



**SOCIAL  
DETERMINANTS  
OF OBESITY  
IN THE  
MAGNOLIA  
STATE**

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## Preface

Place Matters is an initiative of the Joint Center for Political Studies' Health Policy Institute (HPI). The belief that where you live impacts your health is a premise of Place Matters. This concept was demonstrated several times over in the "Unnatural Causes" film series produced by California Newsreel with support from HPI. The Place Matters initiative also relies on the social determinants of health framework. Social determinants of health are conditions, systems, and aspects of the surrounding local, national, and global environment that affect the health of a population. For example, polluting factories surrounding neighborhoods can agitate asthmatic and pulmonary conditions. The social determinant of health approach is vital to unearthing all of the factors that prevent health equity.

Health disparities are traditionally addressed from the fields of Medicine and Public Health. Because of this tradition, using the social determinants lens to examine health disparities can present a challenge to health professionals accustomed to working solely within their fields. It can also be difficult to appeal to key players of other sectors who are not convinced that their work intersects with health. This report was requested by the Mississippi Place Matters teams to identify and document specific social determinants of obesity in their communities. The findings and recommendations of this report will be used by the Place Matters Teams to begin new partnerships and address the social determinants of obesity with upstream solutions in the form of policy action.

It is well known that rates of overweight and obesity have risen tremendously in the last 30 years and that the epidemic disproportionately affects communities of color in the United States. This epidemic is costly. Obesity is associated with a host of related diseases, decreased life expectancy, higher hospital charges, and an estimated \$117 million dollars are spent each year on medical expenses and lost productivity associated with obesity. Mississippi has the highest rate of adult obesity nationwide and is ranked 8th for childhood obesity. The Kaiser Family Foundation (2007) states that 67% of adults in Mississippi are overweight or

obese. Mississippi has been chosen as a focus for this report because of the work of the Place Matters Teams in the state. Mississippi has two teams; the Mid Delta Team consisting of Coahoma, Sunflower, and Washington Counties and the South Delta Team representing Sharkey and Issaquena counties.

For the state of Mississippi race, education, the built environment, or where people live, and environmental factors contribute to the obesity epidemic. The state of Mississippi has a history of racism, or disadvantage and discrimination based on race. Racism impacts health. Studies of African American women demonstrate that perceived racism affects the birth weight of their babies. Policies that are race-biased, for example the National Housing Act of 1934, may covertly perpetuate disadvantage by creating inequalities in access to good and services.

Like race, education is social determinant of health. This is particularly relevant for the Mississippi Place Matters Teams. Forty-one percent (41%) of the residents in Issaquena County have not received a high school education. The more education an individual receives, the higher income he or she will be able to attain over a lifetime. Beyond the foundation for financial stability, education is a social determinant of health due to the health supports, such as school nurses and school meals, connected with schools.

The built environment is another social determinant of health as it predicts access to quality food, opportunities for physical education, safety, and economic conditions. More than 40% of the residents in Coahoma and Issaquena counties, both extremely rural counties, earn incomes below the federal poverty line. Living in a rural setting has proven to be a predictor of obesity and areas of concentrated poverty are shown to have decreased access to quality foods.

Race, education, and the built environment are identified as social determinants of health that contribute to obesity. The social determinants of obesity span several industries. A Place Matters Team reflecting this diversity is needed to address the issues. Another key component of the Place Matters initiative relies on

upstream solutions to address the social determinants of health. Upstream solutions attack the root cause of a problem. Many of these solutions take form as policy action. Teams should work to introduce and implement policies that promote everything from better foods for communities to economic development provisions that will provide jobs and greater economic security for residents.

The work of the Mississippi Place Matters Teams is critical in the move toward health equity. Overweight and obesity threaten the health of our nation and future generations. A reduction in the rates of overweight and obesity will increase the health of our communities leading to longevity, decrease health spending, and provide an equipped workforce.

We are grateful to Bianca Pullen for preparing this report and to the members of the Joint Center staff who have contributed to the preparation, editing, design, and publication of this report. We are also grateful to the Congressional Hunger Center for selecting the Joint Center as a policy site for the Bill Emerson National Hunger Fellowship and look forward to our continued partnership.

Ralph B. Everett  
President and CEO  
Joint Center for Political and Economic Studies

## Introduction

Individuals and families are robbed of the opportunity for good health, active living, and extended life as the result of being overweight and obese. These personal health effects cannot be quantified in dollar amounts, it is estimated that millions of dollars are spent each year treating obesity related health conditions.

Researchers attribute the current epidemic of obesity to the conveniences of modern life that entail decreased physical activity, as well as easy access to and increased intake of high calorie foods.<sup>1,2,3</sup> One economic theory suggests that advances in technology have increased income and decreased the cost of calories<sup>4</sup> and Maziak, et al., state that as marketing efforts have become more aggressive, people consume more.<sup>5</sup> Others suggest that weight is the result of genetic pre-disposition.<sup>6</sup> These claims have a high degree of validity and play a role in the current epidemic. A true and thorough understanding of the myriad of causes contributing to the obesity epidemic is required to build strong interdisciplinary partnerships and develop effective policy solutions.

Social determinants of health are conditions, systems, and aspects of the surrounding local, national, and global environment that affect the health of a population. Specific contributing factors include land use policies, transportation, education policy, individual and household income, and food security. Many of these factors are connected in a cause and effect relationship. The social determinants that impact obesity are diagramed below (Figure 2.). The obesity epidemic is often reduced to an issue of personal responsibility and solutions are sought through physical activity and nutrition alone. Further examination uncovers issues and circumstances that impact physical activity and nutrition and also extend beyond scope of individual responsibility. For example, children will not have the opportunity for physical activity if their schools do not provide a period for physical education or if their neighborhoods have been built without playgrounds. In this example, education policy, housing policy, and community development are social determinants of health that predict a lack of physical activity which can contribute to overweight and obesity. Using the social determinants of health paradigm will provide the knowledge necessary to develop policy solutions.

Figure 1

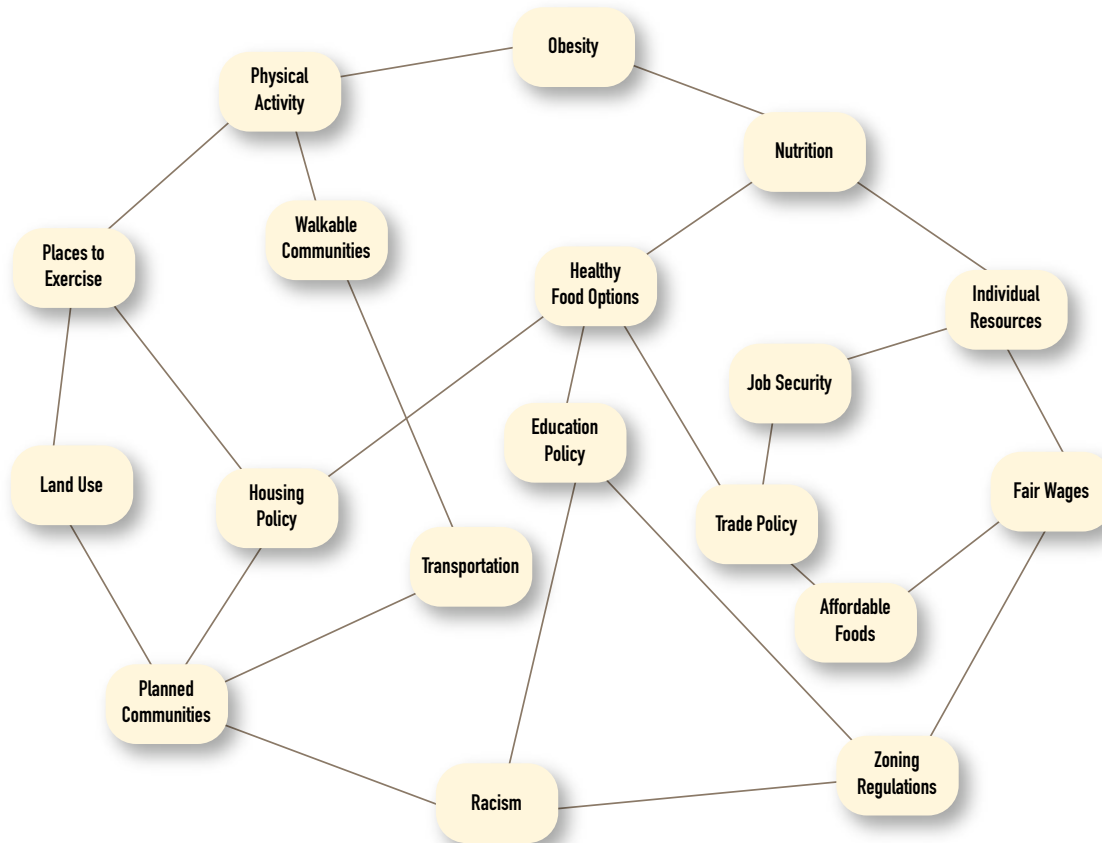
### Health Consequences of Obesity:

- Hypertension
- Osteoarthritis
- High cholesterol
- Type 2 diabetes
- Heart disease
- Stroke
- Gallbladder disease
- Sleep apnea
- Some cancers
- Complications of pregnancy
- Menstrual irregularities
- Excessive body and facial hair
- Depression
- Increased mortality

Sources: Centers for Disease Control and Weight Control Information Network

Figure 1

## Web of the Social Determinants of Obesity



## National, State and County Demographics

Mississippi has been chosen as a focus for this report because of the work of the Place Matters Teams in the state. Two of the Place Matters teams, serving Coahoma, Issaquena, Sharkey, Sunflower, and Washington counties, are focusing their efforts on upstream, policy-oriented solutions to fight the epidemic. Upstream solutions are reached by identifying and addressing the root cause of a problem. The findings and recommendations of this report will be used by the Place Matters Teams, public health professionals, advocates, community planners, and policy makers to address the social determinants of obesity with upstream solutions and policy action.

The state of Mississippi has the highest rate of adult

obesity in the United States. According to the Behavioral Risk Factor Surveillance System (2007), 68.1% of the people surveyed identified themselves as overweight or obese. Of this total, 64.6% were whites and 74.6% people of color.<sup>7</sup> The Kaiser Family Foundation (2007) states that 67% of adults in Mississippi are overweight or obese, yet only 68% of Mississippians have exercised within the past month compared to 76% nationally.<sup>8</sup> The fact that a portion of the people who are obese are also exercising is puzzling. This evidence suggests that physical activity alone is not the solution to obesity. Stakeholders must impact all of the factors that influence food choice and consumption and physical activity for residents of Mississippi.

A survey of the state and county demographics provides the foundation for the identified social determinants of obesity: **race**; the **built environment**; and **educational systems**. The statistics in Table 1. are grouped relative to their pertinent social determinant. With respect to race and ethnicity, all of the counties have an African American population between 62.8% and 69.9% and a Caucasian population between 29.3% and 36.3%. The opposite is true for the state as a whole; 60.9% of the state population is Caucasian and 37.1% African American. The Place Matters counties are predominantly African American, while the state as a whole is predominantly Caucasian.

The Mid and South Delta regions of Mississippi covered by Place Matters are impoverished. According to the 2000 census, Issaquena and Sharkey Counties have the second and tenth (respectively) lowest per capita income in Mississippi. Each of the five Place Matters counties has at least twice the rate of unemployment and an average household income at half of the national average. More than 40% of the residents in Coahoma and Issaquena counties earn incomes below the federal poverty line. Further, Issaquena county has suffered a 26% population loss since 2000. These desperate economic conditions are included in the **built environment**, a social determinant of obesity to be discussed later in this report. Food availability is essential to maintain good health, and represents another component of the built environment. According to a 2005 report from the United States Census Bureau,

Issaquena County does not have a single grocery store. Grocery stores are defined as supermarkets and other grocery (except convenience) stores that primarily sell fresh, canned and frozen foods from each food group.<sup>9</sup>

Coahoma County hosts the Coahoma Community College in Clarksdale, two public school districts, and one private school and Sunflower County is the home of Mississippi Delta Community College. Washington and Sharkey counties do not have institutions of higher education. There are no schools in Issaquena County; children attend school in Sharkey or Washington Counties. Forty-one percent (41%) of the residents in Issaquena County have not received a high school education. Overall, individuals in the five counties receive less high school and college education than individuals nationwide. Education is essential and can provide a foundation for financial success. Beyond the foundation for financial stability, **education** is a social determinant of health due to the health supports connected with schools. Schools often offer meal programs, including free and reduced breakfast and lunch, school nurses, and extracurricular programs that can act as a safety net for children. Conversely, health impacts education. In general, healthy children have less sick days and spend more time in the classroom.

## Place Matters

A national initiative of the Joint Center for Political and Economic Studies, the Health Policy Institute (HPI) is designed to improve the health of participating communities by addressing social conditions that lead to poor health. Our national learning community consists of 16 Place Matters Teams responsible for designing and implementing strategies that address the social determinants of health impacting residents in 24 jurisdictions. HPI provides technical assistance to participating Teams in the forms of facilitation, technical assistance grants, access to data, and Design Lab meetings that include national level experts and peer-to-peer learning opportunities.

**Table 1**
**National, State, and County Demographics** <sup>10, 11, 12, 13</sup>

	Coahoma	Issaquena	Sharkey	Sunflower	Washington	Mississippi	U.S.
<b>Race</b>							
<b>Caucasian</b>	29.3%	36.3%	29.4%	28.9%	33.9%	60.9%	80.1%
<b>African American</b>	69.2%	62.8%	69.3%	69.9%	64.6%	37.1%	12.8%
<b>Hispanic/Latino</b>	0.90%	0.44%	1.31%	1.30%	0.84%	1.8%	14.8%
<b>American Indian/ Alaska Native</b>	0.47%	0.09%	0.18%	0.09%	0.09%	0.5%	1.0%
<b>Asian/Pacific Islander</b>	0.36%	n/a	0.27%	0.40%	0.27%	0.8%	4.6%
<b>Education</b>							
<b>&lt;High School</b>	37.8%	41.2%	39.4%	40.7%	33.5%	27.1%	19.6%
<b>High School</b>	21.5%	31.2%	28.8%	25.6%	28.7%	29.4%	28.6%
<b>Some College</b>	24.5%	20.5%	19.2%	21.7%	21.4%	26.6%	27.4%
<b>Public School Districts</b>	2	0	1	3	4	n/a	n/a
<b>Built Environment</b>							
<b>Population</b>	27,543	1,675	5,571	30,964	55,644	2,910,540	299,398,484
<b>Pop. loss since 2000</b>	3%	26%	15%	10%	11%	n/a	n/a
<b>Persons per sq. mile</b>	55	6	15	50	87	60.6	79.6
<b>Rural-Urban Continuum code</b>	5	9	9	5	5	n/a	n/a
<b>Unemployment Rates</b>	9.5	7.9	8.5	9.7	8.9	5.9	4.7
<b>Median HH Income</b>	\$23,728	\$22,629	\$24,297	\$25,225	\$25,155	\$33,090	\$44,334
<b>Grocery stores in the county</b>	10	0	3	15	20	n/a	n/a

# Social Determinants of Obesity

## A Brief History of Race in the Delta

The state of Mississippi has a history of disadvantage and discrimination based on race. In *Confederate Lane: Class, race, and ethnicity in the Mississippi Delta*, Adams and Gordon<sup>14</sup> explore the complexities of race and class in Greenville, Mississippi and surrounding counties of the Delta. The paternalistic relationship of slavery between White land-owners and Black sharecroppers continued into the mid-20th century, after sharecroppers purchased land from former plantations. Labor relations between Blacks and Whites were based on the White belief that Blacks were “intellectually and morally inferior to Whites.” In 1890, the Mississippi state constitution disenfranchised Black male and poor White male voters by requiring that a citizen be able to read the constitution in order to vote. The Civil Rights Act of 1957 ensures the right to vote for all people. “In the Delta, relations based on race and class have, historically, been the most important bases for political solidarities.”<sup>15</sup> The right to vote has granted Black Mississippians more political power. Currently, Mississippi has the largest number of Black elected officials in the United States.

The tale of segregation in the education system of the Mississippi Delta is much less positive. Adams and Gordon (2006) provide an abbreviated history of racism and classism throughout the educational system in this region. The 1892 case of *Plessy v. Ferguson* legalized segregation in the United States. In the 1920’s, public school funds were directed almost exclusively at building, maintaining and staffing White schools in Greenville. Lessons about the Confederate heroes of the civil war were taught, while working-class and ethnic stories were left out of the curriculum.

The court ruling in *Brown v. Board of Education of Topeka* (1954) declared segregation unconstitutional. In 1964, the Civil Rights Act encouraged desegregation of public schools. In 1969, the United States Supreme Court ordered the immediate desegregation of all public schools. In response, upper-class Whites created private schools to maintain racial separation in the Mississippi Delta and elsewhere. Following desegrega-

Figure 3

## Timeline of Race Relations in the U.S. and the Mississippi Delta

1870	Black, White immigrant, and Chinese Immigrant sharecroppers purchase former plantation land.
1883-1930	97 recorded lynchings in the Delta
1890	Poor Black men, poor White men, and women cannot vote.
1896	<i>Plessy v. Ferguson</i> -legalized segregation
1920's	Public school funds unequally distributed to Whites advantage.
1930's	Farm Security Administration-homes built, segregated by race.
1948	Executive order issued by Harry Truman integrates U.S. Military.
1954	<i>Brown v. Board of Education</i> -segregation of schools is unconstitutional
1964	Civil Rights Act-separate but equal.
1965	Voting Rights Act-all have the right to vote.
1969	U.S. Supreme Court-Order: public schools desegregated
2007	Segregation continued by school district zoning.

tion of public schools in Greenville, Mississippi, White enrollment decreased dramatically. White parents who could afford tuition enrolled their children in private schools or in some cases turned to home-schooling. The White middle class sent their children to parochial schools, while the Black middle and upper class sent their children to Catholic schools.<sup>16</sup> Segregation had been outlawed by the Supreme Court however, privilege permitted its existence.

According to a report produced in 2007 by the American Civil Liberties Union, reconfigured school districts in Mississippi have limited minority attendance. Jones County is one example, where attendance zones have been drawn to ensure that the black population does not exceed 10%.<sup>17</sup> In 1954 (the year of *Brown v. Board of Education*) schools in the South there had one in 100,000 Black students enrolled in majority White schools. By 1988 desegregation peaked with 435 Black students for every 1,000 White students. As of 2005, the number of Black students in majority White schools has fallen to 270 per 1,000.<sup>18</sup> These statistics suggest an alarming trend of racial resegregation that exists, and threatens to continue, in many school districts throughout the United States, despite increasing racial and ethnic diversity.

Compounding the injustice of denied political power and unequal education, the FSA perpetuated discrimination in housing. The United States Department of Agriculture's Farm Security Administration (FSA), created in the mid 1930's by the New Deal, divided failed plantations into plots of land and built homes - properties were segregated by race. Sixty-six percent of the properties were reserved for White sharecroppers, although 75% of farm tenants at the time were Black. Class and racial segregation continue today as Whites and privileged Blacks seek "safety" in gated communities and private schools.<sup>19</sup> This phenomenon is not limited to rural Mississippi communities. Rather, this problem is shared in many metropolitan communities throughout the country. Racism mediated by residential segregation leads to reduced access to resources and opportunities, and inequality in education.<sup>20</sup>

## Race

Race is a social determinant of health. Racial disparities in health are well documented. This fact is particularly relevant to the status of obesity in Mississippi, as 74.6% of the overweight and obese population is comprised of people of color while seeking solutions, it is important to consider the effect of racism on this health disparity. Racism is deeply embedded in individual behavior, institutions, and policies. Dr. Camara Jones, Director of Research on the Social Determinants of Health at the Centers for Disease and Control, identifies three levels of racism: personally-mediated, internalized, and institutionalized.<sup>21</sup> Each of these classifications has a profound impact on health. Personally-mediated racism results in prejudice and discrimination. Prejudice and discrimination result from assumptions of character and can lead to specific acts such as hate crimes. Perceived prejudice is shown to be a predictor of birth weight and preterm birth for babies of African American women.<sup>22,23</sup> Internalized racism leads to complacency of the oppressed race. With this form of racism, the oppressed race accepts the implied lesser position in society and may even turn to various forms of self-hatred.<sup>24</sup>

The idea of institutional racism is defined as "differential access to the goods, services, and opportunities of society by race." Institutional racism is often covert and manifests itself in policies. The history of race and class in the Mississippi Delta, as detailed by Adams and Gordon, pinpoints forms of institutional racism. Racist policies were created to leave one group of people at a great disadvantage. There were many examples of policies that were overtly (segregation) and covertly (must read the constitution to vote) race-biased. "Redlining" of the 1930's is another example of a policy, initiated by the National Housing Act, that created mortgage discrimination in the housing market, preventing many Blacks from securing mortgage loans in White neighborhoods. This type of covert racism creates inequalities in living conditions, education, access to food, health, and health care.

Policies that do or do not fund public health programs,

such as Medicaid, may be viewed as race-biased due to the number of racial minorities that are served by the program. Anti-obesity advocates must remain observant for policies that dictate or influence the quality of food and opportunities for physical activity that are race-biased.

The American Civil Liberties Union claims that the United States continues to miss the mark in eliminating racial and ethnic discrimination. It calls for the United States to: enforce employment rights, enforce housing and lending rights, enforce education rights, enforce anti-discrimination laws in all U.S. states and territories, and evaluate laws and regulations that create and perpetuate racial discrimination.<sup>25</sup>

Dr. Camara Jones recommends that advocates ensure that racism is included in any conversation on health

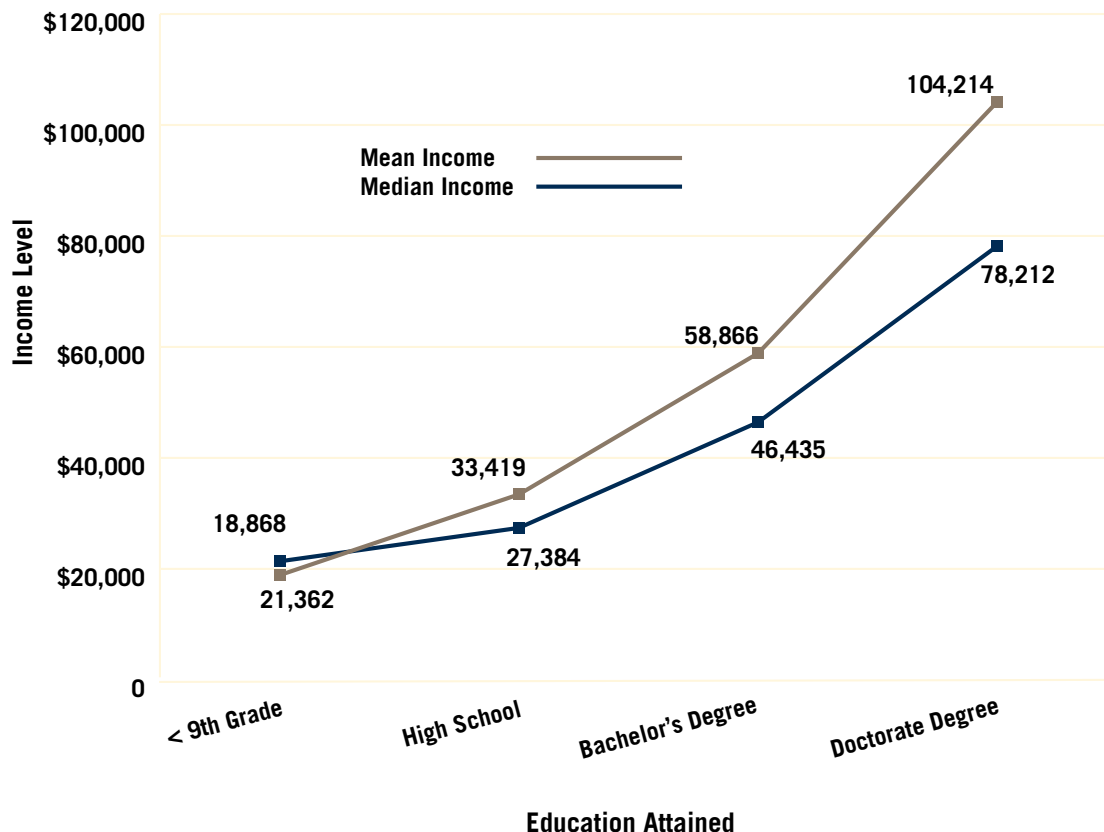
disparities. Dr. Jones also recommends examining policies, structures, practices, and norms that perpetuate racism.<sup>26</sup> It will take courage and determination to ensure that race is addressed as a constructive part of policy change, but it is necessary to combat racism to improve health.

### Educational Systems

Education is a social determinant of health. It's important to ensure that all people in the Delta have access to education. The more education an individual receives, the higher income he or she will be able to attain (Figure 4.). Not only are higher incomes linked to greater food security, but they also lead to economic security, which can provide individuals with more money to buy food.<sup>27</sup> With more money for food, families are able to purchase healthier items.

**Figure 4**

**Income Levels by Educational Attainment (25 years old+)**



School policies within the educational system are social determinants of health. Currently, most obesity-related advocacy projects within school systems focus on nutrition, marketing, and physical activity. Specific efforts related to school nutrition include increasing the visibility and availability of healthy food and beverage choices, changing school menus and regulating competing food items.<sup>28</sup> Other efforts serve to create “responsible marketing [that] can play a positive role in improving children’s diets and exercise behavior.”<sup>29</sup>

Seventy-nine percent (79%) of African American girls do not meet the recommendation to be active for 60 minutes, 5 days per week. Advocates are also targeting the infrequency and lack of physical education (PE) in schools.<sup>30</sup> Recent reductions in PE have been attributed to cuts in state and local budgets. In addition to curriculum, the way schools are designed can encourage or discourage physical activity and healthy eating. As schools are remodeled, designed, and built, obesity can be addressed in the intentional design of space.<sup>31</sup>

Education is a social determinant of health due to the ability to earn a higher income, because of the school policies that impact nutrition and physical activity, and because of the health supports available at many schools. School nurses provide an additional source of health care and monitoring as they may check Body Mass Index, an indicator of body weight. School meals, such as school breakfast and school lunch, provided by schools ensure all children have access to nutrition through affordable meals.

## **Built Environment**

The built environment is a social determinant of health. Low-income communities often feature fewer opportunities for physical activity.<sup>32</sup> Studies show that when parks are available, people tend to use them, and when communities are walkable, physical activity increases.<sup>33</sup> Lower overweight and obesity rates are often the result. People are more likely to walk when destinations (schools, commerce, jobs) are close to homes. Local policies can be used to manipulate or structure land use.<sup>34</sup>

Another component of the built environment is related to safety, if communities are not safe residents will not go out to exercise. Crime and violence can also serve as a barrier to physical activity. In communities with prevalent violence and crime, parents often limit their children to indoor play as a matter of harm reduction.<sup>35</sup>

A large body of research supports the idea that sprawl, or the spreading out of communities, contributes to obesity. The built environment includes how communities are planned and designed. Smart Growth America reports that when you control for certain factors, Body Mass Index increases with sprawl, often in suburban communities that surround metropolitan areas. The rural communities of Mississippi face similar geographic circumstances because families are miles from the major cities in their counties. Overweight children under the age of 5 are more likely to live in rural areas.<sup>36</sup> Living in a rural area is a risk factor for obesity.<sup>37</sup>

The built environment also predicts access to quality food. Low-income neighborhoods and communities of color often have fewer grocery stores.<sup>38</sup> A study assessing food availability in Mississippi, North Carolina, Maryland and Minnesota found that wealthier neighborhoods had more supermarkets and gas stations with convenience stores than poor neighborhoods. This study also found four times more supermarkets were located in White neighborhoods, in comparison to Black neighborhoods.<sup>39</sup> Households that are surrounded by fast food restaurants and convenience stores instead of grocery stores and produce markets have higher rates of obesity. Some argue that this is the continuation of segregation.<sup>40</sup> It is well known that food choices made at fast food restaurants and convenience stores usually consist of high calorie items. These items are less nutrient-dense and often include few fruits and vegetables.

For long-term success, the community food security approach should be used to change food systems as a whole.<sup>41</sup> Using the experience of a broad coalition, the community food security approach seeks interdisciplinary solutions to hunger in communities. This approach extends beyond the provision of food

**Figure 5**

## **Principles of Community Food Security**

### **Low-Income Food Needs**

- Meeting the food needs of low income communities.
- Reducing hunger and improving individual health.

### **Broad Goals**

- Community development.
- Farmland and family farms.
- Inner city supermarkets.
- Rural community growth.
- Air and water quality.
- Distribution.

### **Community focus**

- Build up a community's food resources to meet its own needs.
- Farmers' markets, gardens.
- Transportation.
- Community-based food processing ventures

### **Self-reliance/empowerment**

- Build individuals' abilities to provide for their food needs, community and individual assets.
- Engage community residents in all phases of project planning, implementation, and evaluation.

### **Local agriculture**

- Stable local agricultural base.
- Increased access to markets that pay a decent wage for farmer's labor.
- Planned protection of farmland from suburban development.
- Build stronger ties between farmers and consumers.

### **Systems-oriented**

- Inter-disciplinary, crossing many boundaries and incorporating collaborations with multiple agencies.

and addresses individual and community economic security, community relations, and empowers residents to become self-reliant. Explanations of the six basic principles of the community food security model are detailed in Figure 5.<sup>42</sup>

## **Unlikely Connections to Obesity**

In addition to race, education, and environment, researchers show an association between lack of daily flossing with obesity and the tendency to be overweight.<sup>43</sup> Obesity has been shown to be a risk factor for periodontal disease in adults between ages 18-35.<sup>44</sup> The relationship between oral health and obesity warrants additional research. All aspects of dental care should be reviewed as possible interventions to curb the obesity epidemic.

Some theories support the connection between the emission of greenhouse gases, climate change, and increasing food costs.<sup>45</sup> Climate change has been blamed for shortened growing seasons, floods that destroy crops, and drought. All of these dramatic changes to the environment lead to increasing food costs.<sup>46, 47, 48</sup> This leaves low-income families particularly vulnerable as food costs continue to rise. Drewnowski and Spector (2004) state that the highest rates of obesity are found in populations with less education and higher poverty rates. Their research provides evidence exhibiting the links between diet quality and income disparities. Drewnowski and Spector conclude that households in poverty are more likely to purchase low cost, energy dense diets which include the "least fruits and vegetables and milk."<sup>49</sup>

## Opportunities Created by Reducing Obesity

### Improved Health Status and Environment

The list of health consequences from obesity is lengthy, but a decrease in obesity will lead to a decrease in a host of associated morbidities and mortality. Lowering rates of obesity in school-aged children may even lead to increased self esteem, as studies show that overweight and obese children are less accepted by peers and seen as less athletic than children of normal weight.<sup>50</sup>

A study in King County, Washington found that a 5% increase in the walkability of a neighborhood was associated with a 32% increase in physical activity, and 5.5% fewer grams of emitted pollutants.<sup>51</sup> Increasing the walkability of a community has the ability to promote more physical activity and contribute to a green environment by reducing air pollution and greenhouse gas emissions.<sup>52</sup>

### Economics

With a decrease in obesity comes an opportunity to reduce health care expenditures. People who are physically active have lower annual medical expenses than inactive people. There is also a reduction in absenteeism for people who are physically active.<sup>53</sup> Obesity is associated with higher hospital charges,<sup>54</sup> and an estimated 117 million dollars spent each year on medical expenses and lost productivity associated with obesity.<sup>55</sup>

Twenty percent (20%) of the men and 40% of the women that are of recruiting age nationwide exceed the weight requirements for military service. These concerns extend beyond recruits to active-duty members and veterans.<sup>56</sup> The number of recruits denied entrance to the military is increasing, as waistlines continue to grow. A reduction in prevalence in overweight and obesity can lead to increased productivity and membership for the United States Military.

### Education

A study of elementary school children in Philadelphia categorized their weight into relative categories established by the Institutes of Medicine and demonstrated that “overweight” children were absent significantly more often than children with a “normal weight.”<sup>57</sup> Heavier children are at greater risk for school absenteeism. Reduced absenteeism increases productivity in the classroom, yielding greater numbers of students prepared to advance to higher education.

Providing children with healthy foods through school nutrition programs is seen as a viable solution to obesity. School nutrition programs, including the School Breakfast Programs and the National School Lunch Program, provide nutritionally sound meals for all children and offers meals at a free or reduced price for low-income students. As school districts in California incorporated school nutrition programs, they observed higher academic scores and better classroom behavior.<sup>58</sup>

## Policy Work

The possibilities for change through policy reforms are great. Things to keep in mind while assessing the problem and developing solutions or an agenda for solutions include the following:<sup>59</sup>

- Have all non-policy alternatives been attempted?
- Feasibility of implementation.
- Understand potential unintended consequences.
- Anticipate measuring success.
- Understand stakeholder views, values, and interests.
- Is your goal/plan politically feasible?

### Legislation

In 2006, the Mississippi State Legislature instructed the Department of Education to create school wellness policies and to define which products could be sold in school vending machines.<sup>60</sup> The Mississippi Healthy Students Act, passed in 2007, aims to increase physical

activity and access to nutritious foods in schools. This act also called for methods to increase participation in School Breakfast and Lunch Programs.

Despite reforms in these areas, Mississippi neglects to challenge school breakfast, lunch and snack to a higher nutritional standard than USDA requires, fails to set nutritional standards for foods sold from vending machines, and does not screen BMI or fitness status.<sup>61</sup> Advocates can work with elected officials to introduce new policies and policies passed in other states.

### Relevant Elected Officials and Partnering

The social determinants of obesity span several industries. A team reflecting this diversity is needed to address the issues. Conflicts in terminology and approach can occur as parties from different disciplines coalesce to solve an issue. The differences in language and method for approaching a problem must be

**Table 2**

### National Legislation: Is Mississippi on Board?<sup>62</sup>

	Yes	No
Nutritional Standards for School Meals		✓
Nutritional Standards for Competitive Foods		✓
Limited Access to Competitive Foods	✓	
Physical Education Requirements	✓	
BMI or Health Data Collected		✓
Non-Invasive Screening for Diabetes		✓
Health Education Requirements	✓	
Receives CDC School Health Grants		✓
Has Snack Tax		✓
Has CDC State-Based Nutrition and Physical Activity Program		✓
Receives STEPS Grant		✓
Has Limited Liability Laws		✓

identified, and then common ground or understanding across disciplines should be reached.<sup>63</sup> This may take patience, skills, and understanding. Assistance from a third party may also be required. Partnerships may be created to maximize leveraging potential and produce synergy that leads to innovative ideas and wiser use of resources. Local elected officials can provide important political support and legitimacy for public health initiatives as well as networking capabilities and technical support. Community action and political influence work together as a nutcracker to break the nut of health inequity.<sup>64</sup>

When considering collaborations, it's important to understand the value of linking resources and actors through partnerships. Potential partners include:

- Members and citizens of the community
- City planners;
- County road manager;
- Director of the juvenile detention center;
- Judges;
- Constables;
- County engineer;
- Election commission;
- Housing Developers
- Parks commission;
- State Governor;
- Departments of Education;
- Department of Transportation;
- Economists;
- Affordable Housing advocates; and
- Bankers and banks.

## Recommendations for Action

The prevalence of obesity has grown over the last twenty years.<sup>65</sup> Residents in state of Mississippi have advanced rates of overweight and obesity with over 60% of the population classified as overweight or obese. The roots of this epidemic are planted deeper than what people eat and how they move. Using the social determinants of health framework, advocates can identify the underlying and contributing factors of obe-

sity. Racial health disparities related to the morbidities of obesity are prevalent and acknowledging race as a factor serves as a solution. Level of education can serve as a predictor or buffer for obesity. The foods that residents eat and how they move are predicted by the built environment. In closing, specific actions can be taken to address race, education and the built environment:

### Race:

- Conduct anti-racism trainings with parties that impact social determinants of health;
- Examine policies, structures, practices, and norms that perpetuate racism.

### Built Environment:

- Examine planning and investment policies and practices in communities;
- Make the connection with transportation and land use policies;
- Establish or partner with a Community Food Security Coalition;
- Improve the safety of neighborhoods;
- Increase availability of fruits and vegetables;
- Regulate food advertising and marketing efforts;
- Advocate for nutrition labeling in restaurants;
- Target taxes and subsidies;
- Implement zoning that limits fast food restaurants in saturated communities; and
- Increase ethnic and economic diversity in communities through workforce development.

### Education:

- Research school policies to determine if they include physical education and prospects for daily physical activity;
- Eliminate soft drink vending machines in schools; and
- Implement nutrition guidelines for all food sold in schools.

# Appendices

## Appendix I Programs and Resources

**Active Living By Design.** Website full of resources to create active communities. Active Living principles includes: Land Use, transportation, communications and social marketing, healthy eating, and more. <http://www.activelivingbydesign.org>.

**American Planners Association.** The Community Assistance Program (CAP) addresses social equity in planning through two methods: the Community Planning Workshop and the Planning Assistance Team. CAP places significance on collaboration with local planners and residents to address social equity issues in planning. <http://www.planning.org/cap/index.htm>.

**Community Food Security Coalition:** The Community Food Security Coalition (CFSC) is a non-profit 501(c)(3), North American organization dedicated to building strong, sustainable, local and regional food systems that ensure access to affordable, nutritious, and culturally appropriate food for all people at all times. We seek to develop self-reliance among all communities in obtaining their food and to create a system of growing, manufacturing, processing, making available, and selling food that is regionally based and grounded in the principles of justice, democracy, and sustainability. <http://www.foodsecurity.org/index.html>.

**Center for Mississippi Policy Analysis.** Core functions of the center include policy analysis, information dissemination, analysis of legislation and regulations, and sponsorship of health policy forums and other venues for dialogue. See <http://www.mshealthpolicy.com> for more information.

**Coahoma County's Healthy Kids.** Program that targets 3rd graders and promotes healthier eating and physical activity. See <http://www.kidsgetalife.org/coahoma.htm>.

**Economic Research Service.** This website provides a helpful toolkit to access the food security of a community. It includes a general guide to community assessment and focused materials for examining six basic assessment components related to community food security. The basic assessment components include guides for profiling general community characteristics and community food resources as well as materials for assessing household food security, food resource accessibility, food availability and affordability, and community food production resources. Data collection materials are also included. <http://www.ers.usda.gov/Publications/EFAN02013/>.

**Mississippi Children's Health Project.** Their home institution is the Aaron E. Henry Community Health Center. Providing centralized medical care with the Medical Home initiative and transportation with the Child Health Transportation Initiative. See <http://www.childrenshealthfund.org/programs/mississippi.php>

**Education and Advocacy Non-Profit Support (MEANS).** Their program is designed to increase the capacity of non-profit advocacy groups. MEANS works to increase capacity by building skills and is able to create a list of local elected officials to solicit for support. For more information see <http://www.advocacymeansyou.org>.

**Mississippi Health Advocacy Program (MHAP).** MHAP strives to be strong and effective voice in advocating for Mississippians health and is willing to work with communities to identify needs and create strategies for change. See <http://www.mhap.org> for more information.

**Mississippi Health Policy Research Center.** Created a matrix of policies and information that impact Obesity. Can be found at [http://www.mhap.org/promisingpolicies\\_Alicia.pdf](http://www.mhap.org/promisingpolicies_Alicia.pdf).

**Mississippi Preventing Obesity with Every Resource (POWER) Project.** Produced an Environmental Scan of Childhood Obesity Efforts in Mississippi. Highlights school initiatives, community initiatives, programs administered by state agencies, the military, existing policies and legislation, and possible funding sources for obesity-related work. Also a list of key informants. I think this is a great place to start and its current, November 2007. This is a thorough environmental scan. Can be found at [http://www.msdh.state.ms.us/msdhsite/\\_static/resources/2482.pdf](http://www.msdh.state.ms.us/msdhsite/_static/resources/2482.pdf).

**PolicyLink.** An advocacy guide designed to utilize electronic resources. Click Here for Change: your Guide to the E-Advocacy Revolution, the downloadable guide is available at <http://www.policylink.org/Projects/eAdvocacy>. Rural communities facing geographical barriers. Policy Link also has a general advocacy manual available at <http://www.policylink.org/AdvocatingForChange>. This kit teaches about organizing and coalition building, and working with the media, courts, the legislature, and challenges advocates to pursuer innovative avenues for justice.

**Washington State Department of Health.** They have a nutrition and physical Activity policy resource guide. Also includes a guide to evaluate the policy work. Can be found at <http://depts.washington.edu/uwcpfn/resources/policy.html>.

**World Health Organization-Europe.** Have published a guide that focuses on the role of local governments in promoting health and active living. Designed for Urban communities but could be used by rural communities as well. Promoting Physical activity and active Living in Urban Environments: The role of local governments. [http://www.euro.who.int/InformationSources/Publications/Catalogue/20061115\\_1](http://www.euro.who.int/InformationSources/Publications/Catalogue/20061115_1).

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## About the Author

Bianca Pullen is a graduate of the University of Chicago with a Bachelor of Arts in Human Development, focusing on the social and cultural aspects of medicine. She is currently a Bill Emerson National Hunger Fellow with the Congressional Hunger Center and was placed with the Medical Legal Partnership for Children (MLPC) for the field experience component of the fellowship. With the MLPC, Bianca worked to address hunger and nutrition from a children's health perspective. She assisted patient families with food stamp applications and low-income utility discounts and advocated for clients with government agencies. She culminated her experience by authoring a report entitled, *Energy Clinic: A Toolbox for Helping Families Heat and Eat* which outlines the need for both food and fuel assistance in combating food insecurity. The report is being used to encourage replication of the Energy Clinic model in Medical-Legal partnerships and hospitals nationwide.

Bianca has been placed at the Joint Center for Political and Economic Studies for the policy component of the fellowship. While at the Joint Center, Bianca researched the social determinants of obesity for the Joint Center's Health Policy Institute. The findings will be used to broaden existing partnerships and to initiate changes in relevant policy. Bianca also provided technical assistance for the Place Matters initiative with a specific focus on supporting the Mississippi Teams. Her passion to address health disparities and pursue social justice will continue as she moves on to work with the Growth and Development Clinic at Boston Medical Center.

## The Congressional Hunger Center

The Congressional Hunger Center is a unique non-profit anti-hunger leadership training organization located in Washington, DC. The Hunger Center's primary program activities center upon the Bill Emerson National Hunger Fellows Program and its international counterpart, the Mickey Leland International Fellows Program. In both of these programs, a select group of fellows receive the skills, knowledge and experience to become effective anti-hunger leaders in the domestic and international arenas. As a bi-partisan organization, the Hunger Center serves as a place where the anti-hunger community can discuss creative solutions to end domestic and international hunger. Center activities have included workshops on improving the nutritional quality of relief foods, Capitol Hill briefings on the role of biotechnology for improving food security, and administering an annual "Victory Against Hunger Award" program for domestic hunger organizations.

## The Joint Center and its Health Policy Institute

The Joint Center for Political and Economic Studies is one of the nation's pre-eminent research and public policy institutions and the only one whose work focuses exclusively on issues of particular concern to African American and other people of color. For over three decades, our research and information programs have informed and influenced public opinion and national policy to benefit not only African Americans, but every American.

The mission of the Joint Center Health Policy Institute (HPI) is to ignite a "Fair Health" movement that gives people of color the inalienable right to equal opportunity for healthy lives. HPI's goal is to help communities of color identify short- and long-term policy objectives and related activities in key areas.

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