X			Street connectivity is a major contributor to the "walkability" of an area which is associated positively with walking and bicycle trips. ⁵⁵	Promising
Implement traffic-calming measures for safer pedestrian and cycling areas.	X				X			Traffic engineering initiatives such as single-lane roundabouts, sidewalks, exclude pedestrian signal phasing, pedestrian refuge islands, and increased intensity of roadway lighting can decrease pedestrian-vehicle crashes. ⁵⁵	Promising

Evidence Legend — **S** - School, **FS** - Federal/State, **CCG** - City and county government, **W** - Worksite, **H** - Health care, **M** - Media, **FB** - Faith-based organizations, **SS** - All sectors and settings.

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Promising policy options — the rationale supporting the policy option or the specific policy approach was tested in one or more well-designed scientific studies and results of effectiveness are ongoing.⁹

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Texas Obesity Policy Portfolio									
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Workplaces	Health Care	Evidence	Level of Effectiveness
Grant financial incentives for installing design features in new buildings that encourage physical activity.	X				X	X		Improving accessibility to areas of physical in addition to educational outreach can increase physical activity. ^{SS, W5}	Promising
Require municipal comprehensive plans that public facilities be improved upon before new facilities are constructed.	X				X			Reinvesting resources in existing neighborhoods and facilities could foster physical activity and could encourage use of older neighborhoods which are often more "walkable" than new neighborhoods. ^{SS}	Untested
Mandate or grant incentives for remodeling existing school buildings, over constructing new facilities.	X		X		X			Renovating existing schools will lead to renovation and redevelopment of more dense neighborhoods. Higher density and mixed-use areas are linked to greater physical activity. ^{SS}	Untested
Adopt standards to minimize the amount of land needed for new school buildings.	X		X		X			Decreasing the amount of land needed to build new schools facilities can encourage schools to develop in more densely populated areas which are associated with more physical activity. ^{SS}	Untested
Mandate, encourage, or provide incentives in the school facilities Manual so when schools renovate or build new facilities they design parking lots to minimize interference with bikers and walkers.	X		X		X			Placing emphasis on nonmotorized commuting in the design of schools will encourage physical activity. ^{SS}	Untested
Provide workers with shower facilities and flextime to encourage physical activity during the day.					X	X		Providing employees with shower facilities and/or flextime prompts employees to be more physically active. Having a flexible schedule is associated with meeting physical activity guidelines. ^{SS, W3, W15}	Untested
Install bike racks close to worksites, shopping centers, transportation hubs, and other places that encourage cycling for transportation.	X				X			Providing places for safely securing bicycles will encourage bicycling. ^{SS}	Untested
City Planning/Transportation Policies									
Incorporate networks of foot and bicycle paths as alternatives to roadways in a community's comprehensive plan.					X			Creating areas for increased physical activity, with the appropriate outreach measures, can increase physical activity. Also, better walking and biking infrastructures are linked to more walking and biking trips. ^{SS}	Effective

Evidence Legend — **S** - School, **FS** - Federal/State, **CCG** - City and county government, **W** - Website, **H** - Health care, **M** - Media, **FB** - Faith-based organizations, **SS** - All sectors and settings.

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Promising policy options — the rationale supporting the policy option or the specific policy approach was tested in one or more well-designed scientific studies and results of effectiveness are ongoing.⁹

Untested policy options — policy options, which are potentially great ideas, but are untested or are shown to not have definitive results.⁹



Texas Obesity Policy Portfolio									
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Worksites	Health Care	Evidence	Level of Effectiveness
In municipal comprehensive plans, develop methods to promote growth near transportation hubs.					X			Mixed-use neighborhoods that are close to shopping, work, and other nonresidential land use are linked with increased walking and biking among residents. Counties with pervasive urban sprawl are linked to higher prevalence rates of obesity, higher BMIs, and hypertension. ⁵⁵	Promising
Promote mixed-use neighborhoods through zoning rules, incentive and disincentives in municipal comprehensive plans.	X				X			Mixed-use neighborhoods that are close to shopping, work, and other nonresidential land use are linked with increased walking and biking among residents. Counties with pervasive urban sprawl are linked to higher prevalence rates of obesity, higher BMIs, and hypertension. ⁵⁵	Promising
Locate businesses in areas that are designated mixed-use.						X		Mixed-use neighborhoods that are close to shopping, work, and other nonresidential land use are linked with increased walking and biking among residents. Counties with pervasive urban sprawl are linked to higher prevalence rates of obesity, higher BMIs, and hypertension. ⁵⁵	Promising
Allocate more funding to Safe Routes to School programs.	X		X		X			Active transportation to and from school contributes to children's daily physical activity, and Safe Routes to School programs can increase the number of students walking or cycling to school. ⁵⁵	Promising
Make transportation infrastructure improvements a priority to municipal comprehensive plans.					X			A large obstacle to walking or cycling to school is danger from traffic. Thus, traffic engineering measures should be instilled such as single-lane roundabouts, sidewalks, exclude pedestrian signal phasing, pedestrian refuge islands, and increased intensity of roadway lighting can decrease pedestrian-vehicle crashes. Also, better infrastructure for walking and biking is associated with more walking and biking trips. ⁵⁵	Promising
Enhance community awareness of the benefits of active transportation.	X	X	X	X	X	X	X	Active transport will increase a community's opportunities for physical activity. Building a promotional campaign around this specific area could lead to greater biking and walking trips. ⁵⁵	Promising
Provide incentives for community gardens on public and/or private land.					X			Planting community gardens can enhance both physical activity as well fruit and vegetable consumption. ⁵⁵	Untested

Evidence Legend — **S** - School, **FS** - Federal/State, **CCG** - City and county government, **W** - Worksite, **H** - Health care, **M** - Media, **FB** - Faith-based organizations, **SS** - All sectors and settings.

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Untested policy options — policy options, which are potentially great ideas, but are untested or are shown to not have definitive results.⁹



Texas Obesity Policy Portfolio									
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Worksites	Health Care	Evidence	Level of Effectiveness
Craft a pedestrian and/or bicycling master plan that details the city's plan to make the community more supportive to physical activity.					X			Crafting a master plan will provide a road map for developing an infrastructure favorable to physical activity. ⁵⁵	Untested
Make physical activity a major priority in municipal master plans by mandating all new building and transportation projects consider the impact of and make considerations for physical activity.					X			Mandating consideration of the impact of building and transportation projects on physical activity will encourage a better atmosphere for physical activity. ⁵⁵	Untested
Locate parking lots away from pedestrian and bicycle paths.	X		X		X	X		Locating parking lots away from walking or bicycle paths will encourage more physical activity. Walking and biking infrastructure has been linked to more biking and walking trips. ⁵⁵	Untested
Mandate and allocate funding for walking and biking maps for routes to school.	X		X		X			Providing information to parents about safe routes to and from school will increase the number of students walking and biking to school. Also, maps are effective as part of Safe Routes to School programs to increase the number of students walking or cycling to school. ⁵⁵	Untested
Create incentives or disincentives to encourage faculty, staff, and students to commute actively.	X		X		X			Granting incentives or disincentives for commuting actively will encourage physical activity. ⁵⁵	Untested
Education Policies									
Require the physical education curriculum to provide moderate to intense physical activity.	X		X		X			Increasing the amount of time that students spend on physical activity while in PE classes can increase physical activity and fitness levels. ^{55, 510, 56, 53, 54}	Effective
Require all K-12 students to enroll in daily PE classes in every school year term.	X		X		X			Increasing the amount of time students spend in PE classes can have a positive effect on physical activity and negative effects on being overweight. ^{55, 510, 56, 53, 54}	Effective
Mandate that elementary schoolchildren be provided at least 30 minutes of recess during the school day.	X		X		X			Elementary schoolchildren spend at least some of their recess time in moderate to vigorous physical activity. ^{55, 510, 56, 53, 54}	Promising
Instate regular training to PE teachers to enhance skills for increasing physical activity during PE classes.	X		X		X			Augmenting PE teacher's skills for increasing the amount of time that students are physically active is an effective part of the curriculum. ^{55, 510, 53, 54}	Promising
Work with caregivers to initiate appropriate after-school care exercise/activity programs.	X		X	X	X			Placing requirements in after-school care settings can help overcome sedentary behaviors. ^{55, 53, 54}	Promising

Evidence Legend — **S** - School, **FS** - Federal/State, **CCG** - City and county government, **W** - Worksite, **H** - Health care, **M** - Media, **FB** - Faith-based organizations, **SS** - All sectors and settings.

Effective policy options — a policy option or the environmental change the policy is meant to bring about was tested in one or more well-designed scientific studies and found to affect nutrition and/or physical activity behavior.⁹

Promising policy options — the rationale supporting the policy option or the specific policy approach was tested in one or more well-designed scientific studies and results of effectiveness are ongoing.⁹

Untested policy options — policy options, which are potentially great ideas, but are untested or are shown to not have definitive results.⁹



Texas Obesity Policy Portfolio									
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Worksites	Health Care	Evidence	Level of Effectiveness
Mandate the development and implementation of PE curricula which emphasizes life-long fitness activities over traditional sports activities.	X		X		X			Placing emphasis on life-long fitness activities over team sports teaches students skills and activities to use throughout their lives, prompting them to be more physically active. ^{SS, S10, S3}	Untested
Train personnel, either paid or unpaid, to teach children in the community appropriate eating and exercising habits.	X		X	X	X			Having trained personnel devoted to teaching children healthy life-styles can lead to healthier children. ^{SS, S6}	Untested
Create special weight-focused services in-school and after-school care settings to address needs of already overweight children.	X		X	X	X			Targeting children who are already overweight can lead to healthier life-styles with the appropriate interventions. ^{SS, S8, S8, S6}	Untested
Require exercise for children in child care and kindergarten	X		X	X	X			Getting an early start to healthy life-styles can instill healthy habits for many years. ^{SS, S10, S6, S3}	Untested
Require schools to train health-care professionals or place breastfeeding training into the curriculum.	X				X	X	X	Requiring schools that train health professionals to place breastfeeding training into the curriculum would result in higher breastfeeding rates. ^{SS, S3, S4}	Untested
Media Policies									
Create and adhere to marketing and advertising parameters to curtail the risk of obesity in children.	X	X			X			The federal government's mandating and enforcing the food industry to create guidelines for promoting food, beverages, and sedentary entertainment targeted to children with regards to product placement, promotion, and content will curtail children's demonstrating sedentary life-styles and poor eating. ^{SS, F56, M2, M1, CG4-6, H1-2}	Promising
Incorporate the use of behavioral branding to encourage physical activity like the VERB campaign.	X	X						Behavioral branding has been shown to be effective at communicating with children. The VERB campaign efficiently harnessed all forms of media to communicate to children the benefits of physical activity. ^{SS, M1, M2, H1-2}	Promising
Enact a comprehensive media campaign to raise awareness about the dangers of obesity.	X	X	X	X	X	X	X	Public opinion changed about tobacco due to the efforts of advocates and the diffusion of information about its health risks. Initiatives towards affecting social opinion will lead to policy changes. ^{SS, M2, M1, CG4-6, H1-2}	Untested
Industry Policies									

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Texas Obesity Policy Portfolio									
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Worksites	Health Care	Evidence	Level of Effectiveness
Mandate that nutritional labels appear on all fresh meat and poultry.	X				X			Using nutritional information influences food buying decisions and is linked with better dietary habits. ^{SS}	Promising
Produce and execute a labeling system to identify food items that meet certain agreed-upon guidelines.	X		X		X			Providing nutritional information affects food selection. ^{SS}	Promising
Post nutritional information on menus, menu boards, and food sold in worksite cafeterias.	X				X	X	X	Providing nutritional information affects food selection. ^{SS}	Promising
Enact a nutrition labeling system that identifies food that meets certain agreed upon guidelines.	X				X	X	X	Providing nutritional information affects food selection. ^{SS}	Promising
Require restaurants to provide nutritional information.	X				X	X		Providing nutritional information affects food selection. ^{SS}	Promising
Provide incentives for restaurants and/or grocery stores to adopt a standardized nutritional labeling system.	X				X	X		Consumers use labels with health claims to make food decisions. ^{SS}	Promising
Require nutritional information be posted or appear on food labels of all food bought and served in schools.	X		X		X			Providing nutritional information affects food selection. ^{SS}	Promising
Wellness Policies									
Provide incentives for employers to offer wellness programs.	X				X	X		Wellness programs have proven to be effective in lowering absenteeism and reducing health-care costs for employers. ^{SS, CCG-3, W4, W5, W18}	Promising
Mandate or provide incentives to health insurance companies and HMO's to include preventative services related to nutrition.	X					X	X	Behavioral counseling provided by a trained health-care provider in primary care is effective in changing eating behaviors. Also, combined nutritional and physical activity counseling may produce weight loss in obese patients. ^{SS, FS4, W4, W7}	Promising
Offer discounts on a sliding scale to employers based on the employer's health and wellness programs.	X					X	X	Worksite wellness programs are effective and can lower absenteeism, and reduce health-care costs of employers. ^{SS, W4, W12}	Promising
Put community-based programs in place to influence weight-related behavior.				X	X	X		Empowering communities to take the lead to developing weight-loss programs could lead to weight loss. ^{SS, FS2, FS4-15, FB3, CCG3, W4, W11-13}	Promising
Grant incentives to employers to provide wellness programs that have substantial physical activity components, such as including subsidized health-club memberships.	X				X			Wellness programs have proven to be effective in lowering absenteeism and reducing health care costs for employers. Also, offering financial incentive is linked to more participation in worksite wellness programs. ^{SS, W4, W5-6, W11-14}	Promising

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Texas Obesity Policy Portfolio										Level of Effectiveness
Policy Options	Federal/State	Media	Schools	Faith-Based Organizations	City/County	Workplaces	Health Care	Evidence		
Include a wellness program, with a substantial physical activity component, as part of the employee benefit package.	X					X		Wellness programs have proven to be effective in lowering absenteeism and reducing health care costs for employers. ^{SS, W4-6, W11-14}		Promising
Implement best practice guidelines to manage obesity.			X				X	Putting standards and benchmarks into place will empower health care providers to combat obesity. ^{SS}		Promising
Mandate or provide incentives for health care plans to include preventative services related to physical activity as part of their benefit packages.	X					X		Individual health behavior-change programs are effective in increasing physical activity. Combined physical and nutritional counseling can produce weight loss in obese people. ^{SS, W4-6, W12-15}		Promising
Grant financial incentives for individual purchase of exercise equipment for health-club memberships.						X		Owning or having access to exercise equipment is linked to increased physical activity. Also, improving accessibility to places for physical activity combined with educational outreach can increase physical activity. ^{SS, W4, W11-14}		Promising
Offer discounts on premiums for employers based on their health and wellness initiatives.	X				X	X		Worksite wellness programs are effective and can lower absenteeism and reduce health care costs of employers. ^{SS, W4, W12-14}		Promising
Mandate surveillance of BMI.	X		X		X			Mandating the surveillance of BMI could lead to more awareness of overweight and obesity and lower prevalence and incidence rates. ^{FS2}		Promising
Add Behavioral Risk Factor Surveillance System questions concerning obesity awareness.	X		X					Adding questions concerning obesity awareness could lead to more awareness of overweight and obesity and lower prevalence and incidence rates. ^{FS10}		Promising
Install standards that include screening individuals regarding physical activity behaviors.							X	Routine screening of patients for physical activity behavior encourages physical activity. ^{SS, W11-13}		Untested
Put training programs into place for parents to plan their children's activity times to limit TV and computer usage.			X	X	X	X		Giving parents the tools to correctly allocate their children's recreational time could encourage greater amounts of physical activity. ^{SS, W6}		Untested
Establish community marketing programs on healthy eating and physical activity.	X	X	X	X	X			Initiating a marketing campaign in communities can lead to greater amounts of physical activity and better eating habits. ^{SS, FB2, FB7, H10}		Untested

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Appendix A

Recommendations for Adult Weight-Loss and Weight-Gain Prevention

Appendix A introduces the most current and consistent recommendations for adult weight-loss and weight-gain prevention. The recommendations found in Appendix A were retrieved from reliable sources such as the U.S. Department of Agriculture Dietary Guidelines Advisory Committee, the Center for Disease and Control Prevention, and the American Medical Association. In order to effectively decrease the prevalence of obesity in Texas, population-based approaches must support individual recommendations for weight-loss and weight-gain prevention.

Introduction

For more Americans to become less overweight, two things must happen: (1) individuals must change their behavior, and (2) society must facilitate these changes. Further, available evidence suggests that without behavioral and social change, most Americans will become overweight. Currently two-thirds of Americans are overweight or obese and the trend is for Americans to gain weight until the sixth decade of life. Thus, to maintain current weight, most Americans will need behavioral and social change.

Safety Guidelines for Losing Weight

Prior to changing behavior to prevent weight gain or to lose weight, and based on the recommendations of senior health agencies, the Texas Obesity Study Group recommends three safety guidelines:

- 1. Eat a variety of foods.** Diets that *severely* limit the proportion of carbohydrates, protein, and fat eaten are not healthy. Too few of any of these types of nutrients can be deleterious. Further, any changes that are made must be life-long; so it doesn't make sense to adopt a diet that is so restrictive that it can't be maintained.
- 2. If you have chronic diseases and/or are on medications, consult a health-care provider prior to trying to lose weight.** It is not generally necessary for healthy people to consult a physician before adopting a moderate weight loss program.
- 3. It is not necessary for most people to consult a health-care provider before gradually increasing physical activity.**



Scope and Method of the Recommendations

The following recommendations are based on evidence presented in the policy recommendations of health agencies or from the Texas Obesity Study Group. The recommendations address what to do to lose weight or maintain current weight (Part 1) and how to do it (Part 2). Part 1 is prioritized by the strength of the evidence (strongest evidence is listed first). Part 2 lists the agency that recommended this action and doesn't give a prioritization. The recommendations were compiled by the group responsible for this report and the Texas Obesity Study Group.

Part 1: What to Do to Lose or Maintain Weight

Actions of Known Efficacy to Lose Weight or Prevent Weight Gain

1. **Most adult Americans should reduce their intake of calories 50 to 100 calories per day to prevent weight gain. If you are overweight or obese, reduce intake 500 to 1000 calories per day. This will mean restricting your intake of calories to between 800 to 1500 calories a day. Greater restrictions are not recommended.**
2. **Eat less foods high in fat, sugar, or refined starches.** One of the major approaches to weight loss is to substitute foods of high calorie and low nutrient value — generally those high in fat, added sugars, or refined starches — with foods of low-calorie and high-nutrient value — generally those high in fiber, water, vitamins, minerals, and other beneficial substances.
3. **Eat more foods high in fiber.** High-fiber foods help people lose weight.
4. **Reduce portion size.** Individual food intake has increased 500 calories a day since 1970, generally through increased portion sizes. To lose weight, reverse the process.
5. **Gradually increase physical activity to at least 60 minutes a day to lose and maintain weight loss.** To lose weight, calorie restriction is more effective than exercise, but exercise will increase weight loss and bring other health benefits. To maintain weight loss or to preserve current weight, however, physical activity is essential.

Actions That Are Probably Effective in Losing Weight or Preventing Weight Gain

1. **Eat more fruits and vegetables.** This may work because fruits and vegetables have fewer calories than foods we would otherwise eat. They are also better for health.
2. **Drink fewer sweetened soft drinks and juices.** The calories in these variously sweetened drinks are quickly absorbed and quickly add weight.



Actions That Are Possibly Effective in Losing Weight or Preventing Weight Gain

1. **Eat more home-cooked foods.** We generally consume more calories when we eat out.
2. **Eat foods with a low glycemic index.** Foods that are slower to digest (ones that have a lower glycemic index) often contain fewer calories and may be better for health.

Actions for Which Evidence Is Insufficient to Recommend Losing Weight or Preventing Weight Gain

1. **Eat more frequent, smaller meals.**
2. **Drink less alcohol.** Alcohol contains calories; drinking too much will certainly affect weight. Moderate intake; however, appears beneficial for some adults.

Additional Interventions

The Texas Obesity Study Group concurs with the recommendation of the National Heart, Lung, and Blood Institute, *Clinical Guidelines to Treat Overweight and Obesity* (1998: 86, 89) about pharmacological and surgical interventions.

“Weight-loss drugs approved by the Food and Drug Administration may only be used as part of a comprehensive weight-loss program, including dietary therapy and physical activity, for patients with a BMI of ≥ 30 with no concomitant obesity-related risk factors or diseases, and for patients with a BMI of ≥ 27 with concomitant obesity-related risk factors or diseases. Weight-loss drugs should never be used without concomitant lifestyle modifications. Continual assessment of drug therapy for efficacy and safety is necessary. If the drug is efficacious in helping the patient lose and/or maintain weight loss and there are no serious adverse effects, it can be continued. If not, it should be discontinued.”

“Weight-loss surgery is an option for carefully selected patients with clinically severe obesity (BMI ≥ 40 or ≥ 35 with comorbid conditions) when less invasive methods of weight loss have failed and the patient is at high risk for obesity-associated morbidity or mortality.”

Part 2: How You Can Lose Weight

These techniques are often recommended in clinical settings and can be adapted for individual use.

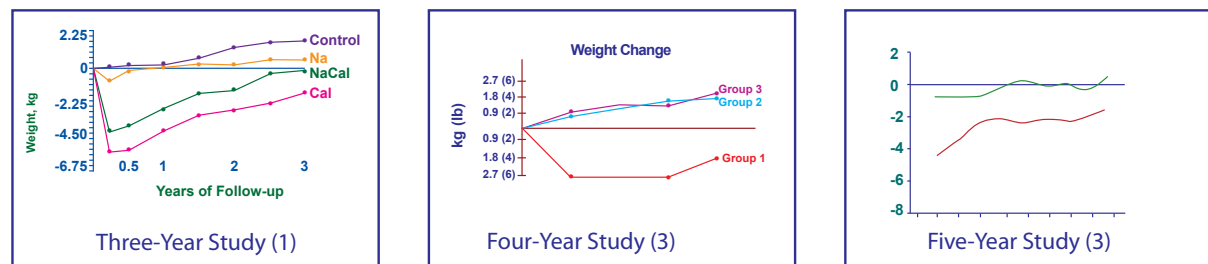
1. **Start thinking straight about weight loss.** This is sometimes called “cognitive restructuring” in the technical literature and is recommended by the National Institutes of Health for weight loss. In their explanation of this method the NIH writes (NHLBI 1998: 82): “Unrealistic goals and inaccurate beliefs about weight loss and body image need to be modified to help change self-defeating thoughts and feelings that undermine weight loss.” Part of cognitive restructuring involves re-education about the basics of weight loss, and thus the U.S. Preventive Services Task Force (2005: 110) recommends nutrition education and behaviorally-oriented counseling to help patients lose weight. This can



happen through a variety of methods — see Recommendation 2 — but at a minimum, the education should emphasize:

- Weight loss is possible and will improve health. The Surgeon General writes (2001: XIV): “Overweight and obesity must be approached as preventable and treatable problems with realistic and exciting opportunities to improve health and save lives.” Abundant evidence cited in the evidence report of the NHLBI indicates that people who are overweight or obese can lose a reasonable amount of weight, enough to improve risk profiles and derive clinical, physical, and psychological benefit within a fairly short time — six months to a year.
- Weight loss involves calorie reduction and increased physical activity.
- Weight loss can be maintained if the changes made are permanent. The right “diet” is one that is nutritionally sound and can be maintained lifelong. While the general pattern is for weight to be lost rapidly for the first six months during the active intervention phase and then to gradually be regained, a number of studies with maintenance plans have shown that people can maintain weight loss for a number of years and still show measurable clinical benefit (figure 11). The three graphs below show the pattern of weight loss over three, four, and five years in three different studies. In each case, the weight loss intervention group is represented by the lowest line on the graph, representing sustained weight loss. In each case, the control group is represented by the line at the top of the graph, showing weight gain over time.

Figure 11. Patterns of Weight Loss and Weight Gain



All three graphs show that when the weight gain that almost invariably happens over time in the control group is considered, the difference in weight between the groups is significant. A seemingly modest difference of 10 pounds can mean the difference in being healthy or not. The extra pounds can result in diseases like hypertension or diabetes and sometimes will require medication (which can be expensive and sometimes have unpleasant side effects). It's important to note that figure 11 represents average results (some participants lost more weight, some less).

- While there are genetically determined limits, the amount of weight lost will depend to a large degree on the effort invested in losing and maintaining it. The diet and physical activity interventions shown in the graphs above were not very intensive. More intensive intervention and maintenance plans will likely yield greater results. Consider this, the average registrant in the National Weight Control Registry has lost 60 pounds and has maintained that loss for roughly five years (see <http://www.nwcr.ws/>).



2. Follow a structured program. The evidence strongly suggests that a substantial amount of structure may be needed to lose and maintain weight loss. The IOM, (*Weighing the Options*, 1995: chapter 3) indicates that this structure can be in the form of (1) Do-it-yourself programs formulated by individual dieters, authors, product promoters, or groups that are generally designed to be adopted as they are (i.e. not tailored to the individual); (2) non-clinical, often commercially-franchised programs that rely substantially on variably trained counselors; or (3) clinical programs provided by licensed professionals with varying degrees of training to treat overweight and obesity. The IOM does not recommend one type of structure over another, but programs should be based on both the safety and long-term efficacy of their recommendations. Generally, programs will follow the techniques listed below. The IOM advises (1995: 64) that treatment options depend “on the individual’s state of health, the amount of weight to lose, his or her evaluation of the need for outside help, and other considerations.” Individuals should find a program that fits their situation. The National Institutes of Health (NHLBI 1998: 74) notes that dietary interventions should last at least six months and that during this time frequent contact with health professionals often facilitates weight loss. For individuals wishing to use commercially available programs, the American Medical Association provides a list of selected commercial weight loss programs. These include:

- Weight Watchers® <http://www.weightwatchers.com>
- Jenny Craig®: <http://www.jennycraig.com>
- TOPS®: Take Off Weight Sensibly: <http://www.tops.org>
- Overeaters Anonymous®: <http://www.overeatersanonymous.org>
- Nutrisystem®: www.nutrisystem.com

They also refer patients to five Internet weight loss programs designed by registered dietitians as starting points for structured weight loss:

- <http://www.fitday.com>
- <http://www.dietwatch.com>
- <http://www.cyberdiet.com>
- <http://www.ediets.com>
- <http://www.shapeup.org>

Registered dietitians can be located through the American Dietetic Association at <http://www.eatright.org>.

3. Set goals of what and how much you will eat before you sit down to eat. Reducing your intake of calories does not happen by accident; you must follow a structured program. As mentioned above, that program can be planned by yourself or with the assistance of others. Either way, knowing what and how much you will eat will have to be a part of your program. Presented below are three different strategies to reduce caloric intake.



- A. **Redesign your plate:** The New American Plate Program, a science-based method to lose weight and reduce cancer risks, was developed by the American Institute for Cancer Research. It suggests that you should aim for meals made up of $\frac{2}{3}$ (or more) vegetables, fruits whole grains or beans and $\frac{1}{3}$ (or less) animal protein. In this program you don't count calories, you simply fill up your plate as specified in figure 12:

Figure 12.



Gradually transition from the old American plate ...

to a better plate ...

to the New American plate

In transitioning toward a New American Plate, your intake of calories should drop while the quality of your diet improves. Brochures and other materials are available at <http://www.aicr.org/publications/nap/index.lasso>. This approach is consistent with a suggestion of the American Medical Association (*Roadmaps for Clinical Practice, Assessment and Management of Adult Obesity: A primer for physicians: Dietary Management: 7*) that it is easier and more effective in the long term to focus on dietary substitutions and portion sizes than to simply count calories. In redesigning your plate, the focus is on both portion control and substituting healthy foods (fruits and vegetables, whole grain cereals, beans, low-fat dairy, fish, and low-fat meats) for unhealthy food choices. The protein portion of the plate should be low-fat, and soy products can be substituted.

- B. **Know how many servings you can eat at each meal.** This approach has been cited by the Institute of Medicine (*Weighing the Options*, 1995: 109) and is another alternative to counting calories. The Mayo Clinic has a useful food pyramid tool that specifies the number of servings of each food group you can have to lose weight, given your weight and gender (see <http://www.mayoclinic.com/health/weight-loss/NU00595>). The table on page 37, developed by the Texas Obesity Study Group, is adapted from the Mayo Clinic Guide for males between 150 and 250 pounds and females between 250 and 300 pounds who are trying to lose weight. On average, the meal pattern on page 37 will provide about 1400 calories/day, which will create slow safe weight loss for most people. Males between 251–300 pounds and females above 300 pounds will generally add one more serving of fruit, vegetable, whole grain and protein/dairy to the specified recommendations. Females who weigh less than 250 pounds and are trying to lose weight will need to subtract a serving of fruit, carbohydrate, and protein from what is presented on page 37.



Figure 13. Sample Meal Plan, Servings Allowed Per Meal

For males between 150–250 pounds, females between 250–300 pounds

Food Group	Breakfast	Lunch	Snack 1	Dinner	Snack 2	Total
Fruit	1	2			1	4
Vegetable		2		2		4
Whole Grain	1	2		2		5
Low-Fat Dairy	1			1		2
Protein: Fish/legumes/poultry/eggs (Try to restrict meat or pork to only once a week, to eat no more than two eggs a week, and to eat fish at least twice a week)	Occasional	1		1		2
Nuts/seeds/oils/sauces (Extra virgin olive oil or canola oil is preferred.)		1		1	1	3
Sweets	One sweet of no more than 75 calories					

Of course, if you use this approach, you must use proper serving sizes.

C. **Know how many calories you can have at each meal.** For example, if you are on a 1500 calorie diet, that can translate into 400 calories at breakfast, 500 calories at lunch and dinner, and a 100 calorie snack. The calories available in fast foods are generally available on-line at the company’s Web site. Alternatively, the nutrition breakdown of many fast foods is available at <http://www.fatcalories.com/>. For home cooking, easy-to-use healthy on-line recipes with calorie counters are provided by:

- The NHLBI at: http://www.nhlbi.nih.gov/health/public/heart/other/ktb_recipebk/
- The CDC’s 5-A-Day program at: <http://www.cdc.gov/nccdphp/dnpa/5aday/recipes/index.htm>
- The American Institute for Cancer Research at <http://www.aicr.org/information/recipe/index.lasso>
- The American Heart Association at <http://www.deliciousdecisions.org/>.
- The Mayo Clinic – see Healthy Recipes at <http://www.mayoclinic.com/health/healthy-recipes/RE99999>).
- Brigham and Women's Hospital at http://www.brighamandwomens.org/healthweightforwomen/eating/menu_plans.asp .

The American Medical Association (*Roadmaps for Clinical Practice, Assessment and Management of Adult Obesity: A Primer for Physicians: Dietary Management:10–11*) suggests that meal replacements, that is, liquid meals, meal bars, or frozen meals, are effective for weight loss and long-term maintenance. They caution, however, that meal replacements do not teach patients how to make healthy diet choices.

The NHLBI provides sample one-day menus of reduced calorie diets for traditional American, southern, Asian-American, Mexican-American, and Lacto-Ovo vegetarian cuisines in their book, *Clinical Guidelines*. The menu for southern cuisine is reproduced on page 38:



Figure 14. Southern Cuisine Sample Menu

SAMPLE MENU: SOUTHERN CUISINE, REDUCED CALORIE				
		1,600 Calories	1,200 Calories	
BREAKFAST				
Oatmeal, prepared with 1 percent low-fat milk		½ cup	½ cup	
Milk, 1 percent low-fat		½ cup	½ cup	
English Muffin		1 medium	—	
Cream Cheese, light, 18 percent fat		1 T	—	
Orange Juice		¾ cup	½ cup	
Coffee		1 cup	1 cup	
Milk, 1 percent low-fat		1 oz	1 oz	
LUNCH				
Baked Chicken, without skin		2 oz	2 oz	
Vegetable Oil		1 tsp	½ tsp	
Salad				
Lettuce		½ cup	½ cup	
Tomato		½ cup	½ cup	
Cucumber		½ cup	½ cup	
Oil and Vinegar Dressing		2 tsp	1 tsp	
White Rice, seasoned with margarine, diet		½ cup	¼ cup	
Baking Powder Biscuit, prepared with vegetable oil		1 small	½ small	
Margarine		1 tsp	1 tsp	
Water		1 cup	1 cup	
DINNER				
Lean Roast Beef		3 oz	2 oz	
Onion		¼ cup	¼ cup	
Beef Gravy, water-based		1 T	1 T	
Turnip Greens, seasoned with Margarine, diet		½ cup	½ cup	
Sweet potato, baked		1 small	1 small	
Margarine, diet		½ tsp	½ tsp	
Ground Cinnamon		1 tsp	1 tsp	
Brown Sugar		1 tsp	1 tsp	
Cornbread prepared with margarine, diet		½ medium slice	½ medium slice	
Honeydew Melon		¼ medium	¼ medium	
Iced Tea, sweetened with sugar		1 cup	1 cup	
SNACK				
Saltine Crackers, unsalted tops		4 crackers	4 crackers	
Mozzarella Cheese, part-skim, low-sodium		1 oz	1 oz	
	Calories:	1,633	Calories:	1,225
	Total Carb. percent	53	Total Carb. percent	50
	calories:		calories:	
	Total Fat. percent	28	Total Fat. percent	31
	calories:		calories:	
	*Sodium, mg:	1,231	*Sodium, mg:	867
	SFA, percent calories:	8	SFA, percent calories:	9
	Cholesterol, mg:	172	Cholesterol, mg:	142
	Protein, percent	20	Protein, percent	21
	calories:		calories:	



4. **Write down what you eat and what you do.** Keep a food and activity diary. This practice is part of what is called “self-monitoring.” Research shows that this simple act, if done conscientiously, will help you reduce caloric intake and increase physical activity when needed.

Self-monitoring has been recommended by the National Heart Lung and Blood Institute (NHLBI) in its *Clinical Guidelines* to treat overweight and obesity (1998: 81). It is also recommended by U.S. Preventive Services Task Force (2005: 110), and the agencies that support NHLBI guidelines, including the American Academy of Family Physicians, the American College of Preventive Medicine, and the American Medical Association.

Agencies differ in what they recommend you should write down and for how long it should be done. At minimum, you should write the time of day, what you ate, and the number of servings of each food you ate. A simple food diary is shown below:

Simple Food Diary:

Date ____/____/____

Time	Food	No. of Servings
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Filling out this diary often leads to voluntary caloric restriction as increased attention is focused on food intake. If, however, you need more information for your self-study, try recording how you feel each time you eat (e.g. hunger-level on a five-point scale before eating) or how food was cooked (fried, baked, broiled...) and/or the number of calories in each serving of food you ate. Remember that for weight loss, the goal is to eat between 800 to 1500 calories per day. Your caloric intake can be adjusted so you lose one to two pounds a week. Several on-line resources exist to help find the number of calories in a serving of food.

<http://www.nutritiondata.com/index.html>

<http://nat.crgq.com/mynat/index.html>

<http://www.nal.usda.gov/fnic/foodcomp/search>

Looking over your diary entries each day may help you identify times when you’re eating for the wrong reasons or eating too much. This may help you set better goals for the next day.

As to physical activity, at minimum, write down the type of activity and the number of minutes you do each activity every day. The goal is to build to at least an hour a day.

5. **Weigh weekly.** The American Medical Association (*Roadmaps for Clinical Practice, Assessment and Management of Adult Obesity: A primer for physicians: Dietary*



Management: 17) includes weighing yourself once or twice a week as part of a suggested self-monitoring practice for weight loss.

6. **Recruit friends or make new ones to help lose weight.** Social support has been proven to assist in weight loss and is recommended by the NHLBI (1998: 82). The U.S. Preventive Services Task Force (2005: 110,119) recommends group support for those in treatment to improve diet. In general, your strategy should be to set goals, like those mentioned above for diet, exercise, and weight loss, and to work together to achieve them and solve problems. A reward system can also be made a part of your social support system.
7. **Identify and control the triggers of unnecessary eating.** “Stimulus control” has been recommended by the NHLBI (1998: 82) and the AMA (*Roadmaps for Clinical Practice, Assessment and Management of Adult Obesity: A Primer for Physicians: Dietary Management:* 8) because research shows that it can work to reduce caloric intake. Triggers to unnecessary eating are varied. Buying and storing high-fat, high-sugar or high-starch foods in the house creates opportunities (triggers) for eating them. An environment where unhealthy foods or snacks are readily available, creates opportunities for unnecessary eating or even overindulgence.
8. **Analyze and tackle barriers to weight loss or control.** Problem-solving or training to overcome barriers is recommended by the NHLBI (1998: 82) and the U.S. Preventive Services Task Force (2005: 110) The American Medical Association (*Food Weight Loss Tips, Roadmaps to Clinical Practice 2003*) also lists a variety of common barriers that must be controlled (e.g., not having regular eating times, not reading food labels, not making small food substitutions to cut calories, not controlling “guilty pleasures,” not proportioning servings, and not controlling calories when dining out). Examining patterns in your food and activity diary is one way to identify times and places where you’ll need to develop a plan to change.
9. **Use meaningful rewards to motivate positive action.** This is called “contingency management” and is recommended by the NHLBI (1998: 82). Some people feel rewarded when they set and meet goals and need no further reward than having reached a reasonable short-term goal — like tomorrow I will not eat more than 1500 calories. Others may work harder for other rewards. The rewards should not, of course, be to eat!
10. **Relieve stress, find another way to manage it.** Research shows that stress triggers excess eating in some people and that it can be controlled through physical activity, meditation, or relaxation techniques (NHLBI 1998: 82). The American Medical Association (*Food Weight Loss Tips, Roadmaps to Clinical Practice 2003*) recommends substituting other activities for eating. If stress causes you to eat, try walking, gardening, riding, and even just talking to friends. All are preferred to eating, if you’re not really hungry.



Appendix B

Texas Obesity Study Group Evidence of Effectiveness Definitions and Recommendations As Referenced by Leading Organizations/Authorities

Appendix B outlines the various definitions of “evidence of effectiveness” as it relates to obesity policy from leading organizations and authorities. Evidence of effectiveness is key to making decisions that demonstrate external validity and contextual relevance. By determining evidence of effectiveness decision-makers can estimate and evaluate the impact of public health interventions.







Texas Obesity Study Group Evidence of Effectiveness Definitions and Recommendations as Referenced by Leading Organizations/Authorities 12/30/05

Organization or Authority	Document/Reference	Evidence of Effectiveness	Recommendations or Comments
United States Department of Health and Human Services, Task Force on Community Preventive Services	Guide to Community Preventive Services <i>MMWR, Recommendations and Reports</i> , October 7, 2005/54(RR10): 1-12 Public Health Strategies for Preventing and Controlling Overweight and Obesity in School and Worksite Settings	For worksites: A mean weight loss of \geq four pounds, measured \geq six months after initiation of the intervention program. For schools: Determination of a meaningful weight change in studies of children was assessed in relation to the intervention goal and study population characteristics on a study-by-study basis..	Strength of recommendations is based on the evidence of effectiveness (i.e., strong or sufficient evidence of effectiveness).
New South Wales Centre for Public Health Nutrition NSW Department of Health	State of Food and Nutrition in NSW Series Best Options for Promoting Healthy Weight and Preventing Weight Gain in NSW March 2005 Executive Summary Prevention of Obesity in Children and Young People: NSW Government Action Plan 2003-2007 www.health.nsw.gov.au/obesity	Concludes that there was too small a body of research to provide firm guidance on consistently effective interventions. Prevention of weight gain offers the most effective means of controlling obesity. This means we need to start with children and young people.	Recommends a "portfolio" model allowing selection based on best available evidence including an adoption of "promising" evidence. Provides priorities, objectives, actions, and how actions will make a difference in the obesity rate.
IOM, Committee on Prevention of Obesity in Children and Youth	Preventing Childhood Obesity: Health in the Balance September 2004 Executive Summary	Actions should be based on the best available evidence — as opposed to waiting for the best possible evidence.	There is an obligation to accumulate appropriate evidence not only to justify a course of action, but to assess whether it has made a difference. Therefore, evaluation should be critical component of any implemented intervention or change.
NECON/Harvard School of Public Health	Strategic Plan for the Prevention and Control of Overweight and Obesity in New England Executive Summary	Provides evidence to support actions to be taken but no evidence of effectiveness of actions taken.	Calls to action of public/private partnerships across the region to take action.



Organization or Authority	Document/Reference	Evidence of Effectiveness	Recommendations or Comments
<p>Trust for America's Health</p>	<p>F as in Fat: How Obesity Policies are Failing in America 2005 Issue Report: Section 6 Recommendations http://www.healthamericans.org</p>	<p>One reason for the scarcity of action is the lack of major scientific examinations into many crucial issues related to obesity. Therefore, when many policies are recommended, they are often not acted upon due to a lack of unquestioned evidence that can be used to support decisions.</p>	<p>TEAH challenges the research community to make finding answers to the following two of five questions a top priority:</p> <ol style="list-style-type: none"> 1. What are the economic costs of obesity and the benefits of possible policy actions? 2. Who is responsible for obesity reduction? <p>TEAH also challenges policy-makers, businesses, communities, and individuals to take informed actions now and study their effects, even while many in-depth questions are being researched.</p>
<p>The International Association for the Study of Obesity</p>	<p>Swinburn B, Gill T, Kumanyika S. Obesity Prevention: A Proposed Framework for Translating Evidence into Action, Obesity Review. 2005. 6:23-33.</p>	<p>Evidence of effectiveness is not sufficient by itself to guide appropriate decision-making, and true evidence-base policy-making is probably quite rare. Therefore, getting the process right and engaging decision-makers from the start moves towards "practice-based evidence" which is more relevant than the classical evidence-based practice because an obesity-prevention plan based only on the limited published trials available would be patchy and probably ineffective. The portfolio approach is based on the principles of financial planning, where the focus is on returning maximum financial yield on the investment of resources.</p>	<p>Key policy and program issues within framework:</p> <ul style="list-style-type: none"> • Building a case for action • Identifying contributing factors and points of intervention • Defining the opportunities for action • Evaluating potential interventions • Selecting a portfolio of specific policies, programs, and actions <p>Filter criteria for implementation:</p> <ul style="list-style-type: none"> • Feasibility • Sustainability • Effects on Equity • Potential side effects • Acceptability to stakeholders
<p>Prevention Institute (Oakland, California)</p>	<p>Strategies for action: Integrating Nutrition and Physical Activity Promotion To Reach Low-Income Californians http://www.preventioninstitute.org/nutrapp.htm Appendix II: Community Interventions and Communities as Interventions</p>	<p>Physical activity was a secondary goal of three multiple risk factor programs, and the Stanford study accounted for 8 percent of the educational messages. Nevertheless, there was some evidence of effectiveness. The Stanford study reported several significant effects for physical activity, but those results were inconsistent regarding type of physical activity and who made the changes. The Minnesota study also reported significant physical activity outcomes, but only during the first three years. The Pawtucket intervention did not report significant outcomes.</p>	<p>Combining education, environmental, and policy interventions may be more effective in increasing physical activity in the community.</p>



Organization or Authority	Document / Reference	Evidence of Effectiveness	Recommendations or Comments
<p>W.K. Kellogg Foundation</p>	<p>Change on the Horizon: A Scan of the American Food System. February 1, 2005, Executive Summary: Drivers and Recommendations http://www.wkcf.org/Pubs/FoodRur/ChangeontheHorizon_00253_04128.pdf</p>	<p>No evidence of effectiveness provided only an environmental scan with predictions for future policy directions.</p>	<p>Drivers of Future Food System Policy:</p> <ul style="list-style-type: none"> • National Health Crisis will shape food policy • Foodservice will be king • Big Guys Could be allies, as nonprofits define brands • Forget the Farm Bill, Look to Local Food Clusters • Possibility of food scare and energy crisis
<p>Robert Wood Johnson Foundation</p>	<p>Healthy Schools for Healthy Kids, RWJ Foundation, Pyramid Corporation, 2003 Executive Summary http://www.rwjf.org/files/publications/other/HealthySchools.pdf</p>	<p>Promising Approaches</p> <p>The Strategic Alliance, a coalition of organizations in California, works to increase physical activity and healthy eating in schools through policy change.</p> <p>Strategies</p> <p>The ultimate goal of the Strategic Alliance is “to prevent childhood obesity by making healthy food choices easier and creating more active environments in California’s communities.” (Samuels and Associates, <i>The Strategic Alliance: Theory of Action DRAFT</i>).</p> <p>To accomplish this goal, the Strategic Alliance focuses on five areas of influence:</p> <ul style="list-style-type: none"> • Children’s Environments • Government • Health Care System • Industry Practices • Media 	<p>Case Study of Effectiveness</p> <p>To achieve policy change within these focus areas, the Strategic Alliance has defined a set of strategies, most of which have been used to achieve their important early successes. These strategies include:</p> <ul style="list-style-type: none"> • Research: Conduct studies, collect data, and develop tracking systems. • Standards: Develop and promote standards, guidelines, and regulations. • Dissemination: Disseminate study results and promote strategies, recommendations, and standards. • Collaboration: Form a strategic collaboration and provide expertise. • Trainings: Develop and implement materials and trainings. • Leadership Development: Promote community and youth engagement, and advocacy. • Organizational Advocacy: Promote policy change and improved practices in organizations and industry. • Advocacy: Support and promote policy changes.
<p>NIH Obesity Research Task Force</p>	<p>Strategic Plan for NIH Obesity Research: A Report of the NIH Obesity Research Task Force. USDHHS, NIH, Publication Number 04-5493, August 2004 http://obesityresearch.nih.gov/about/Obesity_EntireDocument.pdf</p>	<p>No definition provided.</p>	<p>Translational research — progressing from basic science to clinical studies and from clinical trial results to community interventions — is another key cross-cutting research topic. For example, the NIH will study the effects of “social experiments” such as recent policy decisions in some schools concerning food offerings made available to the students. By obtaining data on the outcome of such policy decisions, the NIH can help policymakers develop further actions based on data rather than on assumptions.</p>



Organization or Authority	Document/Reference	Evidence of Effectiveness	Recommendations or Comments
<p>Washington State Department of Health</p>	<p>Nutrition and Physical Activity: A Policy Resource Guide, February 2005. http://www.doh.wa.gov/cfh/NutritionPA/publications/npa-policy-guide.pdf</p>	<p>Applying a scientific lens to the policy making process is useful for understanding and prioritizing policy ideas based on what should be most effective. However, it is important to realize that science is not the only filter that must be applied to policy development. Policy development occurs within the broader social context and should be understood within that context (page 19).</p>	<p>Choosing a policy option</p> <ul style="list-style-type: none"> • All nonpolicy alternatives been tried (policy change necessary) • Efficacy (informed by what the research world tells us) • Feasibility of implementation • Program (doable in the real world) • Budget (costs and benefits) • Social justice (addresses needs of all affected populations) • Understanding potential unintended consequences • Ability to measure success (evaluation) • Understanding stakeholder views (values, interests) • Political feasibility (likelihood of enactment)
<p>NHS Health Development Agency, London, England</p>	<p>Weightman, Ellis, Gullum, Sander and Turley. <i>Grading Evidence and Recommendations for Public Health Interventions: Developing and Piloting a Framework</i>. Support Unit for Research Evidence, Information Services, Cardiff University and the Health Development Agency, 2005.</p>	<ul style="list-style-type: none"> • Strength of evidence of efficacy based on the research design and the quality and quantity of evidence • Corroborative evidence from observational and qualitative studies for the feasibility and likelihood of success of an intervention if implemented in the United Kingdom 	<p>There is general agreement that the RCT has the highest internal validity and, where feasible, is the research design of choice when evaluating effectiveness. However many researchers believe that RCT is too restrictive for some public health interventions, particularly community-based programs. In addition, supplementing data from quantitative studies with the results of qualitative research is regarded as key to the successful replication and ultimate effectiveness of interventions. (Executive Summary)</p>
<p>US Surgeon General</p>	<p><i>The Surgeon General's Call To Action To Prevent and Decrease Overweight and Obesity</i> U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, Public Health Service, Office of the Surgeon General, Rockville, MD 2001. http://www.surgeongeneral.gov/library</p>	<ul style="list-style-type: none"> • None provided — a call to action only 	<p>Key Actions</p> <ol style="list-style-type: none"> 1. Communication: Provision of information and tools to motivate and empower decision-makers at the governmental, organizational, community, family, and individual levels who will create change toward the prevention and decrease of overweight and obesity. 2. Action: Interventions and activities that assist decision-makers in preventing and decreasing overweight and obesity, individually or collectively. 3. Research and Evaluation: Investigations to better understand the causes of overweight and obesity, to assess the effectiveness of interventions, and to develop new communication and action strategies.

Appendix C

Texas Obesity Policy Matrix Conceptual Framework

The purpose of the Obesity Policy Matrix was to arrange the obesity prevention and control policies gathered from academic literature and Internet searches into an organized format. Research data was characterized by age groups and settings/sectors, demonstrating the need for a comprehensive approach to reducing the burden of obesity in Texas.

Age Groups:

- 0–5 years
- 6–9 years
- 10–13 years
- 14–18 years
- 19–35 years
- 36–50 years
- 51–65 years
- 65 + years

Settings:

- Federal/State
- Media
- Schools
- Faith-based organizations
- City
- County
- Worksites
- Health care settings

Each column of the matrix includes reference citations which support each policy option. This appendix also includes a reference page, which categorizes each reference by setting and policy option. For example, an article that supports providing nutrition and physical activity programs



for school-age children is categorized under the School/College setting and sub-categorized under physical activity and nutrition program promotion.

Example:

I. School/College

- a. Provide nutrition and physical activity programs to everyone

Nestle M. Increasing Portion Sizes in American Diets: More Calories, More Obesity. *J Am Diet Assoc* 2003. 103(1): 39-40.

References can be found on pages 57–67.





Texas Obesity Policy Matrix

SETTINGS							
Age	Federal & State Government	Media	Schools	Faith-based Organizations	County & City Government	Worksites	Health Care
0-5 years	<ul style="list-style-type: none"> Accountability for health through development of a health knowledge base¹ Surveillance mandate on BMI² Day-care credentialing process and policies³ Definition of obesity as a health problem for insurers⁴ Accreditation of providers⁵ Restrictions on advertising⁶ Tax breaks⁷ 	<ul style="list-style-type: none"> Develop time and budget campaign for media consumption¹ Develop kids programming to change norms and attitudes² 	<ul style="list-style-type: none"> Identify Preschool requirements for food purchase¹ Develop time and budget campaign² Support curricula development³ Provide Health Promotion and Disease Prevention activities to faculty and staff⁴ 	<ul style="list-style-type: none"> Develop a time and budget campaign to curb media's potentially unhealthy influences on children¹ Physical activity programs for kids and adults² Support community interventions³ 	<ul style="list-style-type: none"> Support parks and recreation facilities¹ 	<ul style="list-style-type: none"> Engage game builders and producers¹ 	<ul style="list-style-type: none"> Home visits to support young mothers¹ Develop time and budget campaign for media consumption² Provide screening and referral³ Conduct research in weight management⁴



SETTINGS							
Age	Federal & State Government	Media	Schools	Faith-based Organizations	County & City Government	Worksites	Health Care
6-9 years	<ul style="list-style-type: none"> Accountability for health through development of a health knowledge base¹ Surveillance mandate on BMI² Day-care credentialing process and policies³ Definition of obesity as a health problem for insurers⁴ Accreditation of providers⁵ Restrictions on advertising⁶ Tax breaks⁷ 	<ul style="list-style-type: none"> Develop time and budget campaign for media consumption¹ Develop kids programming to change norms and attitudes² 	<ul style="list-style-type: none"> Develop time and budget campaign² Support curricula development³ Provide HP/DP activities to faculty and staff⁴ Determine incentives and requirements for after-school programs⁵ Provide nutrition and physical activity program to everyone⁶ Remove vending machines⁷ Screen high-risk kids⁸ Improve food service⁹ Require PE¹⁰ 	<ul style="list-style-type: none"> Develop a time and budget campaign to curb media's potentially unhealthy influences on children¹ Physical activity programs for kids and adults² Support community interventions³ 	<ul style="list-style-type: none"> Support parks and recreation facilities¹ 	<ul style="list-style-type: none"> Engage game builders and producers¹ 	<ul style="list-style-type: none"> Develop time and budget campaign for media consumption² Provide screening and referral³ Conduct research in weight management⁴



SETTINGS							
Age	Federal & State Government	Media	Schools	Faith-based Organizations	County & City Government	Worksites	Health Care
10-13 years	<ul style="list-style-type: none"> Accountability for health through development of a health knowledge base¹ Surveillance mandate on BMI² Day-care credentialing process and policies³ Definition of obesity as a health problem for insurers⁴ Accreditation of providers⁵ Restrictions on Advertising⁶ Tax breaks⁷ 	<ul style="list-style-type: none"> Develop time and budget campaign for media consumption¹ Develop kids programming to change norms and attitudes² 	<ul style="list-style-type: none"> Develop time and budget campaign for media consumption² Support curricula development³ Provide HP/DP activities to faculty and staff⁴ Determine incentives and requirements for after-school programs⁵ Provide nutrition and physical activity program to everyone⁶ Remove vending machines⁷ Screen high risk kids⁸ Improve food service⁹ Require PE¹⁰ 	<ul style="list-style-type: none"> Develop time and budget a campaign to curb media's potentially unhealthy influences on children¹ Physical activity programs for kids and adults² Support community interventions³ 	<ul style="list-style-type: none"> Support parks and recreation facilities¹ 	<ul style="list-style-type: none"> Engage game builders and producers¹ Remove vending machines² 	<ul style="list-style-type: none"> Develop time and budget campaign for media consumption² Provide screening and referral³ Conduct research in weight management⁴ Encourage breastfeeding⁵



SETTINGS							
Age	Federal & State Government	Media	Schools	Faith-based Organizations	County & City Government	Worksites	Health Care
14-18 years	<ul style="list-style-type: none"> Accountability for health through development of a health knowledge base¹ Surveillance mandate on BMI² Day-care credentialing process and policies³ Definition of obesity as a health problem for insurers⁴ Accreditation of Providers⁵ Restrictions on Advertising⁶ Tax breaks⁷ 	<ul style="list-style-type: none"> Develop time and budget campaign for media consumption¹ 	<ul style="list-style-type: none"> Develop time and budget campaign for media consumption² Support curricula development³ Provide HP/DP activities to faculty and staff⁴ Determine incentives and requirements for after-school programs⁵ Provide nutrition and physical activity program to everyone⁶ Remove vending machines⁷ Screen high-risk kids⁸ Improve food service⁹ Require PE¹⁰ Built environment issue at university¹¹ Classes on family living and health¹² Develop young parent opportunities¹³ 	<ul style="list-style-type: none"> Develop a time and budget campaign to curb media's potentially unhealthy influences on children¹ Physical activity programs for kids and adults² Support community interventions³ Encourage breastfeeding⁴ Develop opportunities for young parent⁵ 	<ul style="list-style-type: none"> Support parks and recreation facilities¹ 	<ul style="list-style-type: none"> Engage game builders and producers¹ Remove vending machines² Provide flex time³ Provide incentives⁴ Provide programs/facilities⁵ Conduct educational programs⁶ Provide insurance coverage⁷ Improve food service⁸ Include family outreach⁹ Balance work hours/job demands¹⁰ Provide counseling¹¹ Combine exercise program with other health programs¹² Create a supportive environment and culture¹³ Form partnerships with professional and academic groups¹⁴ Provide time¹⁵ Display point-of-decision prompts to encourage use of stairs¹⁶ 	<ul style="list-style-type: none"> Develop time and budget campaign for media consumption² Provide screening and referral³ Conduct research in weight management⁴



SETTINGS							
Age	Federal & State Government	Media	Schools	Faith-based Organizations	County & City Government	Worksites	Health Care
19-35 years	<ul style="list-style-type: none"> Accountability for health through development of a health knowledge base¹ Surveillance mandate on BMI² Day-care credentialing process and policies³ Definition of obesity as a health problem for insurers⁴ Accreditation of providers⁵ Restrictions on Advertising⁶ Tax breaks⁷ Add BRFSS questions regarding obesity awareness¹⁰ 	<ul style="list-style-type: none"> Provide access and referral sources³ 	<ul style="list-style-type: none"> Develop young parent opportunities^{3,13} Encourage breastfeeding¹⁴ 	<ul style="list-style-type: none"> Physical activity programs for kids and adults² Support community interventions³ Encourage breastfeeding⁴ Develop young parent opportunities⁵ Conduct screening activities⁶ Develop social support intervention in a community setting⁷ 	<ul style="list-style-type: none"> Support parks and recreation facilities¹ Provide prevention and early detection opportunities³ Create health leadership development opportunities⁴ Organize multicomponent community-wide PA education campaigns⁵ Increase access to places for PA and informational outreach⁶ 	<ul style="list-style-type: none"> Remove vending machines² Provide flex time³ Provide incentives⁴ Provide programs/facilities⁵ Conduct educational programs⁶ Provide insurance coverage⁷ Improve food service⁸ Include family outreach⁹ Balance work hours/job demands¹⁰ Provide counseling¹¹ Combine exercise program with other health programs¹² Create a supportive environment and culture¹³ Form partnerships with professional and academic groups¹⁴ Provide time¹⁵ Display point-of-decision prompts to encourage use of stairs¹⁶ 	<ul style="list-style-type: none"> Provide screening and referral⁸ Conduct research in weight management⁴ Encourage breastfeeding⁵ Develop young parent opportunities⁶ Develop and support individually-adapted health behavior-change programs⁹



SETTINGS							
AGE	Federal & State Government	Media	Schools	Faith-based Organizations	County & City Government	Worksites	Health Care
36-50 years	<ul style="list-style-type: none"> Accountability for health through development of a health knowledge base¹ Surveillance mandate on BMI² Day-care credentialing process and policies³ Definition of obesity as a health problem for insurers⁴ Accreditation of providers⁵ Tax breaks⁷ Add BRFSS Questions regarding obesity awareness¹⁰ 	<ul style="list-style-type: none"> Provide access and referral sources³ 		<ul style="list-style-type: none"> Physical activity programs for kids and adults² Support community interventions³ Conduct screening activities⁶ Develop social support intervention in a community setting⁷ 	<ul style="list-style-type: none"> Support parks and recreation facilities¹ Provide prevention and early detection opportunities³ Create health leadership development opportunities⁴ Organize multicomponent community-wide PA education campaigns⁵ Increase access to places for PA and informational outreach⁶ 	<ul style="list-style-type: none"> Remove vending machines² Provide flex time³ Provide incentives⁴ Provide programs/facilities⁵ Conduct educational programs⁶ Provide insurance coverage⁷ Improve food service⁸ Include family outreach⁹ Balance work hours/job demands¹⁰ Provide counseling¹¹ Combine exercise program with other health programs¹² Create a supportive environment and culture¹³ Form partnerships with professional and academic groups¹⁴ Provide Time¹⁵ Display point-of-decision prompts to encourage use of stairs¹⁶ 	<ul style="list-style-type: none"> Provide screening and referral⁸ Conduct research in weight management⁴ Develop and support individually-adapted health behavior change programs⁹



SETTINGS							
Age	Federal & State Government	Media	Schools	Faith-based Organizations	County & City Government	Worksites	Health Care
51-65 years	<ul style="list-style-type: none"> Accountability for health through development of a health knowledge base¹ Surveillance mandate on BMI² Definition of obesity as a health problem for insurers⁴ Accreditation of providers⁵ Tax breaks⁷ Focus how to use Title III funds to support health promotion⁸ Create a HEDIS measure to hold physicians accountable⁹ Add BRFSS questions regarding obesity awareness¹⁰ 	<ul style="list-style-type: none"> Provide access and referral sources³ 		<ul style="list-style-type: none"> Physical activity programs for kids and adults² Support community interventions³ Conduct screening activities⁶ Develop social support intervention in a community setting⁷ 	<ul style="list-style-type: none"> Support parks and recreation facilities¹ Create health leadership development opportunities⁴ Organize multicomponent community-wide PA education campaigns⁵ Increase access to places for PA and informational outreach⁶ 	<ul style="list-style-type: none"> Remove vending machines² Provide flex time³ Provide incentives⁴ Provide programs/facilities⁵ Conduct educational programs⁶ Provide insurance coverage⁷ Improve food service⁸ Include family outreach⁹ Balance Work hours/job demands¹⁰ Provide counseling¹¹ Combine exercise program with other health programs¹² Create a supportive environment and culture¹³ Form partnerships with professional and academic groups¹⁴ Provide time¹⁵ Display point-of-decision prompts to encourage use of stairs¹⁶ 	<ul style="list-style-type: none"> Conduct research in weight management⁴ Use N/PA as a vital sign⁷ Create prescriptions using community guides⁸ Develop and support individually-adapted health behavior-change programs⁹



SETTINGS							
Age	Federal & State Government	Media	Schools	Faith-based Organizations	County & City Government	Worksites	Health Care
65+ years	<ul style="list-style-type: none"> Accountability for health through development of a health knowledge base¹ Surveillance mandate on BMI² Definition of obesity as a health problem for insurers⁴ Accreditation of Providers⁵ Tax breaks⁷ Focus how to use Title III funds to support health promotion⁸ Create a HEDIS measure to hold physicians accountable⁹ Add BRFSS questions regarding obesity awareness¹⁰ 	<ul style="list-style-type: none"> Provide access and referral sources³ 		<ul style="list-style-type: none"> Physical activity programs for kids and adults² Support community interventions³ Conduct screening activities⁶ Develop social support intervention in a community setting⁷ 	<ul style="list-style-type: none"> Support parks and recreation facilities¹ Create health leadership development opportunities⁴ Organize multicomponent community-wide PA education campaigns⁵ Increase access to places for PA and informational outreach⁶ 	<ul style="list-style-type: none"> Remove vending machines² Provide flex time³ Provide incentives⁴ Provide programs/facilities⁵ Conduct educational programs⁶ Provide insurance coverage⁷ Improve food service⁸ Include family outreach⁹ Balance work hours/job demands¹⁰ Provide counseling¹¹ Combine exercise program with other health programs¹² Create a supportive environment and culture¹³ Form partnerships with professional and academic groups¹⁴ Provide time¹⁵ Display point-of-decision prompts to encourage use of stairs¹⁶ 	<ul style="list-style-type: none"> Conduct research in weight management⁴ Use N/PA as a vital sign⁷ Create prescriptions using community guides⁸ Develop and support individually-adapted health behavior change programs⁹

Texas Obesity Policy Matrix

Conceptual Framework

State/Federal Government

1. Accountability for health through development of health knowledge base

Health Communications Division. AIM for a Healthy Weight. Texas Department of Health, Bureau of Nutrition Services. 2003. 1–52.

McGinnis J.M., Williams-Russo P., and Knickman J.R. The Case For More Active Policy Attention To Health Promotion. *Health Affairs*. 2002. 21(2): 78–92.

Mokdad A.H., Marks J.S., Stroup D.F., et al. Actual Causes of Death in the United States, 2000. *JAMA* 2004. 291: 1238–1245.

The Center for Weight and Health. Pediatric Overweight: A Review of the Literature. College of Natural Resources, University of California-Berkeley. June 2001. 1–127.

U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*. Rockville, M.D.: U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General. 2001.

2. Surveillance mandate on BMI

Baranowski T., Cullen K.W., Nicklas T., et al. School-Based Obesity Prevention: A Blueprint for Taming the Epidemic. *Am J Health Behav*. 2002. 26(6): 486–493.

U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*. Rockville, M.D.: U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General. 2001.

3. Day-care credentialing process and policies

The Henry J. Kaiser Family Foundation. Issue Briefs: The Role of Media in Childhood Obesity. February 2004. 1–12.

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4. Definitions of obesity as a health problem for insurers

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5. Accreditation of providers

Weight Realities Division of the Society for Nutrition Education. Guidelines for Childhood Obesity Prevention Programs: Promoting Healthy Weight in Children. October 2002.

6. Restrictions on advertising

The Henry J. Kaiser Family Foundation. *Issue Briefs: The Role of Media in Childhood Obesity*. February 2004. 1–12.

7. Tax breaks

8. Focus on how to use Title III funds to support health promotion

9. Create a HEDIS measure to hold physicians accountable

10. Add BRFSS questions regarding obesity awareness

Health Communications Division. AIM for a Healthy Weight. Texas Department of Health, Bureau of Nutrition Services. 2003. 1–52.

The Center for Weight and Health. Pediatric Overweight: A Review of the Literature. College of Natural Resources, University of California-Berkeley. June 2001. 1–127.

Media

1. Develop time and budget campaign for media consumption

The Henry J. Kaiser Family Foundation. *Issue Briefs: The Role of Media in Childhood Obesity*. February 2004. 1–12.

2. Develop kids programming to change norms and attitudes

The Center for Weight and Health. Pediatric Overweight: A Review of the Literature. College of Natural Resources, University of California-Berkeley. June 2001. 1–127.

The Henry J. Kaiser Family Foundation. *Issue Briefs: The Role of Media in Childhood Obesity*. February 2004. 1–12.

3. Provide access and referral sources



Schools/Colleges

1. Identify preschool requirements for food purchase

2. Develop time and budget campaign for media consumption

The Henry J. Kaiser Family Foundation. Issue Briefs: The Role of Media in Childhood Obesity. February 2004. 1–12.

3. Support curricula development

Baranowski T., Cullen K.W., Nicklas T., et al. School-Based Obesity Prevention: A Blueprint for Taming the Epidemic. *Am J Health Behav.* 2002. 26(6): 486–493.

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O’Dea J.A. Why Do Kids Eat Healthful Food? Perceived Benefits of and Barriers to Healthful Eating and Physical Activity Among Children and Adolescents. *J Am Diet Assoc.* 2003. 103(4): 497–504.

4. Provide HP/DP activities to faculty and staff

5. Determine incentives and requirements for after-school programs

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6. Provide nutrition and physical activity programs to everyone

Cavadini C., Siega-Rix A.M., Popkin B.M. US Adolescent Food Intake Trends from 1965 to 1996. *Arch Dis Child.* 2000. 83: 18–24.

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7. Remove vending machines

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8. Screen high-risk kids

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9. Improve food service

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10. Require PE

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11. Built environment issue at university

12. Classes on family living and health

Health Communications Division. AIM for a Healthy Weight. Texas Department of Health, Bureau of Nutrition Services. 2003. 1–52.



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13. Develop young parent opportunities

14. Encourage breastfeeding

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Faith-Based Organizations

1. Develop time and budget campaign

The Henry J. Kaiser Family Foundation. Issue Briefs: The Role of Media in Childhood Obesity. February 2004. 1–12.

2. Physical activity programs for kids and adults

Baranowski T., Cullen K.W., Nicklas T., et al. School-Based Obesity Prevention: A Blueprint for Taming the Epidemic. *Am J Health Behav.* 2002. 26(6): 486–493.

Flegal K.M., Carroll M.D., Ogden C.L., Johnson C.L. Prevalence and Trends in Obesity Among U.S. Adults, 1999–2000. *JAMA.* 2002. 288: 1723–1727.

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3. Support community interventions

4. Encourage breastfeeding

The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity. Overweight and Obesity: A Vision for the Future.

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5. Develop young parent opportunities

6. Conduct screening activities

7. Develop social support intervention in a community setting

Task Force on Community Preventive Services. Recommendations to Increase Physical Activity in Communities. *Am J of Prev Med.* 2002. 22(4S): 67–72.

City/County Government

1. Support parks and recreation facilities

Center for Nutrition Policy and Promotion. Childhood Obesity: Causes & Prevention: Symposium Proceedings. 27 October 1998. 1–129.

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The Center for Weight and Health. Pediatric Overweight: A Review of the Literature. College of Natural Resources, University of California-Berkeley. June 2001. 1–127.

2. Provide incentives for built living environments

Center for Nutrition Policy and Promotion. Childhood Obesity: Causes & Prevention: Symposium Proceedings. 27 October 1998. 1–129.

Nutrition and Physical Activity Workgroup. Guidelines for Comprehensive Programs to Promote Healthy Eating and Physical Activity. 2002. 1–37.

The Center for Weight and Health. Pediatric Overweight: A Review of the Literature. College of Natural Resources, University of California-Berkeley. June 2001. 1–127.

3. Provide prevention and early detection opportunities

Baranowski T., Cullen K.W., Nicklas T., et al. School-Based Obesity Prevention: A Blueprint for Taming the Epidemic. *Am J Health Behav.* 2002. 26(6): 486–493.



VanLandeghem K. Preventing Obesity in Youth through School-Based Efforts. Health Policy Studies Division, NGA Center for Best Practices. February 2003. 1–7.

4. Create health leadership development opportunities

5. Organize multicomponent community-wide PA education campaigns

Task Force on Community Preventive Services. Recommendations to Increase Physical Activity in Communities. *Am J of Prev Med.* 2002. 22(4S): 67–72.

6. Increase access to places for PA and informational outreach

Task Force on Community Preventive Services. Recommendations to Increase Physical Activity in Communities. *Am J of Prev Med.* 2002. 22(4S): 67–72.

Worksites

1. Engage game builders and producers

2. Remove vending machines

Nestle M., Jacobson M.F. Halting the Obesity Epidemic: A Public Health Policy Approach. *Public Health Reports.* Jan/Feb 2000. 115: 12–24

Nielsen S.J., Popkin B.M. Patterns and Trends in Food Portion Sizes, 1977–1998. *JAMA.* 2003. 289(4): 450–453.

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3. Provide flex time

4. Provide incentives

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Shannon S.L., Leonard B., Fridinger F. The Centers for Disease Control and Prevention Director's Physical Activity Challenge: An Evaluation of a Worksite Health Promotion Intervention. *Am J Health Promot.* 2000. 15(1): 17–20.

5. Provide programs/facilities

Kerr N.A., Yore M.M., Ham S.A., Dietz W.H. Increasing Stair Use in a Worksite Through Environmental Changes. *Am J of Health Promot.* 2004. 18(4): 312–315.



Lowe G.S., Schellenberg G., Shannon H.S. Correlates of Employees' Perceptions of a Healthy Work Environment. *Am J Health Promot.* 2003. 17(6): 390–399.

6. Conduct educational programs

Flegal K.M., Carroll M.D., Ogden C.L., Johnson C.L. Prevalence and Trends in Obesity Among U.S. Adults, 1999–2000. *JAMA.* 2002. 288: 1723–1727.

7. Provide insurance coverage

Ganz, M.L. The Economic Evaluation of Obesity Interventions: Its Time Has Come. *Obes Res.* 2003. 11: 1275–1277.

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8. Improve food service

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Nutrition and Physical Activity Workgroup. Guidelines for Comprehensive Programs to Promote Healthy Eating and Physical Activity. 2002. 1–37.

9. Include family outreach

The Center for Weight and Health. Pediatric Overweight: A Review of the Literature. College of Natural Resources, University of California-Berkeley. June 2001. 1–127.

10. Balance work hours/job demands

11. Provide counseling

Shephard R.J. Worksite Fitness and Exercise Programs: A Review of Methodology and Health Impact. *Am J of Health Promot.* 1996. 10(6): 4 36–452.



12. Combine exercise program with other health program

Shephard R.J. Worksite Fitness and Exercise Programs: A Review of Methodology and Health Impact. *Am J of Health Promot.* 1996. 10(6): 436–452.

13. Create a supportive environment and culture

Wilson M.G., Griffin-Blake C.S., DeJoy D.M. Physical Activity in the Workplace. In M.P. O'Donnell (Ed.), *Health Promotion in the Workplace*. Albany, NY: Delmar. 2002. 244–273.

14. Form partnerships with professional and academic groups

Kaplan G.D., Brinkman-Kaplan V., Framer E.M. Worksite Weight Management. In M.P. O'Donnell (Ed.), *Health Promotion in the Workplace*. Albany, NY: Delmar. 2002. 293–337/

15. Provide time to participate

Kaplan G.D., Brinkman-Kaplan V., Framer E.M. Worksite Weight Management. In M.P. O'Donnell (Ed.), *Health Promotion in the Workplace*. Albany, NY: Delmar. 2002. 293–337.

16. Display point-of-decision prompts to encourage use of stairs

Task Force on Community Preventive Services. Recommendations to Increase Physical Activity in Communities. *Am J of Prev Med.* 2002. 22(4S): 67–72.

Health care

1. Home visits to support young mothers

2. Develop time and budget campaign

The Henry J. Kaiser Family Foundation. Issue Briefs: The Role of Media in Childhood Obesity. February 2004. 1–12.

3. Provide screening and referral

4. Conduct research on weight management

5. Encourage breastfeeding

The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity. *Overweight and Obesity: A Vision for the Future*.

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6. Develop young parent opportunities

7. Use N/PA as vital sign

8. Create prescriptions using community guides



9. Develop and support individually-adapted health behavior-change programs

Task Force on Community Preventive Services. Recommendations to Increase Physical Activity in Communities. *Am J of Prev Med.* 2002. 22(4S): 67–72.

All Sectors and Settings

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Handy, S., & K. Clifton. Planning and the Built Environment. *Obesity Epidemiology and Prevention: A Handbook.* S. Kumanyika and R. Braownson. New York: Springer.

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Washington State Department of Health. *Nutrition and Physical Activity: A Policy Resource Guide.* Olympia, WA: Office of Community Wellness and Prevention. 2005.





Glossary

Adoption — The uptake of a policy option by individuals in the various settings.¹²

BMI-for-age — In children, the BMI values vary with the age and sex of the child. The BMI in children is called BMI-for-age.³

Body Mass Index (BMI)³ — weight (kg)/height (m²).³

Comprehensive policy approaches — Policy intervention at a multitude of settings including but not limited to federal and state government, local governments, health care, workplace, media, faith-based organizations, and schools.⁹

Effective policy options — The policy idea or the environmental change the policy is meant to bring about were tested in one or more well-designed scientific studies found to affect nutrition and/or physical activity behavior.⁹

Efficacy — Impact of a policy under ideal conditions.¹²

Epidemic — The occurrence of a disease that is clearly in excess of the normal expectancy.²²

Evidence — A body of facts or information that provides a level of certainty that a proposition is true or valid. Observation and experimental are the two main categories of evidence.

External Validity — A measure of the generalizability of the findings from the study population to the target population.²²

Internal Validity — Internal validity measures the extent to which differences in an outcome between or among groups in a study can be attributed to the hypothesized effects of an exposure, an intervention, or other causal factor being investigated. A study is said to have internal validity when there has been proper selection of study groups and a lack of error in measurement.²²

Matrix — A format adopted to characterize research data by age groups and settings and sectors.

Morbidity — The occurrence of an illness or illnesses in a population.²²

Mortality — The occurrence of death in a population.²²

Obesity — For an adult, a BMI of 30 or more.³



Overweight — For an adult, overweight refers to a BMI between 25 and 29.9. A child is considered overweight if they have a BMI-for-age between the 85 percentile and the 95 percentile.³

Portfolio — A selection of policy options based on the best available evidence including untested and promising strategies.

Prevalence — The number of existing cases of a disease or health condition in a population at some designated time.²²

Promising policy options — The rationale supporting the policy idea or the specific policy approach was tested in a well-designed scientific study and results of efficacy are ongoing.⁹

Public Health — Public health focuses on the prevention of disease by keeping people well, but includes efforts to reduce disability and increase quality of life. In addition to its emphasis on prevention, public health focuses attention on working with populations of people, including families, neighborhoods, and communities, not just individuals.

Reach — Proportion of the population of relevant settings in which the policy or program is instituted.¹²

Untested policy options — Policy options that are potentially great ideas but are untested or are shown to not have definitive results.⁹



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