

*What Works:
Reducing Health Disparities in Wisconsin Communities*

*A Review of Evidence-based Strategies
to Address Obesity in
African American
and Latino Communities*

December 2010

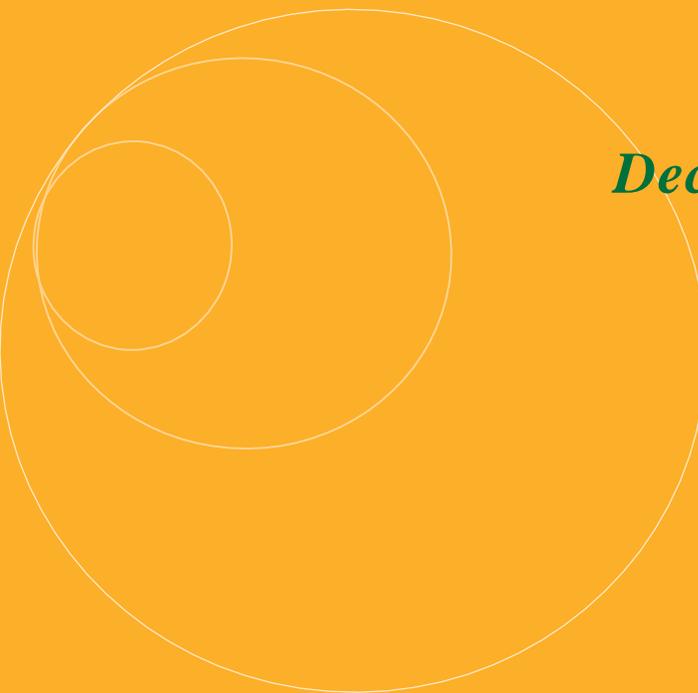


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I. Introduction

A. Background

This report was produced as part of the “What Works: Reducing Health Disparities in Wisconsin Communities” project. What Works is a three-year, collaborative project involving the Wisconsin Division of Public Health and the University of Wisconsin Population Health Institute and is funded by the Wisconsin Partnership Fund for a Healthy Future. The overall goal of the project is to identify and disseminate public health interventions that will help reduce racial and ethnic health disparities in Wisconsin. The activities of the What Works project focus on two of the health priorities identified in the state health plan, Healthiest Wisconsin 2010, (overweight, obesity and lack of physical activity, and access to primary and preventive health services) and on the two largest racial/ethnic minority populations in Wisconsin (African American and Hispanic/Latino).

The project’s two key strategies are: (1) to review the published academic literature related to the two health priority areas in order to identify evidence-based practices that could improve health among these two populations, and (2) to identify the shared characteristics of programs and projects in Wisconsin communities that show promise in improving health in racial and ethnic minority populations.

This report is focused on our efforts to identify, from the published research literature, effective public health interventions to address overweight and obesity. Later reports in this series will focus on strategies identified in the research literature to improve access to primary and preventive health services, and on promising local community-based efforts to address these health priority areas within racial and ethnic minority communities in Wisconsin.

The primary audience for this report includes public health practitioners and policy makers involved in planning, implementing or evaluating community-based interventions targeting obesity in racial and ethnic minority communities in Wisconsin. Thus, the report focuses on smaller-scale interventions which could be implemented by community-based organizations such as community health centers, local health departments, centers of faith, schools or neighborhood centers. While efforts of this scale are a vital component of a comprehensive effort to address obesity, we also recognize the need for large-scale efforts to address the structural aspects of our environment that encourage sedentary lifestyles and unhealthy food choices. Without broader changes to support individual lifestyle changes, it is unlikely that even the best designed community-based intervention can make a sustained impact on our societal weight problem.

B. Defining evidence-based practices

As noted above, a primary strategy of the What Works project involves the identification of relevant evidence-based practices. The notion of evidence-based practice first developed within the field of clinical medicine and originally referred to a clinician’s

deliberate use of the best and most current research evidence to inform decision-making about patient care.¹ The concept of appraising the research evidence to inform decision-making has since been embraced by many other fields, including public health.²

Within the context of the What Works project, evidence-based practices have been defined as practices whose effectiveness has been confirmed by systematic research or expert consensus. In practice, this means looking to the results of systematic and literature review articles published in peer-reviewed, scientific journals, or to well-respected sources such as the Cochrane Database of Systematic Reviews or the Guide to Community Preventive Services. While the term “evidence-based practices” is sometimes used more loosely to refer to any practice with evidence of effectiveness, in this report it is used only to refer to practices which meet the more formal definition.

C. Scope of the report

While the original scope of our literature search was limited to identifying evidence-based practices, initial results revealed not only a lack of evidence-based practices for addressing obesity in minority communities, but very few for addressing obesity in the general population. Therefore, the decision was made to expand the search and the scope of this report to include two other types of published articles: individual studies of obesity interventions with minority communities and background articles focused on obesity within minority populations. The criteria used to locate each type of article and the results of our expanded literature search are discussed in later sections of this report.

Also, while the Wisconsin State Health Plan health priority area of overweight, obesity and lack of physical activity provided the framework for our literature search, our primary outcome of interest was strategies to reduce overweight and obesity in minority communities. We therefore concentrated most of our efforts on identifying interventions with the explicit goal of preventing or treating overweight and obesity, rather than on interventions which framed their goals in terms of increasing physical activity. The Guide to Community Preventive Services includes a discussion of interventions which have been demonstrated to be effective in increasing physical activity, and summary of these interventions is included in Appendix A.

D. Definitions and health effects of overweight and obesity

The Centers for Disease Control and Prevention (CDC) defines overweight and obesity based on the ratio of an individual’s weight and height, called Body Mass Index (BMI). BMI scores are calculated differently for adults versus children and teens. Scores for children and teens take into account normal variations in body fat based on age and sex. Additionally, BMI scores for children and teens are presented as a percentile rather than a specific number score, to show scores relative to those of other children of the same sex and age.^{3,4} Table 1, below, shows the high BMI ranges for adults and for children and teens, as well as health conditions associated with overweight and obesity.

Table 1.

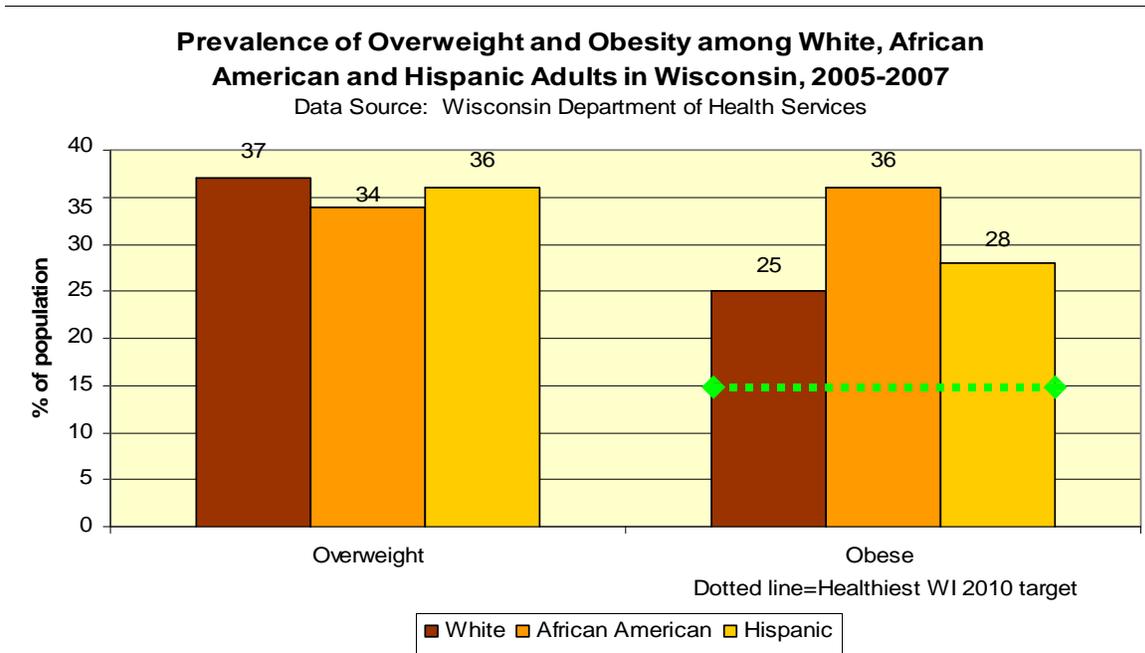
Definitions of Overweight and Obesity and Associated Health Effects Adapted from CDC ³ and Cole et al., 2000 ⁴		
•• Adults ••		
	BMI ranges	Overweight and obese adults are at increased risk for:
Overweight	BMI between 25 and 29.9	<ul style="list-style-type: none"> • Hypertension • Osteoarthritis • Type 2 diabetes • Dyslipidemia (e.g., high total cholesterol) • Sleep apnea and respiratory problems • Some cancers (e.g, endometrial, breast and colon)
Obese	BMI of 30 or higher	<ul style="list-style-type: none"> • Stroke • Gallbladder disease
•• Children and Teens ••		
	BMI ranges	Overweight and obese children and teens are at increased risk for:
Overweight	BMI at or above 85 th but below 95 th percentile	<ul style="list-style-type: none"> • Hypertension • High cholesterol • Sleep apnea
Obese	BMI at or above 95 th percentile	<ul style="list-style-type: none"> • Type 2 diabetes • Bone and joint problems • Adult obesity

E. Trends and disparities in overweight and obesity

One of the federal Healthy People 2010 objectives is to reduce the prevalence of obesity among adults to less than 15%⁵; however, recent national health surveys indicate that achieving this goal is increasingly unlikely. Data from the CDC's Behavioral Risk Factor Surveillance System (BRFSS) show that adult obesity prevalence in the US increased among men and women and within all racial and ethnic groups between 1995 and 2005. Overall, the proportion of adults who were obese increased during this period from 15.3% to 23.9%.⁶ Adult obesity trends in Wisconsin mirrored national trends, rising from 16% in 1995 to about one-quarter (24.4%) of adults in 2005.⁷

As shown in Figure 1, a similar proportion of white, African American and Hispanic adults in Wisconsin are overweight, but the prevalence of obesity is higher for both African American and Hispanic adults than for white adults.⁶ Similar to the federal objective, Wisconsin aims to reduce the prevalence of obesity among adults to 15%.⁷ The state is not close to reaching the 2010 target for any of the racial or ethnic groups shown.

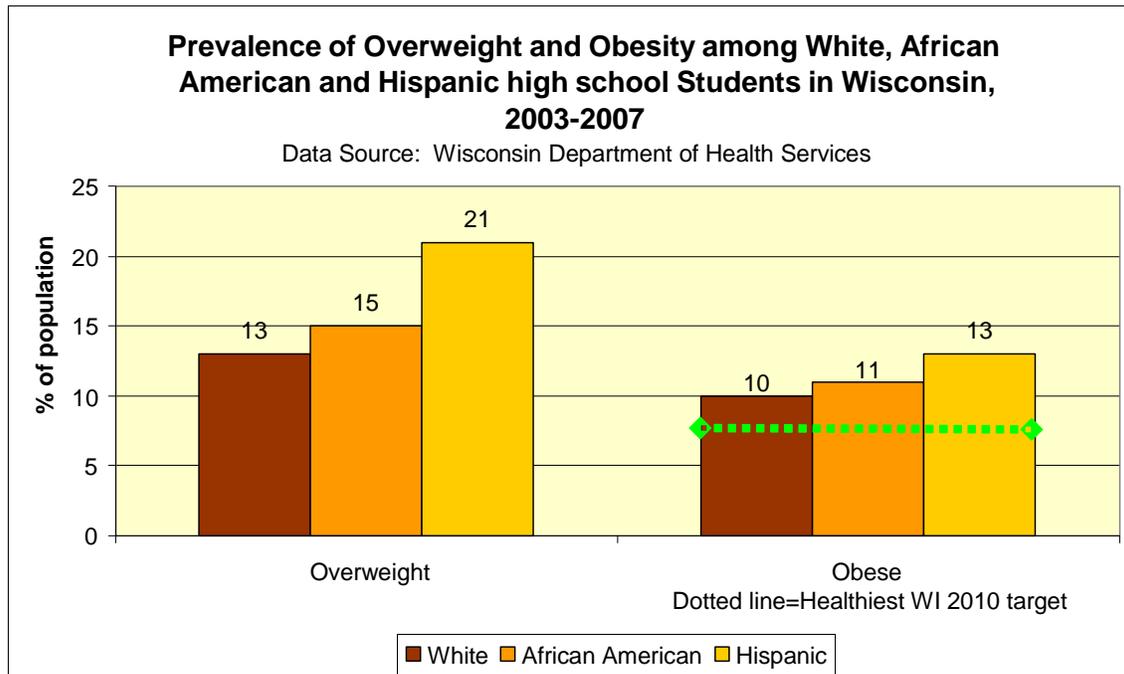
Figure 1.



The CDC’s Youth Risk Behavior System (YRBS) surveys high school students in Wisconsin and throughout the country every two years on a variety of health risk behaviors associated with the leading causes of death, disability and social problems. YRBS data from 2007 show that about 13% of high school students in the US were obese.⁸ The Wisconsin Youth Risk Behavior Survey shows that in 2007 about 11% of students were obese and boys (14.7%) were significantly more likely than girls (7.2%) to be obese.⁷

As shown in Figure 2, the prevalence of overweight and obesity among high school students in Wisconsin also differs by racial and ethnic group. The prevalence of overweight is particularly high among Hispanic high school students, and while the differences in terms of obesity are smaller, none of the racial or ethnic groups shown are at the state’s target level for the year 2010 of 8% of the population.⁷

Figure 2.



Clearly, overweight and obesity are serious public health issues for the country and for Wisconsin. Healthiest Wisconsin 2010 identified overweight, obesity and lack of physical activity as one of eleven key health priorities for the state because of the contributory role they play in several causes of death and disability in Wisconsin such as heart disease, hypertension and diabetes.⁹ Unfortunately, data show that not only are we far from reaching federal and state obesity targets for the year 2010, trends between 1995 and 2005 in Wisconsin and the US show the prevalence of obesity increasing rather than decreasing. Disparities exist nationally for African Americans and Hispanics versus whites in terms of obesity among both adults and high school students. In Wisconsin, the prevalence of obesity is highest among African American adults, and the much higher prevalence of overweight among Hispanic high school students also merits particular concern.

II. Literature Search Methods

The main strategy for our literature search was to utilize the pre-formulated searches that have been developed by Partners in Information Access for the Public Health Workforce for selected objectives from the federal Healthy People 2010 initiative.¹⁰ By using these criteria, one can search the PubMed database and retrieve articles from a range of peer-reviewed, scientific journals that are related to specific Healthy People 2010 objectives. The most relevant objectives from within the “nutrition and overweight” and “physical fitness” focus areas were selected for this project. While the searches were developed based on the federal Healthy People 2010 objectives, state-level objectives related to the

Healthiest Wisconsin 2010 health priority of overweight, obesity and lack of physical activity mirror the federal objectives. A list of the federal- and state-level objectives related to these topics is included in Appendix B.

Our search retrieved several hundred articles related to each objective. The titles and abstracts of these articles were reviewed and scored on two criteria: the degree to which the article was focused on the prevention or treatment of obesity or overweight, and the degree to which the article focused on an African American or Hispanic/Latino population. Based on this scoring, the full texts of the most relevant articles were reviewed, and a determination was made regarding whether the article would be considered an evidence-based practice article, a single intervention study or a background article. Table 2 below shows additional selection criteria used in the search.

Table 2.

Criteria for Inclusion in our Review			
	Description	Degree of focus on African Americans and/or Hispanic/Latinos	Publication years
Evidence-based practice literature	Articles that report on a formal review of multiple obesity-related interventions. Often these are labeled as “systematic reviews,” “literature reviews” or “reviews of interventions.”*	Articles focused on the general population or on either of the two populations of interest.	Jan. 1995 – April 2008
Single intervention studies	Articles reporting on the results of a single overweight or obesity prevention or treatment intervention.*	Studies of interventions focused on one or both of these populations.	May 2003- April 2008
Background articles	Articles that do not report the results of an intervention but provide cultural, historical or other background information that could inform obesity-related interventions.	Articles focusing on one or both of these populations.	Jan. 2000- April 2008

*Surgical and pharmacological interventions were excluded from the review.

Our search included a different publication timeframe for each type of article for several reasons. Since the primary goal of this effort was to identify evidence-based practices related to obesity for minority populations, we searched the evidence-based practice literature over a fairly broad period of time. The criterion for the single intervention studies was determined after we located a comprehensive review of obesity-related interventions within communities of color that reviewed the literature up until May 2003. We therefore decided to concentrate this part of our search on articles published from then onward. Finally, because we assumed that the cultural and other factors that should be considered when designing and implementing interventions change over time, we limited the background articles to those published in 2000 or later.

The final step in our literature search and review was for two members of the What Works project team to review the full text of the selected articles and complete written summaries of each article.

III. Results and Discussion

A. Evidence-based practice literature

1. Description of review articles

Twenty-seven systematic and literature reviews of overweight and obesity interventions were located and ultimately included in our “review of reviews.” The reviews were published between 1996 and 2007, and examined more than 200 individual studies of interventions published as far back as 1970. Additional characteristics of the review articles are included in Appendix C. All of the prevention-focused reviews concentrated on preventing overweight and obesity among children and youth, as did most of the reviews focused on treatment or on both prevention and treatment. Despite significantly higher rates of overweight and obesity among many racial and ethnic minority populations in the US, our literature search uncovered only one high-quality, comprehensive review of overweight or obesity interventions specifically focused on racial and ethnic minorities.¹¹ This review is discussed in detail in Sec. III A.4.

2. An overall lack of conclusiveness

Unfortunately despite the enormous amount of attention focused on the problem of obesity in recent years, the systematic and literature reviews revealed that obesity researchers have yet to develop a set of evidence-based practices that can be used to effectively address obesity on a population level. The statements below are taken from several of the reviews we analyzed and illustrate that while progress has been made, the research has yet to provide clear direction on the topic for the public health community.

- “The mismatch between the prevalence and significance of [childhood obesity] and the knowledge base from which to inform preventive activity is remarkable, and an outstanding feature of this review.”^{12(p155)}
- “In conclusion, there is a limited amount of quality data on the effects of programs to treat childhood obesity, and as such no conclusions can be drawn with confidence.”^{13(p2)}
- “The evidence base has increased markedly since the completion of earlier reviews, although high-quality evidence [on the prevention and treatment of pediatric obesity] is still lacking.”^{14(p611)}
- “The intervention studies to date have made progress in determining the best methods of treating and preventing weight gain in children and adolescents. Still, a vast amount of work remains in this area before it will be possible to make sound

recommendations for treatment and prevention programs that can have a broad impact on public health.”^{15(p521)}

Information from the Guide to Community Preventive Services and the Cochrane Library support our conclusion that few evidence-based practices related to obesity exist. Only one type of obesity intervention (multi-component worksite interventions aimed at diet, physical activity and cognitive change) has achieved the status of “recommended” in the Guide to Community Preventive Services.¹⁶ Of the three Cochrane Reviews related to obesity that we reviewed, two did not include conclusive findings. Neither the review focusing on preventing obesity in children nor the one focused on the treatment of obesity in children made definitive statements about effective programs.^{13,17} A Cochrane Review focusing on treating overweight and obesity in adults found that exercise, particularly when combined with dietary changes, can be effective in reducing overweight. They note, however, in their discussion of the limitations of their review, that because of the “paucity” of long-term studies, “...the true effect of exercise on body weight is difficult to determine.”^{18(p9)}

3. “Insufficient evidence to determine effectiveness” or “Sufficient evidence of ineffectiveness”?

In the framework of evidence-based practices, there is an important distinction between finding that the research evidence on a topic is inconclusive and finding that the research shows that an intervention is ineffective. The glossary for the Guide to Community Preventive Services notes that “[a] finding of ‘insufficient evidence’ indicates the need for additional research into the effectiveness of the intervention; it does not mean that the intervention doesn’t work, but rather that we can’t tell yet if it works.”^{19(p479)} While our aim in this undertaking was to identify evidence-based practices that could help to reduce health disparities and not to formally assess the obesity-related research literature, the results of our “review of reviews” suggest that the current lack of evidence-based practices is due in large part to insufficient evidence to determine the effectiveness of current interventions.

Early systematic and literature reviews on the topic of obesity often pointed to significant differences in study design as well as a lack of rigorous study methods as factors that contributed to their inability to draw conclusions from the individual studies they reviewed. The more recent systematic reviews suggest that, while researchers have come to consensus on several important issues such as the use of changes in BMI as a standard outcome measure, methodological issues still remain.

While many reviews suggested that the evidence was insufficient to determine effectiveness, there were also reviews that concluded that a type of intervention, at least as implemented in the studies they reviewed, did not appear to be effective. Often this conclusion stemmed from a lack of impact on participants’ BMI scores. For example, a review of 64 obesity prevention programs for children and adolescents produced a few glimmers of hope regarding effective interventions, but the authors came to a somewhat gloomy conclusion about the overall effectiveness of the interventions they reviewed:

In sum, this meta-analytic review suggests that most interventions do not produce the hypothesized weight gain prevention effects and that the overall average intervention effect was small. Findings also indicated that for most programs that produced significant weight gain prevention effects, the effect sizes are clinically meaningful, but usually confined to pre to post [intervention] effects.^{20(p688)}

The research on obesity prevention and treatment has not yet produced a set of effective, evidence-based tools to impact obesity on a population level. It appears that this lack of conclusiveness is due in large measure to insufficient evidence to determine whether current interventions are effective, though there are also some indications that existing programs are struggling to produce significant and enduring changes in BMI, a key outcome measure for obesity-related programs. Put plainly, the research does not yet tell us what to do nor, unfortunately, does it clearly tell us what is not worth doing.

4. Reviews focusing on racial or ethnic minority populations

As mentioned earlier, our search located only one high-quality, comprehensive, systematic or literature review focused on population-level interventions targeting obesity or overweight in racial or ethnic minority populations. “Population-based Interventions Engaging Communities of Color in Healthy Eating and Active Living: A Review,” by Yancey et al., was published in *Preventing Chronic Disease* in January 2004.¹¹ The authors take a broad look at population-based interventions targeting communities of color over the past three decades. For their review, the authors searched the published academic literature using well-known electronic databases, and also examined unpublished peer-reviewed and non-peer-reviewed literature on the topic, often referred to as “grey literature.”

To be included in their review, studies had to be conducted in the United States, target obesity-related lifestyle changes and utilize multiple health promotion approaches and communication channels. Studies also had to target an underserved ethnic group, and the sample used for data analysis had to be predominantly comprised of the underserved ethnic group or include sufficient numbers of this group to enable ethnic-specific data analysis. Finally, studies had to be population-based and target a population which was healthy but high-risk.

The authors identified 23 studies which met their search criteria. The studies were divided into earlier studies (published early 1970s to the mid-1990s) and more recent studies (published mid-1990s to mid-2003). Table 3, on the following page, presents several characteristics of the studies included in the review.

Table 3.

Characteristics of Community-level Healthy Eating or Physical Activity Interventions Implemented among Racial/Ethnic Minority Communities Adapted from Yancey et al., 2004 ¹¹		
	Early 1970s to mid-1990s n=7 studies	Mid-1990s to mid-2003 n=16 studies
Ethnicity of Study Population		
African American	3	6
Asian	0	4
Latino or Hispanic	4	5
American Indian or Alaskan Native	0	2
Pacific Islander	0	0
Study Design		
Randomized control trial	4	1
Uncontrolled trial	3	5
Demonstration project	1	10
Behavior Target		
Dietary changes	8	18
Physical Activity	4	15
Nutrition and Physical Activity	3	10
Weight monitoring	1	1
Outcome Measures		
Self-reported behavior	5	8
Observed behavior	1	7
Clinical measure	1	0
Morbidity/mortality rates	0	0
Organizational practice	1	9
Legislative policy	0	2
Significant Findings (p<.05)		
Individual-level dietary, physical activity or weight change	10	1
Organizational practice or policy change	1	0
Legislative policy change	0	0
Other	0	5
None	1	9

Note: Categories within each topic are not mutually exclusive.

While the article provides a useful historical overview of the inclusion of communities of color in obesity research, the authors are unable to distill conclusive information about effective strategies to address obesity among racial and ethnic minorities. They write,

Given the presentation of outcome data in fewer than half of the studies, and the few significant effects and moderate effect sizes, the best data available speak only to what it takes to engage and retain people of color, not what it takes to create and sustain weight loss, engagement in regular physical activity, or improved dietary quality.^(p8)

The issue of overweight and obesity merits continuing attention from researchers. Hopefully, in the near future, systematic reviews will be able to produce not only clear direction for interventions with the general population, but also information specific to racial and ethnic minority groups. As Yancey et al., say of the current state of the research,

There is a paucity of high-quality data on sustained chronic disease or obesity risk reduction from interventions targeting or including meaningful numbers of people of color or people from low-income backgrounds. This gap in the literature represents a major obstacle in developing effective policies and programs.^(p2)

B. Single intervention studies

Because our initial literature search revealed few evidence-based practices related to obesity, the search was expanded to include articles reporting on the results of individual obesity interventions with racial and ethnic minority communities. We hoped to find examples of obesity interventions that had been conducted with African American or Hispanic/Latino communities that were not overly resource-intensive, were well-designed, and which produced significant results with regard to obesity. Unfortunately, we did not find interventions which met all of these criteria. In an effort to provide useful information, however, we have included in this section a description of ten interventions, and provide a rating of the interventions for each criterion separately. Although none of the interventions met all of our criteria, each of the programs described have characteristics that could be useful in designing new obesity prevention and reduction interventions for minority populations in Wisconsin. Table 4, on the following page, provides further information about how the studies were rated.

Table 4.

Description of Rating Criteria for Individual Intervention Studies			
Criteria	Low	Medium	High
Level of resources required to support the intervention	Utilized community members to convey health messages, required fewer specialized consultants or materials	Specialized consultants used to train lay counselors; utilized existing resources in communities	Required consultation with medical personnel, longitudinal observation of participants, costly incentives, materials or equipment.
Degree of cultural adaptation	Efforts to tailor program to specific population are not described or appear minimal	Program used a mixture of existing materials/techniques but incorporated some adapted elements	Extensive efforts to tailor program to a specific population
Quality of evaluation methodology	Lack of a control group for comparison or important health measurements.	Shorter follow-up of participants or use of only self-reported health measures	Use of objective measures of health outcomes and long-term follow-up of participants
Observed effects on obesity	No significant reductions in BMI among participants. May have produced other beneficial or intermediate results	Modest or short term changes in BMI	Sustained, significant changes in BMI among participants

Table 5.

Single Intervention Study Ratings				
Intervention	Resources required to implement	Degree of cultural adaptation	Quality of evaluation methodology	Observed effect on obesity
<p>Lay health advisors (<i>Promotoras</i>)²¹</p> <p>An intervention among Hispanic adult women designed to improve diet using community-based health advisors (<i>promotoras</i>) and culturally appropriate educational materials.</p>	<p>Medium</p> <p>Health advisors must be trained and conduct counseling. Tailored educational materials must be developed.</p>	<p>High</p> <p>Translated materials and counseling conducted in Spanish.</p>	<p>Medium</p> <p>Tracked food intake using 24 hour recall interview, BMI measured by a nurse in participants' homes. Focus of intervention was modifiable risk behaviors, therefore changes in BMI were not reported.</p>	<p>N/A</p> <p>Immediate behavior changes included lower caloric intake and less fat and carbohydrate consumption. Benefits of the tailored program dissipated after 12 months compared to "off-the-shelf" diet materials.</p>
<p>Health-e-AME (African Methodist Episcopal)²²</p> <p>An intervention conducted within predominantly African American churches to increase awareness of physical activity, promote exercise, and promote health through leaders of the church. Activities included lectures and activities held within churches and distribution of educational materials within church buildings.</p>	<p>Low</p> <p>Training church leaders to promote health activities and adapt lectures to include references. Space needed to hold activities. Dissemination of materials.</p>	<p>High</p> <p>After training, messages and activities are developed and promoted by members and leaders of the church.</p>	<p>Medium</p> <p>Project used a sophisticated evaluation framework. Outcome of interest was change in physical activity, but did not measure BMI directly.</p>	<p>N/A</p> <p>Intervention had little impact on physical activity behaviors.</p>

Table 5 (Continued)

Intervention	Resources required to implement	Degree of cultural adaptation	Quality of evaluation methodology	Observed effect on obesity
<p>Lifestyle Enhancement Program (LEP)²³</p> <p>An intervention designed for children combining counseling by nutritionists and physicians, focusing on fitness, behavioral therapy, and individualized weight management programs.</p>	<p>High</p> <p>Individual consultations with several professionals including nutritionists, physicians, fitness trainers, and behavioral therapist. Access to exercise facilities, healthy foods, and other services.</p>	<p>Low</p> <p>None specified in program description although the program has been used with African American and Latino children.</p>	<p>Medium</p> <p>Evaluation measured weight loss multiple times during intervention with long follow up period. No control group was used for comparison, but improvements are compared to other similar studies.</p>	<p>High</p> <p>Program achieved sustained weight loss over 1 and 2 year follow ups.</p>
<p>Healthy Eating and Active Lifestyles from school To Home for KIDS (HEALTH-KIDS)²⁴</p> <p>An intervention with lower socio-economic status, urban African American children to promote healthy eating and physical activity. Key components were increasing fruit and vegetable consumption, decreasing unhealthy food consumption, increasing exercise, and reducing sedentary activities.</p>	<p>High</p> <p>Comprehensive intervention aims to improve school, community, and family environment to support healthy changes in diet and exercise.</p>	<p>High</p> <p>Tailored to meet needs of lower SES African American communities.</p>	<p>High</p> <p>Evaluation will measure BMI, dietary intake, physical activity, and changes in the school, home, and community environments.</p>	<p>N/A</p> <p>Preliminary evaluation suggests that awareness of obesity increased, but no changes in obesity have been reported yet.</p>

Table 5 (Continued).

Intervention	Resources required to implement	Degree of cultural adaptation	Quality of evaluation methodology	Observed effect on obesity
<p>KidFit^{23,25}</p> <p>Intervention for children that allows participants to choose between fitness activities and nutritional counseling. Comprehensive clinical monitoring of body fat, girth, blood pressure, and other indicators helps participants observe progress.</p>	<p>High</p> <p>Consultation with health professionals including multiple counseling and activity sessions required.</p>	<p>Low</p> <p>None specified in program description although the program has been used with African American and Latino children.</p>	<p>Medium</p> <p>Evaluation measured changes in BMI and physical fitness over a short period.</p>	<p>Medium</p> <p>Although some small improvements were observed, program activity attendance declined over time.</p>
<p>Houston Parks and Recreation Department (HPARD) Park-Based Obesity Intervention²⁵</p> <p>Based on KidFit and targeted at African American and Hispanic youth, this 6 week intervention is designed to promote physical activity and nutrition among 6-12 year old children. The program involves structured fitness activities, access to community centers, cognitive nutrition curriculum. HPARD staff and facilities were used to support the program.</p>	<p>Medium</p> <p>Conducted by HPARD staff who were trained to provide counseling and lead activities.</p>	<p>High</p> <p>HPARD staff were recognizable members of the community. Fitness activities were accompanied by familiar music.</p>	<p>High</p> <p>Program evaluated with multiple assessment of BMI, knowledge, and physical testing.</p>	<p>Medium</p> <p>No changes in BMI were observed among participants, but physical performance and health knowledge improved.</p>

Table 5 (Continued).

Intervention	Resources required to implement	Degree of cultural adaptation	Quality of evaluation methodology	Observed effect on obesity
<p>Healthy Children, Strong Families (HCSF)²⁶</p> <p>An intervention among American Indian children currently underway in Wisconsin to improve physical activity and nutrition. The program trains community members to be mentors for children 2-5 years old and their families. Families will receive 12 lessons on nutrition and physical activity and participate in 3 group activities to support each other.</p>	<p>Medium</p> <p>Mentors must be trained. Travel and compensation for mentors to make household visits. Facility costs for group activities.</p>	<p>High</p> <p>Visits conducted by trained mentors from community. Project is being conducted in American Indian community in Wisconsin.</p>	<p>N/A</p> <p>Project intends to observe prevalence of obesity, CVD risk factors, and household/community risk factors contributing to obesity.</p>	<p>N/A</p> <p>This intervention is ongoing and has not yet been evaluated.</p>
<p>Yale Bright Bodies²⁷</p> <p>Intervention with children of different racial/ethnic groups. Intensive family-based program including exercise, nutrition, and behavior modification.</p>	<p>High</p> <p>Consultation with health professionals</p>	<p>High</p> <p>Tailored for the needs of inner-city minority children.</p>	<p>High</p> <p>Clinical measurement of BMI, body fat, cholesterol, and glucose tolerance.</p>	<p>Low</p> <p>Minor changes in body composition and insulin resistance, but no change in BMI or weight.</p>

Table 5 (Continued).

Intervention	Resources required to implement	Degree of cultural adaptation	Quality of evaluation methodology	Observed effect on obesity
<p>Hip hop to health junior^{28,29}</p> <p>Intervention conducted among Latino and African American children enrolled in Head Start centers that included a 14 week diet and physical activity program.</p>	<p>Medium</p> <p>Staff needed to conduct physical activities and conduct nutritional counseling.</p>	<p>High</p> <p>Lessons and activities were adapted to be culturally appropriate.</p>	<p>Medium</p> <p>Program evaluated with multiple assessment of BMI, knowledge and compared to control group without culturally adapted materials.</p>	<p>Medium</p> <p>Although the program did not achieve any long term changes in behavior among Latino children, the program was well-received by children, parents, and school personnel. Among African American children, BMI among students who participated in the program increased less than students who did not receive the intervention at 1 and 2 year follow ups.</p>
<p>WORD (Wholesness, Oneness, Righteousness, Deliverance)³⁰</p> <p>A faith-based lay health advisor intervention conducted through African American churches involving an 8 week behaviorally focused weight loss program.</p>	<p>Low</p> <p>Advisors are members of the church who undergo a 10 hours of training to support weight loss program.</p>	<p>High</p> <p>Intervention built on existing social networks within the church and adapted materials were used.</p>	<p>High</p> <p>Program used a pre- and post-tests and quasi-experimental design to assign treatment and control groups.</p>	<p>Medium</p> <p>After 8 weeks, treatment group lost 3 more pounds than control group and increased energy output. No longer term follow up available yet.</p>

C. Background articles

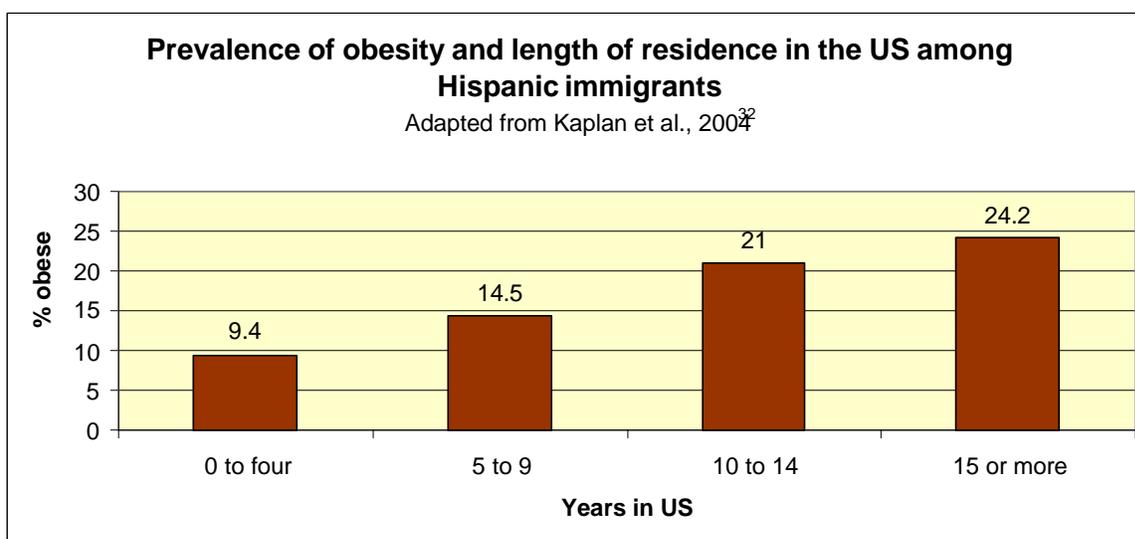
As described in the methods section, these articles were not studies of obesity interventions per se, but rather included background information drawn from the results of surveys, focus groups or the analysis of existing data. For these articles in particular, an effort was made to locate articles that focused on populations likely to be similar to African American and Hispanic/Latino communities in Wisconsin. In an effort to provide information that can directly inform the planning, implementation and evaluation of obesity interventions with these communities, potential implications of the articles in each of these areas are presented.

1. Acculturation

In addition to other types of diversity within Hispanic and Latino populations in the US, individuals' and sub-populations' degree of acculturation can also differ. Acculturation is a complex issue and definitions of the term vary. Some researchers have even suggested that "acculturation as a variable in health research may be based more on ethnic stereotyping than on objective representations of cultural difference."^{31(p973)} Nonetheless, others have found evidence that factors such as length of residence in the US and measures of acculturation based on the language(s) in which individuals think or communicate are associated with varying risk levels for a variety of health conditions, including obesity.

An analysis of data from the 1998 National Health Interview Survey, with 2,420 foreign-born Hispanic adults in the US, found an association between length of residence in the US and the risk of obesity.³² Hispanic immigrants who had resided in the US for 15 years or longer had a nearly four-fold greater risk of obesity compared to immigrants who had been in the US for less than five years. Also, as shown in Figure 3, the prevalence of obesity in this group was greater at each level of increased length of residence.

Figure 3.



The authors present several limitations of their study (i.e., the measures of obesity used were based on self-reported heights and weights, the cross-sectional design of the study prevented them from establishing a cause and effect relationship between length of residence and the risk of obesity), and also caution that looking only at length of residence in the US is an oversimplification of the issue of acculturation. Despite these limitations, it is clear that length of residence in the US, along with other measures of acculturation, merit consideration when designing obesity-related interventions with Hispanic/Latino populations.

Whether and how physical activity levels are associated with degrees of acculturation has also been studied by researchers. Another study looking at data from National Health Interview Survey as conducted in 2000 examined the responses of 4,558 individuals who considered themselves Hispanic or Latino.³³ Approximately two-thirds of the respondents (61.7%) were foreign-born, mostly from Mexico. The researchers created an “acculturation index” based on eight questions from the survey dealing primarily with what language is used, and looked for an association between scores on this index and whether individuals met current recommendations regarding leisure time and non-leisure time (i.e., work or task-related) physical activity. They found that physical activity was positively associated with acculturation (i.e., there were higher levels of leisure time physical activity among those most acculturated) but mixed results regarding non-leisure time physical activity. Another, smaller study which looked at the correlates of physical activity among urban, Midwestern Latinas found no relationship between levels of acculturation and physical activity.³⁴ The authors state, however, that they may not have found an association because they did not look at purposeful exercise versus physical activity engaged in at work or while completing daily tasks as separate variables. Again it seems clear that the relationship between acculturation and the risk of obesity is complex, but worth exploring when designing interventions with Hispanic/Latino populations.

Table 6.

Potential Implications for Obesity Interventions	
Issue	Population
Acculturation	Hispanic/Latino communities
Planning and Implementation	
<ul style="list-style-type: none"> • Consider whether sub-groups of your target population might be acculturated to different degrees and therefore may have differing risk factors for obesity. • Consider whether the intervention needs to be tailored to sub-groups based on differing levels of acculturation and lifestyles. 	
Evaluation	
<ul style="list-style-type: none"> • Consider examining evaluation results separately for more and less acculturated groups to determine whether your program is meeting the needs of sub-groups of the target population. • When evaluating physical activity levels, be specific about how you define it. Separate measures may be needed to capture leisure time and non-leisure time physical activity. 	
Related references ³¹⁻³⁴	

2. Obesity-related characteristics among a sample of low-income, urban, African American youth in the Midwest

While it is always desirable for designers of interventions to have an in-depth understanding of their target population, the results of a large study of obesity and related risk factors among low-

income African American youth in Chicago provide some “ballpark” estimates of the risk factors among similar groups in Wisconsin. This study involved a sample of 498 fifth through seventh grade students who attended four different Chicago public schools.³⁵ Students in the sample were predominantly African American (98%) and the sample included roughly equal numbers of girls and boys. Nearly 60% of the students’ households had annual incomes less than \$30,000, and only 13.5% of the households had annual incomes greater than \$40,000. The data were collected in 2003.

Table 7.

Selected Characteristics among a Sample of Low-income, Urban, African American Youth Adapted from Wang et al., 2007 ³⁵				
Data shown is based on 458 students	Percent			
Measures of overweight and obesity	Boys		Girls	
Overweight (BMI \geq 85 th but <95 th percentile)	21.8		14.9	
Obese (BMI \geq 95 th percentile)	17.7		25.1	
Sedentary behaviors				
Had TV in the child’s bedroom	85.3			
Had video game at home	88.8			
Daily TV/video game/computer time = five or more hours	33.1			
Physical activity				
Days in past 7 days w/ at least 30 min. of exercise	Light Exercise		Hard Exercise	
None	18.5		10.3	
1-2 days	34.7		28.1	
3-4 days	23.6		25.4	
\geq 5 days	23.2		36.2	
Travel to school	Walk	65.8	Bus	10.8
	Drop off	30.9	Bicycle	.7
Food choices				
Choose healthy foods when snacking	Never		10.8	
	Sometimes		64.9	
	Often		16.4	
	Always		7.9	
Do not like taste of most healthy foods	Very or a little true		57.1	
How often consumed over past 7 days	Fruits		Vegetables	
Once a day or less	46.6		54.8	
	Fried food		Soft drink	
2-3 times a day	35.6		48.3	
4 times day or more	19.5		22.0	
Always snack when watching TV	30.8			

Table 8.

Potential Implications for Obesity Interventions	
Issue	Population
Obesity risk factors	Low-income, urban African American youth
Planning and Implementation	
<ul style="list-style-type: none"> • Consider whether boys and girls might have different program needs. In this sample, approximately 40% of boys and girls were overweight or obese, but more boys than girls were overweight, while the prevalence of obesity was higher among girls versus boys. • Consider assessing the amount of “screen time” (TV, computer, video game) engaged in by your target population. In this study, a third of the students spent 5 or more hours per day in these sedentary activities. • Several interventions have attempted to increase physical activity among youth by encouraging more active forms of travel to school, however in this study 65.8% of students were already walking to school. • Consider if targeting food choices would be an appropriate goal. Students in this study ate few fruits and vegetables, consumed fried foods and soft drinks quite often, and reported regularly snacking while watching TV. Identifying appealing alternatives to fried foods and soft drinks may be crucial as just over half of the students reported not liking the taste of most healthy foods. 	
Evaluation	
<ul style="list-style-type: none"> • Analyze data for overweight and obesity separately for girls and boys. 	
Related references ³⁵	

3. Correlates of physical activity among urban, Midwestern Latinas and African American women

A group of researchers conducted interviews with African American women and Latinas living in Chicago to identify personal, social environmental and physical environmental factors that were correlated with physical activity, and to obtain the women’s recommendations for increasing exercise in their communities.^{34,36} They interviewed 399 African American women and 300 Latinas between the ages of 20 and 50 at health fairs, community clinics and (for African American women only) at Women, Infants and Children Program (WIC) clinics. The two groups had similar demographic characteristics, except that the African American women had higher levels of education, somewhat higher annual incomes and were more likely to be employed. The majority of women in both groups, however, lived in households with annual incomes less than \$35,000.

The two articles suggest subtle but interesting differences in which elements of the women’s social environments are correlated with physical activity levels. Among the African American women, those who knew people who exercised were more likely to be physically active than those who did not. However, those who said they see people exercise in their neighborhood were not more physically active than those who did not. The opposite pattern was seen among the Latina group, where knowing people who exercised was not correlated with higher physical activity levels, but seeing people exercise in the neighborhood was. Other aspects of their social environments such as belonging to community groups was not correlated with physical activity

for either group, and attending religious services was correlated with higher physical activity levels among Latinas but not for the African American women.

Responses to questions about their physical environments revealed the presence of factors that support physical activity as well as factors which could hinder it. Members of both groups reported that there were sidewalks in their neighborhoods, and places such as grocery stores within walking distance. Roughly 60% of respondents in each group reported that there were places to exercise in their neighborhoods, but the article did not provide details about the types of facilities. The African American women reported better street lighting at night than did the Latinas, nonetheless a larger proportion of the Latinas perceived their neighborhoods to be safe than did the African American women. Interestingly, perceptions of greater neighborhood safety were associated with higher physical activity levels among the African American women but not among the Latinas.

Recommendations for how to increase exercise in their communities were quite similar between the two groups. The most common recommendation was for more facilities in their neighborhoods. The women also noted that the facilities need to be safe, available at low cost, provide childcare, and include programming tailored for women. They also said that educational programming about the benefits of exercise and the proper use of exercise equipment would be helpful.

Table 9.

Potential Implications for Obesity Interventions	
Issue	Population
Physical Activity	Urban African American women and Latinas
Planning and Implementation	
<ul style="list-style-type: none"> Identifying neighborhood role models who are physically active may influence women to be more active themselves, though these studies suggest that different groups may define their role models differently (i.e., seeing women exercising in the neighborhood versus knowing women who exercise). Aspects of the physical environment such as adequate street lighting, places within walking distance and the presence of sidewalks likely encourage physical activity, but may not be enough to increase physical activity levels by themselves. Perceptions about safety in the neighborhood may be related to physical activity levels for some groups but not others. It may be worthwhile to explore in-depth what specific aspects of the physical environment would encourage physical activity for your target population. In terms of what would increase physical activity in their neighborhoods, the women in these studies recommended not just more facilities nearby, but safe, low-cost facilities that provide childcare and programming specific for women. Again, attempting to identify the specific factors that would encourage more physical activity for your target population is likely worthwhile. 	
Evaluation	
<ul style="list-style-type: none"> In evaluating the impacts of a physical activity intervention, be sure that variables are specific enough to enable you to identify the particular aspect of the intervention that were effective. 	
Related references ^{34,36}	

IV. Conclusion

As noted in the introduction to this report, smaller-scale interventions which focus on behavior changes at the individual level represent a vital component of comprehensive strategies to address obesity, but are unlikely to dramatically impact obesity rates on their own. Furthermore, in efforts to reduce and eliminate health disparities, structural and policy level changes are particularly important. In an often-cited paper on societal influences on obesity, Kumanyika states that structural changes should not be thought of as replacing individually targeted efforts, but in support of them. She states, "...without structural changes, individually oriented health promotion may inadvertently increase disparities between the more and less advantaged by only fostering risk reduction among those who find it feasible and affordable."^{37(p299)}

Table 10 below shows examples of the types of changes that have been proposed in comprehensive strategies to address obesity. While the specific recommendations differ, what these models have in common are broad changes on multiple levels. In each of these examples, public health practitioners have an important role to play.

Table 10.

Excerpts from multi-level strategies to address obesity		
Focus: General population ³⁷	Focus: Children ³⁸	Focus: Low-income, urban African American women ³⁹
<p><u>General</u></p> <ul style="list-style-type: none"> • Development of an intersectoral, national policy on obesity control • Educate government agency leadership about the inadvertent impacts of their policies on eating and physical activity 	<p><u>State and local level:</u></p> <ul style="list-style-type: none"> • Policymakers should build incentives to bring supermarkets back into underserved communities • Increase Food Stamp allowance so people can afford to buy healthy foods 	<p><u>Individual level</u></p> <ul style="list-style-type: none"> • Help African American women find culturally acceptable and gender-specific ways of integrating healthy diets and physical activity patterns into their daily lives
<p><u>Physical-activity-related</u></p> <ul style="list-style-type: none"> • Long-term planning of towns and city centers to promote walking and bicycling • Give incentives to employers who provide for physical activity breaks or release time 	<p><u>Federal level:</u></p> <ul style="list-style-type: none"> • Make physical education mandatory every day at every grade level • USDA should develop and implement nutritional standards for all competitive foods and beverages sold or served in schools 	<p><u>Community level</u></p> <ul style="list-style-type: none"> • Public health professionals, community agencies, women's groups, and civil rights organizations working together can create programs to make healthier food and safe places to exercise more available and affordable

Table 10 (Continued).

Excerpts from multi-level strategies to address obesity		
Focus: General population ³⁷	Focus: Children ³⁸	Focus: Low-income, urban African American women ³⁹
<u>Food and eating related</u> <ul style="list-style-type: none"> • Label the fat and caloric content of foods in restaurants and take-out establishments • Set and enforce guidelines for the fat content of school and hospital meals • Levy taxes on certain foods and use the revenues to support other health-promotion activities 	<u>Information environment</u> <ul style="list-style-type: none"> • Shift advertising during children's television programming to more healthful foods and beverages, if necessary • enact federal legislation to mandate the change on broadcast and cable television 	<u>Policy level</u> <ul style="list-style-type: none"> • Clinicians and public health professionals can enhance the effectiveness of more categorical efforts by joining others in the political arena to promote targeted policies that reduce disparities in education, access to health care, and income

In its January 2008 technical assistance manual for state and community partners implementing physical activity and nutrition programs aimed at reducing obesity and chronic disease, the CDC supports programs which target behavior changes in the following six target areas:

- Increase physical activity
- Increase the consumption of fruits and vegetables
- Decrease the consumption of sugar-sweetened beverages
- Reduce the consumption of high-energy-dense foods
- Increase breastfeeding initiation and duration
- Decrease television viewing⁴⁰

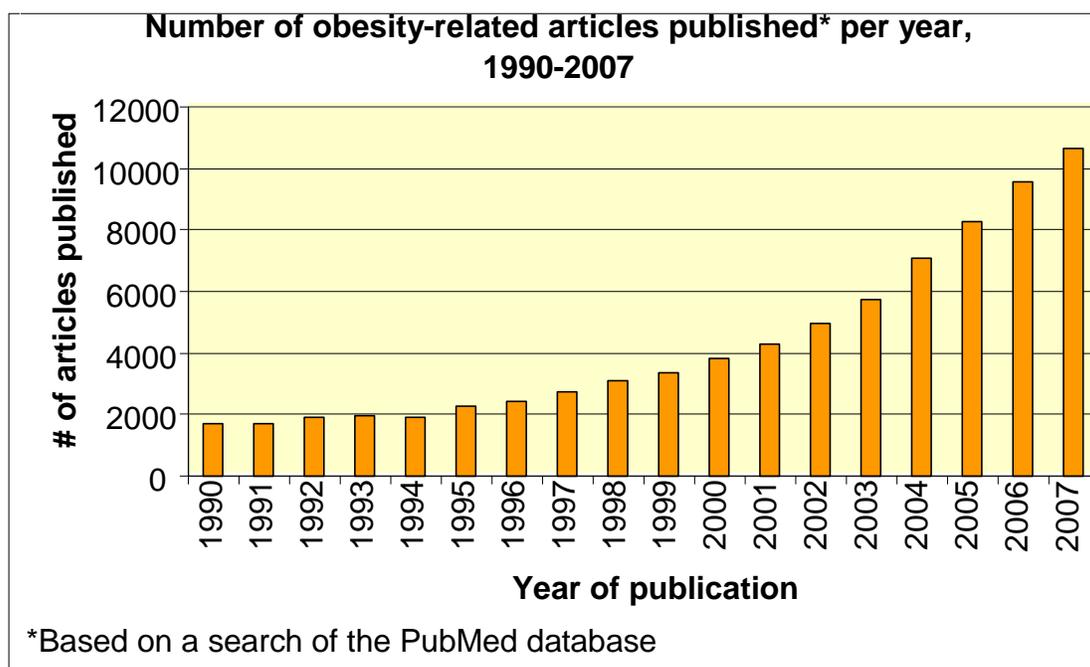
In the past, public health interventions have often targeted only individual-level behavior changes in these areas; however, in this document CDC also advocates a multi-level approach. They write, "Interventions to prevent and control obesity should include an approach that creates environments, policy and practices that support both the increase in physical activity and improvement in dietary behaviors within the target audience."^{40(p35)}

While the need for comprehensive, multi-level interventions to address obesity is becoming increasingly clear, given the considerable financial, organizational, political and other resources required to implement them, it is not surprising that few such interventions have been undertaken, much less rigorously evaluated. Early results from an intervention in the Boston, Massachusetts area, however, shed light on what may be possible with this type of approach.⁴¹ "Shape Up Somerville" is a three-year, environmental change intervention which utilized a community-based participatory research framework. The intervention focused on bringing children's energy intake and output into balance by increasing the availability of healthful foods and opportunities for physical activity, and thereby enabling the children to avoid unnecessary weight gain. The intervention was conducted with 1st – 3rd grade students from three culturally diverse urban cities in the Boston area, and aimed to reach these children in every environment they pass through during a typical school day (i.e., their before-, during- and after-school environments as well as home and community environments). Examples of the range of

components involved in the intervention include changes to the school breakfast and lunch programs, the provision of classroom curricula for teachers, parent outreach and education through newsletters and nutrition forums, local policy changes to increase pedestrian safety, a wellness campaign for city employees, trainings for local physicians and clinic staff, and a program to enable local restaurants to receive official designation as “Shape Up Somerville-approved.”

At the end of the first school year, children in the intervention school had gained less weight than children in the two controls schools, as indicated by a modest but statistically significant decrease in BMI z-scores. Results based on participation in the intervention for two school years are expected to be published in the near future. While the resources to undertake an intervention of this magnitude are significant, the first year results from Shape Up Somerville suggest that a thoughtfully-planned, comprehensive program conducted with significant community input can indeed make an impact on obesity.

Figure 4.



Addressing overweight and obesity is a formidable public health challenge. Many deeply rooted, structural aspects of our society encourage unhealthy eating habits and sedentary lifestyles. While a high prevalence of obesity is a problem for the country at large, racial and ethnic minority populations often bear the brunt of disproportionately high rates of obesity and their associated health conditions. Unfortunately, despite growing research attention on the topic in recent years (see Figure 4 above), we are still lacking evidence-based practices to tackle the issue in racial and ethnic minority communities or in the general population. While this means that we are currently without a potentially valuable tool, it does not mean that we are completely without direction in efforts to address obesity. In the meantime, practitioners will and should continue to

design, implement and evaluate programs to prevent and reduce overweight and obesity based on solid principles of public health practice and the best available science.

Appendix A:

Summary of The Community Guide’s Recommended Interventions to Promote Physical Activity (PA) Adapted from: Centers for Disease Control and Prevention, 2008 ⁴²	
Informational approaches to increasing PA	
Community-wide campaigns <ul style="list-style-type: none"> • Strongly recommended 	<ul style="list-style-type: none"> • Large-scale, sustained efforts with ongoing high visibility to promote PA. May involve use of television, radio, newspaper columns and inserts, and movie trailers. • Interventions have used multiple components including individually-focused efforts (e.g., support groups, risk factor screening at community sites) and environmental activities (e.g., community events, creation of walking trails). • Effective in increasing PA and improving physical fitness among adults and children.
“Point-of-decision” prompts <ul style="list-style-type: none"> • Recommended 	<ul style="list-style-type: none"> • Motivational signs placed near elevators and escalators to encourage people to use stairs. • Effective in increasing the number of people using stairs rather than escalators or elevators among various populations and in a variety of settings.
Behavioral and social approaches to increasing PA	
Individually-adapted health behavior change <ul style="list-style-type: none"> • Strongly recommended 	<ul style="list-style-type: none"> • Individual behavior change programs that are tailored to individual’s specific interests, preferences and readiness for change. • Many programs utilize health behavior change models such as Social Cognitive Theory, Health Belief Model of Transtheoretical Model of Change. • All programs addressed these skills: setting goals for PA and self-monitoring of progress, building social support for new behavior patterns, self-reward and positive self-talk, structured problem solving to enable maintenance of changes, and prevention of relapse into sedentary behaviors. • Effective in increasing PA and physical fitness among adults and children.
School-based physical education <ul style="list-style-type: none"> • Strongly recommended 	<ul style="list-style-type: none"> • Modifying curricula to increase time spent in moderate to vigorous activity during PE classes. • Interventions included substituting more active activities for less active ones (e.g., soccer vs. softball) and modifying game rules to increase activity (e.g., having entire team run bases together when batter makes a hit). • Effective in increasing PA and physical fitness among adolescents and children.

Appendix A (Continued):

Summary of The Community Guide’s Recommended Interventions to Promote Physical Activity (PA) Adapted from: Centers for Disease Control and Prevention, 2008 ⁴²	
Behavioral and social approaches to increasing PA (Continued)	
Non-family social support <ul style="list-style-type: none"> • Strongly recommended 	<ul style="list-style-type: none"> • Changing PA behavior through building, strengthening, and maintaining social networks that provide supportive relationships for PA. • Programs often involved setting up a “buddy” system, creating contracts with others to perform specific PA, or setting up walking groups. • Effective in increasing PA and physical fitness among adults.
Environmental and policy approaches to increasing PA	
Creation of and/or enhanced access to places for PA combined with informational outreach activities <ul style="list-style-type: none"> • Strongly recommended 	<ul style="list-style-type: none"> • Creating opportunities for PA by building or enhancing facilities and reducing barriers to facility use (e.g., reducing fees, changing operating hours). • Many programs included training in use of equipment, other health education activities and incentives such as screenings and counseling. • Effective in increasing PA and physical fitness among adults.

Appendix B:

Federal and State Health Objectives related to Overweight, Obesity and Physical Activity	
Healthy People 2010 Objectives*¹⁰	Healthiest Wisconsin 2010 Objectives⁷
Focus Area: Nutrition and Overweight	Health Priority: Overweight, Obesity and Lack of Physical Activity (obesity and overweight-related objectives)
Reduce the proportion of adults who are obese. (Objective 19-02)	Reduce the proportion of Wisconsin adults who are obese.
Reduce the proportion of children and adolescents who are overweight or obese. (Objective 19-03)	Reduce the proportion of Wisconsin children who are overweight.
Increase the proportion of persons aged 2 years and older who consume at least two daily servings of fruit and 3 servings of vegetables. (Objectives 19-05, 19-06)	Reduce the proportion of Wisconsin adolescents who are overweight.
Increase the proportion of persons aged 2 years and older who consume less than 10 percent of calories from saturated fat. (Objective 19-08)	
Increase good dietary quality of meals and snacks at schools. (Objective 19-15)	
Increase the proportion of worksites offering nutrition/weight management classes or counseling. (Objective 19-16)	
Increase food security among U.S. households. (Objective 19-18)	
Focus Area: Physical Fitness	Health Priority: Overweight, Obesity and Lack of Physical Activity (physical activity-related objectives)
Reduce the proportion of adults who engage in no leisure-time activity. Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day. (Objectives 22-01, 22-02)	Increase the proportion of Wisconsin adults who reported they engaged in any physical activities during the past month.
Increase the proportion of adolescents who engage in moderate physical activity for at least 30 minutes on 5 or more of the previous 7 days. (Objective 22-06)	Increase the proportion of Wisconsin adolescents who report they engaged in at least 30 minutes of moderate physical activity, on five or more of the previous seven days.

Appendix B (Continued):

Federal and State Health Objectives related to Overweight, Obesity and Physical Activity	
Healthy People 2010 Objectives*¹⁰	Healthiest Wisconsin 2010 Objectives⁷
Focus Area: Physical Fitness	Health Priority: Overweight, Obesity and Lack of Physical Activity (physical activity-related objectives)
Increase the proportion of the nation's public and private schools that require daily physical education for all students. Increase the proportion of adolescents who participate in daily school physical education. (Objectives 22-08, 22-09)	
Increase the proportion of trips made by walking. (Objective 22-14)	

*These are the federal Healthy People 2010 objectives within the nutrition and overweight and the physical fitness focus areas for which pre-formulated PubMed searches have been developed by Partners in Information Access for the Public Health Workforce. The five objectives shown in bold are those for which the pre-formulated searches were performed for this report.

Appendix C:

Characteristics of Systematic and Literature Reviews Included in Review			
Authors and Year of Publication	Title	# of Studies included in Review	Publication Years in search parameter†
Prevention Only			
Baranowski et al., 2002	School-based Obesity Prevention	20	1979-2001‡
Brown, Kelly & Summerbell, 2007*	Prevention of Obesity: A Review of Interventions	--	--
Campbell et al., 2001	Interventions for Preventing Obesity in Childhood: A Systematic Review	7	1985-1999
Campbell & Hesketh, 2007	Strategies which aim to Positively Impact on Weight, Physical Activity, Diet, Sedentary Behaviors in Children from Zero to Five years. A Systematic Review of the Literature	9	1995-2006
Doak et al., 2006	The Prevention of Overweight and Obesity in Children and Adolescents: A Review of Interventions and Programmes	25	1983-2004‡
Flodmark et al., 2006	Interventions to Prevent Obesity in Children and Adolescents: A Systematic Literature Review	11 studies + 17 review articles	--
Jago & Baranowski, 2004	Non-curricular Approaches for Increasing Physical Activity in Youth: A Review	9	1970-2002
Nwobu & Johnson, 2007	Targeting Obesity to Reduce the Risk for Type 2 Diabetes and other Co-morbidities in African American Youth: A Review of the Literature and Recommendations for Prevention	16	1997-2007‡
Summerbell, et al., 2003a (Update to Campbell, 2001 Cochrane Review above)	Interventions for Preventing Obesity in Children	22	1990-2005
Prevention and Treatment			
Bluford et al., 2007	Interventions to Prevent or Treat Obesity in Preschool Children: A Review of Evaluated Programs	7	1966-2005
Boon & Clydesdale, 2005	A Review of Childhood and Adolescent Obesity Interventions	77	1982-2004‡
DeMattia et al., 2007	Do Interventions to Limit Sedentary Behaviours Change Behaviour and Reduce Obesity? A Critical Review of the Literature	12	1995-2005

Appendix C (Continued):

Characteristics of Systematic and Literature Reviews Included in Review			
Authors and Year of Publication	Title	# of Studies included in Review	Publication Years in search parameter†
Prevention and Treatment			
Flynn et al., 2006	Reducing Obesity and related Chronic Disease Risk in Children and Youth: A Synthesis of Evidence with ‘Best Practice’ Recommendations	158 articles on 147 programs	1982-2003
Glenny et al., 1997	The Treatment and Prevention of Obesity: A Systematic Review of the Literature	99	1974-1997
McLean et al., 2003	Family Involvement in Weight Control, Weight Maintenance and Weight-loss Interventions: A Systematic Review of Randomised Trials	21 articles on 16 programs	1966-2000
Reilly & McDowell, 2003**	Physical Activity Interventions in the Prevention and Treatment of Paediatric Obesity: Systematic Review and Critical Appraisal	7	--
Stice et al., 2006	A Meta-Analytic Review of Obesity Prevention Programs for Children and Adolescents: The Skinny on Interventions that Work	46 articles on 64 programs	1980-2005
Story, 1999	School-based Approaches for Preventing and Treating Obesity	12	1965-1999
Yancey et al., 2004	Population-based Interventions Engaging Communities of Color in Healthy Eating and Active Living: A Review	23	1970-2003
Whitlock et al., 2005	Screening and Interventions for Childhood Overweight: A Summary of Evidence for the US Preventive Services Task Force	67	1996-2004
Treatment Only			
Clemmens & Hayman, 2004	Increasing Activity to Reduce Obesity in Adolescent Girls: A Research Review	7	1980-2003
Cole et al., 2006	An Integrative Research Review: Effective School-Based Childhood Overweight Interventions	10	1982-2001‡
Epstein et al., 1996	Exercise in Treating Obesity in Children and Adults	13	1965-1994
Hennrikus & Jeffrey, 1996	Worksite Interventions for Weight Control: A Review of the Literature	44	1968-1994‡

Appendix C (Continued):

Characteristics of Systematic and Literature Reviews Included in Review			
Authors and Year of Publication	Title	# of Studies included in Review	Publication Years in search parameter†
Prevention and Treatment			
Lindberg & Stevens, 2007	Review: Weight-Loss Interventions with Hispanic Populations	11	1980-2006
Snethen et al., 2006	Effective Weight Loss for Overweight Children: A Meta-Analysis of Intervention Studies	7	1980-2002
Summerbell et al., 2003b (Cochrane Review)	Interventions for Treating Obesity in Children	18	1985-2001

†In most cases, the dates in the table represent the parameters used by the authors in their literature searches. Where this information was unavailable or unclear, the actual publication years of the articles included in the review are shown. These are noted with the symbol ‡.

*This was a supplement to 3 previous review projects rather than a review of individual studies.

**This is a review of 7 studies, plus a “re-review” of 3 studies reviewed by authors in a previous publication.

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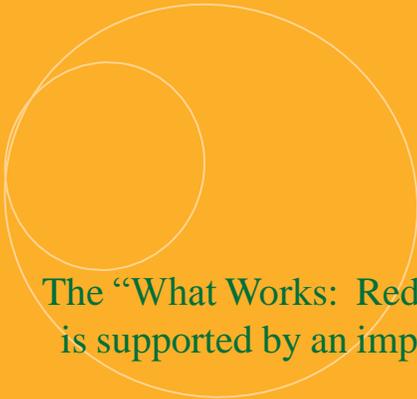
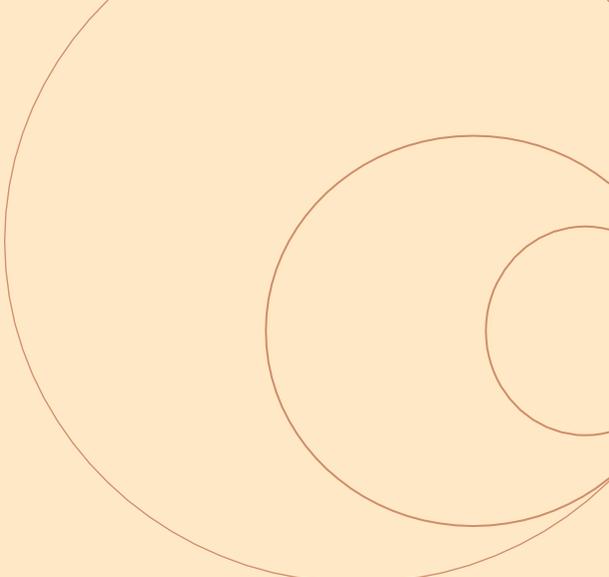
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