REDUCING CHILDHOOD OBESITY IN LOUISIANA

An Evidence-based Approach to Inform Policy Decisions
This report summarizes the discussion and results from a workshop guided by the PRevention Impacts Simulation Model (PRISM) involving Pennington Biomedical Research Center in the Louisiana State University System, along with representatives from the Louisiana Department of Health & Hospitals and the American Heart Association. The projected outcomes are potential effects based on initial policy conditions and the best available data utilized by the PRISM model. PRISM is designed to evolve with the incorporation of the most up-to-date data; therefore, the projections of this report are valid as of May 2013. Furthermore, simulated projections should not be treated as definitive forecasts. The findings are those of the PRISM developers and users and do not represent the views of the United States Department of Health & Hospitals Centers for Disease Control and Prevention (CDC), the National Institutes of Health Heart, Lung and Blood Institute (NHLBI), or any other institutions. Responsibility for the final content of this report rests entirely with the authors.

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<td>Physical Activity in Child Care</td>
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<td>References</td>
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</table>
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EXECUTIVE SUMMARY

The Childhood Obesity Epidemic in Louisiana

- Approximately 1 in 3 Louisiana children is overweight or obese.
- There are serious medical, psychological, and economic costs associated with childhood obesity.
- In 2011, a Research Advisory Committee convened by Pennington Biomedical challenged the state to reduce childhood obesity prevalence to 23.3% by the year 2020, which means a 20% drop in current levels of childhood obesity.

The Prevention Impact Systems Model (PRISM) Committee

- In response to this challenge, a Policy Committee was convened to investigate policy opportunities to achieve the targeted reduction in childhood obesity prevalence in Louisiana.
- The Committee consisted of members from Pennington Biomedical Research Center, the Louisiana Department of Health & Hospitals, and the American Heart Association.
- The goal of the Committee was to determine the current state policies concerning childhood obesity, discuss the current policy environment in Louisiana, and use PRISM to project if and when highlighted policies could make a difference in reducing the prevalence of childhood obesity.

Policies Strength of Policy Implemented When? Change in Obesity Prevalence by 2020 [Range of Uncertainty] Change in Number of Obese Children by 2020

<table>
<thead>
<tr>
<th>Policies</th>
<th>Strength of Policy</th>
<th>Implemented When?</th>
<th>Change in Obesity Prevalence by 2020</th>
<th>Change in Number of Obese Children by 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL POLICIES</td>
<td>Maximum</td>
<td>Now</td>
<td>↓ 26% [20-33%]</td>
<td>↓ 62,500</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>4 years</td>
<td>↓ 19% [14-24%]</td>
<td>↓ 45,600</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>Now</td>
<td>↓ 12% [8-15%]</td>
<td>↓ 28,800</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>4 years</td>
<td>↓ 9% [6-11%]</td>
<td>↓ 21,600</td>
</tr>
</tbody>
</table>

Modeling Change: Results from PRISM

- Louisiana's level of childhood obesity will not decrease if the status quo regarding obesity prevention is maintained.
- Based on the projections generated by PRISM, strong policies that support healthy eating and promote active lifestyles may achieve the target of a 20% reduction in childhood obesity by the year 2020.
- The level of impact depends on the strength of the interventions and when the interventions go into effect.

Striving for a Healthier Louisiana

- Louisiana's future – its children – depends on strategic, comprehensive, sustainable policies and an improved built environment to promote healthy lifestyles.
- Policies will require long-term commitments and economic support from individuals, communities, workplaces, schools, legislators, the media, and industry partners.

Louisiana has consistently received a grade of "F" for childhood overweight and obesity in the LA Report Card on Physical Activity & Health for Children & Youth.
THE CHILDHOOD OBESITY EPIDEMIC IN LOUISIANA

Louisiana ranks 1st in the nation for its high prevalence of adult obesity\(^1\) and 6th in the nation for childhood obesity.\(^2\) With approximately one in three Louisiana children and adolescents weighing in as overweight or obese, the state earned a stagnant grade of “F” for obesity in Pennington Biomedical Research Center’s annual Report Card on Physical Activity and Health for Children & Youth every year since its inception in 2008.\(^3\) The obesity epidemic has attracted increasing attention globally, and obesity is considered the 2nd most serious health issue after cancer in the United States, as reported in a nationally representative poll.\(^4\) Additionally, the annual medical costs of obesity-related illness in the United States was recently estimated to be $209.7 billion.\(^5\)

A healthy lifestyle consisting of a nutritious diet and engagement in regular physical activity is a critical factor to prevent obesity. Yet Louisiana lacks effective population-level prevention efforts. Current approaches have not moved the needle towards reducing obesity prevalence for children or adults.

Obesity is a serious health condition and a critical risk factor to prevent. Obesity has transcended health care discussions to become an important theme in political conversations and decisions. Preventive services for obesity, such as screening and counseling, are now required health benefits listed in the 2010 Patient Protection and Affordable Care Act.\(^6\) Louisiana community leaders and policymakers are beginning to take a proactive approach to counter the high prevalence of obesity and related chronic diseases. This includes implementing community programs, refining the built environment, and enacting policies that aim to increase healthy food accessibility and consumption and to promote physical activity for both adults and children. However, there is a pressing need to expand policy-influenced obesity prevention successes beyond certain geographical regions, populations, and target areas (e.g. food deserts). The childhood obesity epidemic merits immediate attention because current initiatives and policies have not reduced Louisiana’s childhood obesity levels.

To implement effective policies, we must allocate resources towards developing and sustaining policy-based initiatives in our workplaces, schools, and the greater built environment. Policies delegate authority and accountability to specific agencies to enforce measures to reduce obesity and eliminate disparities. Long-term commitments from local, state, and federal government bodies will be critical to enact policies that support and create healthy nutritional and physical environments.\(^7\) Maximizing the effectiveness of public health campaigns that respond to the rising prevalence of obesity will require support from all political constituents including: individuals, communities, workplaces, schools, legislators, media, and industry partners.

The built environment encompasses places and spaces created or modified by people including buildings, parks, and transportation systems. The built environment is structured by land use rules, as well as economics and design features.\(^14,15\)
MODELING OBESITY POLICY INTERVENTIONS WITH PRISM

With growing evidence that policy interventions can—and do—affect health outcomes, specialists in health outcomes modeling developed a program called the *Prevention Impacts Simulation Model*, also known as PRISM. PRISM allows users to examine the projected impact of policy interventions that prevent and alleviate burdens associated with risk factors for cardiovascular disease, including obesity, and to estimate potential cost-savings associated with these policies. This tool allows states and communities to project how obesity prevalence will change if a series of policies are enacted. PRISM attempts to forecast the future by estimating what the obesity prevalence will be without intervention, and then compares this to the projected change in obesity levels attributable to the policy interventions.

Using innovative methodology to model outcomes of health and social policies, the PRISM model integrates the best available data on the effects of policy interventions. PRISM was designed to evolve as researchers uncover new causal linkages and accumulate more information about existing and potential risk factors. To date, this systems modeling approach has been used in Austin, Texas, to align prevention efforts of Austin’s Chronic Disease Prevention Coalition and maximize the impact of collaborators’ energy and resources.
Despite an increase in government and community efforts to tackle obesity in recent years, Louisiana’s future level of childhood obesity hangs in the balance. Projections show that maintaining the status quo will not reduce the prevalence of childhood obesity and may allow the prevalence to continue to increase.

In the 2011 Louisiana Report Card on Physical Activity & Health for Children & Youth, the Research Advisory Committee convened by Pennington Biomedical proposed a goal of decreasing the state childhood obesity prevalence by 20% by the year 2020 to achieve an obesity prevalence of 23.2% (shown as the yellow line, “2020 Target,” in Figure 1).16

Figure 1 displays the most recent data and the percentage of overweight and obese youth collected by objective measures in Louisiana-based research studies, including the Bogalusa Heart Study,17 Louisiana Health study (LA Health),18 Louisiana School Based Health Centers (LA SBHC),19 and Fitnessgram results from the Cecil J. Picard Center.20,21 Data presented in this graph were objectively collected by direct physical measurements of weight and height. Self-report and parent-report weight status data are not displayed because these data are often biased and suggest lower obesity prevalence than objectively-collected data.22-24 Based on the data presented in Figure 1, the level of childhood obesity in Louisiana ranged between 22 – 31% in the past decade.

The purple and red lines indicate the projected obesity prevalence if no new policies are implemented. PRISM predicts obesity prevalence based on the prevalence of obesity, plus the number of children expected to become obese over time. There are several strategies to predict future prevalence of childhood obesity. One way to project obesity prevalence is to assume that obesity will continue to climb at a steady rate,25 indicated by the purple line. An alternative method used by PRISM assumes that obesity will reach its maximum level at some point and level off, indicated by the red line. In both estimations shown in Figure 1, the projected obesity prevalence without immediate changes will not reach the target reduction and represents the likely window of the future childhood obesity prevalence.

It is clear that maintaining the status quo will all but guarantee that the obesity prevalence will continue to increase, and that as many as 24,000 more children in Louisiana may become obese by 2020. In light of rising healthcare costs of childhood obesity due to increasing diagnoses of conditions such as type 2 diabetes, high cholesterol, and high blood pressure, the projected continued increase in obesity prevalence will ultimately amount to tens of thousands of children who will be at higher risk for remaining obese, developing chronic diseases, having a shorter lifespan, and incurring higher healthcare costs over the course of their lifetime.26,27
Programmatic approaches to prevent or treat obesity are widespread and maintain significant momentum as obesity, especially childhood obesity, advances into a serious national and global health concern. Individual-level behavioral interventions have been the cornerstone of obesity prevention and management for over two decades, with a special focus on individuals who are overweight/obese and other at-risk populations. However, obesity treatment programs targeting individuals represent a high cost-per-person plan and continue to face challenges to establish long-term positive results. Because of obesity treatment programs’ inability to produce long-term effects, they are inadequate in effectively confronting this pervasive epidemic.

More recently, many health organizations and researchers have shifted their focus towards preventing obesity at the population-level and agree that policies will be essential in curbing the current obesity epidemic. This will require a paradigm shift towards policies and environmental changes rather than continued principal investment and support for programmatic approaches.

While policies may require a large initial effort to gather support, policies and environmental changes cost less per-person reached and are cost-saving or cost-effective. Whether or not they can sustain results has yet to be confirmed: intensive evaluations of obesity prevention policies and environmental changes are in the “embryonic” stages because these types of policies are relatively new. A major challenge to promote policies is that the effects from policy implementation cannot be determined immediately and rely on continuous evaluation. However, early research shows that policies and environmental changes can positively influence behavior change and can alter social norms to reflect a commitment to promoting healthier lifestyles for all individuals in a community. See Figure 2 to explore the contrasting qualities of policies versus obesity prevention programs.

Please refer to the references for more detailed information.
POLICY RECOMMENDATIONS: NEW HORIZONS

As the need intensifies for innovative strategies to reduce obesity prevalence, several national organizations involved in childhood obesity prevention and research recognize and support policy-based approaches to curb the prevalence of obesity in children nationwide. Table 1 breaks down a number of these policies supported by each group, with the policies included in PRISM bolded and highlighted in green rows.

This is not an exhaustive list of organizations supporting policies for prevention, or a complete list of policy options, but highlights some of the major institutions that pay special attention to childhood obesity. Please refer to the citations for more information about the documents consulted when developing this table.

**TABLE 1. NATIONAL ORGANIZATIONS SUPPORT OBESITY PREVENTION POLICIES**

<table>
<thead>
<tr>
<th>Policy Focus</th>
<th>Project HOPE</th>
<th>CDC</th>
<th>IOM</th>
<th>CSPI</th>
<th>RWJF</th>
<th>CPHK</th>
<th>Let’s Move</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Activity (Schools/Child Care)*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Environment/Community Access to Physical Activity*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Food Access*</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Nutrition Standards (Schools/Child Care)*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Nutrition Marketing/Labeling*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Unhealthy Food Tax*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Relative Food Pricing*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Agriculture (e.g. Farm-to-School, Crop Subsidies)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Breastfeeding Encouragement (Education/Environment Access)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Assistance Program Nutrition Standards (SNAP/WIC)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Nutrition/Health Education (Schools/Worksites)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Health Worker/Teacher Training (Schools/Child Care)</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Bolded Policies highlighted in green rows are policies included in the PRISM modeling program.*

CDC, Centers for Disease Control and Prevention; IOM, Institute of Medicine; CSPI, Center for Science in the Public Interest; RWJF, Robert Wood Johnson Foundation; CPHK, Campaign for Healthy Kids
In July 2012, the PRISM Report Committee convened to investigate if and when nutrition and physical activity policy interventions could make an impact on the level of childhood obesity in Louisiana. The goal was to determine which policies are most effective to reduce the long-term prevalence of childhood obesity and whether these policies will help Louisiana reach the 2020 target for childhood obesity in Louisiana. Specifically, the Committee considered potential impacts from the following policy options included in PRISM: the use of relative pricing and counter-marketing to discourage junk food consumption, the increase in access and consumption of fruits and vegetables, and the increase in access to and participation in physical activity, especially in school and child care settings.

The results from the PRISM modeling demonstrate that certain policies, or a combination of policies, may significantly reduce the prevalence of childhood obesity. As shown in Table 2, if the eight policy options considered by PRISM were fully implemented as of 2013, childhood obesity would go down by 26% [Range of Uncertainty: 20-33%] by 2020. This means that there would be 62,500 [Range of Uncertainty: 48,100-79,300] fewer obese children in Louisiana, in addition to preventing up to 24,000 children from becoming obese in the first place.

Table 3 shows the reduction in obesity prevalence if all policies are implemented, including whether policies are implemented within one year versus four years, or if policies are implemented at maximum versus moderate strength. Within PRISM, strength of the proposed policy intervention and year of implementation can be adjusted to reflect a community’s expectations. Moderate policy strength appears to produce moderate results. Therefore, since it is unrealistic to expect that all policies will pass through one legislative session successfully at maximum strength, or will be implemented simultaneously in community or school settings, the data suggest that it would be prudent to take more time to gather support for stronger policies rather than settle for weaker policies that may produce immediate but less impactful results.

### Table 2. What If We Had Strong Policies in Place in 2013?

<table>
<thead>
<tr>
<th>Policy</th>
<th>Projected Change in LA Childhood Obesity [Range of Uncertainty]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junk Food Relative Pricing</td>
<td>↓ 8% [6-10%]</td>
</tr>
<tr>
<td>Junk Food Counter-marketing</td>
<td>↓ 4% [2-7%]</td>
</tr>
<tr>
<td>Fruit and Vegetable Access</td>
<td>No decrease</td>
</tr>
<tr>
<td>Fruit and Vegetable Promotion</td>
<td>No decrease</td>
</tr>
<tr>
<td>Access to Physical Activity Spaces</td>
<td>↓ 5% [3-8%]</td>
</tr>
<tr>
<td>Physical Activity Promotion</td>
<td>↓ 7% [3-12%]</td>
</tr>
<tr>
<td>Physical Activity in Schools</td>
<td>↓ 5% [3-7%]</td>
</tr>
<tr>
<td>Physical Activity in Child Care</td>
<td>↓ 2% [1-3%]</td>
</tr>
<tr>
<td><strong>ALL POLICIES</strong></td>
<td><strong>↓ 26% [20-33%]</strong></td>
</tr>
</tbody>
</table>

We know that strong policies across the board will not realistically be in place in 2013. As we are planning for future policy change, let us consider the possible trade-offs between getting a moderate or weak policy on the books versus taking time to build support for stronger policies.

### Table 3. Stronger Policy Now or Weaker Policy Later?

<table>
<thead>
<tr>
<th>Policies</th>
<th>Strength of Policy</th>
<th>Implemented When?</th>
<th>Change in Obesity Prevalence By 2020 [Range of Uncertainty]</th>
<th>Change in Number of Obese Children by 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALL POLICIES</strong></td>
<td>Maximum</td>
<td>Now</td>
<td>↓ 26% [20-33%]</td>
<td>↓ 62,500</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>4 years</td>
<td>↓ 19% [14-24%]</td>
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</tr>
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<td></td>
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<tr>
<td></td>
<td>Moderate</td>
<td>4 years</td>
<td>↓ 9% [6-11%]</td>
<td>↓ 21,600</td>
</tr>
</tbody>
</table>
One of the most pertinent questions to answer during the PRISM workshop was to determine if the 2020 target prevalence was feasible to attain using policy interventions and environmental changes. In Figure 3, the graph indicates that immediate and maximum policy changes may produce greater than a 20% reduction of childhood obesity by 2020; this surpasses the target outlined in the 2011 LA Report Card on Physical Activity & Health for Children & Youth. This model represents the potential for 75,000+ fewer obese Louisiana children in 2020 if all policies highlighted are implemented to their fullest extent.

COSTS OF CHILDHOOD OBESITY

Childhood obesity not only affects children and families physically and psychologically, but the direct and indirect financial costs of childhood and adult obesity are astounding. Childhood obesity alone is responsible for $14.1 billion in direct healthcare costs nationwide. Families, private payers, and federally funded public health programs are experiencing the effects of this growing economic burden (see Figure 4). Obesity is now a major component in the costs of healthcare, a concept highlighted with the passage of the Patient Protection and Affordable Care Act (PPACA) in 2010. In-network preventive services such as obesity screening and counseling about eating healthfully and losing weight will be available to insured individuals and families under the PPACA. Support for prevention measures is widespread: legislators, economists, healthcare providers, and researchers promote obesity prevention tactics to drastically reduce the obesity-related financial burden.

In the 2012 annual report “F as in Fat” by the Robert Wood Johnson Foundation and Trust for America’s health, estimates show a cumulative savings of over $9.8 billion dollars by 2030 if there was a 5% statewide drop in adult obesity in Louisiana. Because obesity-related complications are expected to increase the United States’ total healthcare costs to $860.7–956.9 billion by 2030, there is urgency to reduce obesity prevalence by at least 5% to avoid skyrocketing healthcare costs and to save Louisiana billions of dollars annually.

Results from studies estimating present and future costs of obesity and obesity-related conditions paint a grim picture of the financial burden that obesity will impose if strategic measures are not taken to significantly and permanently reduce current prevalence. On a positive
These reported findings support the idea that the highlighted nutrition and physical activity policy interventions may significantly reduce the prevalence of childhood obesity in Louisiana. While the individual policy interventions do not necessarily produce monumental reductions in childhood obesity prevalence, there appears to be a cumulative effect, in that when all policies are implemented, the prevalence noticeably drops. An ideal policy environment inclusive of well-planned and well-supported statewide nutrition and physical activity policy interventions appears to have enormous potential to counteract the status quo. Although it may take more time and resources to obtain buy-in from all necessary parties, the potential for measurable and sustainable results exists within stronger, synergized policies to maximize the effects.

There are many institutions and organizations across Louisiana passionately committed to reduce the prevalence of childhood obesity. Legislators also recognize that childhood obesity is a significant health issue that not only affects the quality of life of many residents, but also impacts the current and future economic status of the State. The passage of a Louisiana bill in 2008 “to study possible initiatives, policies, programs, and other actions to decrease childhood obesity in the state” demonstrates this awareness and concern. However, this report highlights the reality that in Louisiana, very few policies that could impact the prevalence childhood obesity have been enacted, and those that have been passed into law do not appear to be widely enforced.

When compared to behavioral and community programs, environmental changes and policies generally showed the most promising cost-effectiveness.

“Americans need to live and work in environments that help them practice healthy behaviors. The social, cultural, physical, and economic foundations of a community are important factors in its ability to support a healthy lifestyle for its citizens. For example, government and private organizations should pool their resources to increase access to healthy foods—such as ensuring that all neighborhoods, especially in low-income areas, have full-service and safe options for physical activities, such as walking and bike paths, sidewalks, and parks.” —The Surgeon General’s Vision for a Healthy and Fit Nation, 2010

The featured health-promoting policy initiatives in this report have the potential to significantly and permanently transform the nutritional and built environment, especially in underserved areas. In order to facilitate healthier choices and behaviors for the entire population, policies appear to be a viable and critical piece of the puzzle. It is time for legislators and stakeholders to play a greater part in moving the needle by focusing their efforts on strategic, comprehensive, sustainable policies that promote healthier living. Louisiana’s future – its children – depends on it.
This brief reports the projected reduction in Louisiana’s childhood obesity prevalence if eight nutrition and physical activity policies are enacted, comparing the outcomes at maximum or moderate strength if they are implemented within the upcoming year or in four years.

Policy Goals

- Prevent children from becoming overweight or obese.
- Facilitate healthy eating habits.
- Promote physical activity and active transportation.

What Does the Research Tell Us?

- Obese children are likely to become obese adults and to develop serious chronic diseases, like heart disease or diabetes, that may decrease the quality and length of their lives.26
- Without policy interventions, the prevalence of obesity is expected to either plateau or continually increase in the forthcoming decades.

Current Policy Environment in Louisiana

- The nutrition and physical activity policies were chosen based on their potential impact to reduce childhood obesity, their feasibility to implement before 2020, and existing legislative momentum in the state.
- There are very few existing policies that are implemented and enforced that may help reduce the rate of childhood obesity.

Achieving Maximum Intervention Results

- A maximum intervention scenario would reflect a comprehensive, strategic, multi-faceted statewide movement to enact and implement legislation related to the highlighted nutrition and physical activity policies (see individual policy briefs for more detailed information).

Policy Interventions

Nutrition
1. Junk Food Relative Pricing
2. Junk Food Counter-marketing
3. Fruit and Vegetable Access
4. Fruit and Vegetable Promotion

Physical Activity
5. Physical Activity Access
6. Physical Activity Promotion
7. Physical Activity in Schools
8. Physical Activity in Child Care

WAYS TO SUPPORT: Nutrition and Physical Activity Policies

- Become involved in the legislative process by keeping up to date with the current legislative agenda; make your opinion heard by calling or emailing your legislators’ offices asking them to support policies that promote healthy lifestyles for all residents.
- Express concerns and wishes to promote health at your neighborhood and civic association gatherings, city council and town hall meetings, and your state and local government representatives’ meetings.
- Get involved in your child’s School Wellness Council. Talk to school administrators about starting a Wellness Council if your child’s school doesn’t have one.
- Support local biking and pedestrian advocacy groups; participate in their physical activity and safety awareness events.
- Volunteer with organizations that provide healthy foods to those in need.
Projected Effect on Louisiana's Childhood Obesity Prevalence

The results in the table below show the reduction in childhood obesity with the enactment of eight nutrition and physical activity policy areas and illustrates four contrasting scenarios: prevalence if maximum policy conditions begin immediately as opposed to four years and prevalence if moderate conditions begin immediately versus in four years.

<table>
<thead>
<tr>
<th>PRISM Results: Percent Change in Childhood Obesity if All Policies are Implemented Simultaneously</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy Strength</strong></td>
</tr>
<tr>
<td><strong>Year Implemented</strong></td>
</tr>
<tr>
<td><strong>% Change [ROU^]</strong></td>
</tr>
</tbody>
</table>

* ROU refers to the Range of Uncertainty determined by the PRISM sensitivity analysis.
Note: The symbol ↓ signifies that the percent change is negative, and the percent represents a decrease.

- Within the PRISM model, implementing all policies at maximum strength in 2013 would have achieved the greatest reduction in childhood obesity prevalence in the model.

- As the legislative regular session for 2013 has passed, it is beneficial to aim for policy implementation in 2016 to see a 19% [Range of Uncertainty: 14-24%] decrease in childhood obesity.

Implementing the Policy

In combination with personal responsibility for maintaining a healthy lifestyle, supporting and enacting policies that facilitate healthy eating choices and physical activity for youth and adults may positively affect population-level health outcomes. Many community organizations, faith-based organizations, schools, and local governments have already taken steps to improve and increase the quality and quantity of health-promotion opportunities within their authority. Currently, not all of Louisiana’s children receive the benefits of these programs and interventions. Therefore, in order to maximize the reach of health-promoting policies, statewide legislation is recommended.

The negative economic, societal, and personal costs of childhood obesity are significant consequences that cannot be underestimated. Too many children are overweight or obese now, and too many of Louisiana’s children will be overweight or obese in the future if a strategic, comprehensive, multi-faceted prevention plan is not enacted. Curbing the obesity trend will require long-term commitment and resources from supporters, and the models suggest that it would be advantageous to take more time to build support and increase buy-in for stronger policies. It is important to reiterate that policy interventions might not produce immediate results but may ultimately demonstrate long-term benefits when looking at health outcomes related to childhood obesity and the associated healthcare costs.

“Policy has an integral role in community-based obesity prevention. With the increasing availability and quality of evidence of the obesity epidemic and effective interventions to tackle this epidemic, there are ongoing calls for government action to translate the evidence into policy and practice. Policy demonstrates government commitment to obesity prevention and provides a road map for planning, implementing, and evaluating interventions.”

~Lawrence & Swinburn, 2010

“While the magnitude of the obesity problem is great, the range of potential solutions is even greater. The design of successful interventions and actions for prevention and management of overweight and obesity will require the careful attention of many individuals and organizations working together through multiple spheres of influence.”

~The Surgeon General’s Call To Action To Prevent and Decrease Overweight and Obesity, 2001
POLICY INTERVENTION BRIEFS > NUTRITION INTERVENTION: JUNK FOOD RELATIVE PRICING

- The following brief reports the effects of junk food relative pricing policies on the reduction of childhood obesity prevalence in the state of Louisiana, from an evidence-based modeling program.

- This policy intervention represents a relative price increase for junk food in places where people typically purchase and consume food and beverages, or a price decrease for healthy food options.

- Policies may include: taxing sales of potato chips, baked goods, candy, chocolate, or ice cream; taxing sales of soda and sugar-sweetened beverages; or subsidies and reduced prices for fresh produce.

**Policy Goals**

- Replace junk foods with healthy alternatives and reduce overall consumption of junk food.

- Make healthy foods more available, affordable, and desirable for everyone in Louisiana.

- Provide support for stores and schools that offer healthy foods as competitive food options.

**What Does the Research Tell Us?**

- Subsidizing fruit and vegetable purchases is related to lower body weight in adults and children, suggesting that reduced prices for healthy foods may help reduce weight.68

- Creating or increasing taxes on junk foods effectively reduced junk food consumption69 and slightly improved fruit and vegetable consumption.70

- There is evidence that adjusting the relative price of junk food through junk food taxes or healthy food subsidies can promote healthy eating behaviors.71,72

**Current Policy Environment in Louisiana**

- Louisiana does not have any statewide or local legislation that permits taxation of any category of junk food.73,74 On the contrary: some junk foods, including soda, are exempted from taxation.75 Louisiana halved the soda tax in 1993, then the Louisiana State Legislature completely repealed the soda tax law in 1997.76 More recently, the Louisiana State Legislature specifically prohibited local governments from levying soda taxes.77

- There are no state policies currently in place that make healthy foods more competitively priced compared to unhealthy foods at grocery stores, convenience stores, and other food retailers.

- The Louisiana Board of Elementary and Secondary Education (BESE) enforces regulations on vending machines and competitive foods, but these policies are not consistent across all grade levels.78-80

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What is Junk Food?

"Junk" food refers to foods that have low nutritional value and are calorically dense, meaning they are high in solid fat and/or added sugar. Soda and sugar-sweetened beverages are also considered junk foods.

Junk foods are appealing for their taste and because they are often cheaper and more readily available compared to snacks with lower fat, sodium, and/or sugar. Soda and junk foods have been linked to higher risks of obesity, diabetes, heart disease, and lower intake of important nutrients.81-83

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WAYS TO SUPPORT

**Junk Food Relative Pricing**

- Subsidize or provide coupons for fresh produce items in WIC, EBT, and SNAP programs.

- Reduce participation barriers for school breakfast, lunch, and summer meal programs.

- Support legislation to tax junk food and ask your legislators to reinstate the soda tax.

- Alter the relative pricing of health versus junk foods in school food stores/cafeterias and in vending machines available to students.

- Implement and enforce school wellness policies that require that free water is available to students at all times and that healthy food options are served during all school events.

- Support school fundraisers that do not involve candy or other unhealthy foods.

- Propose that sports complexes and event concessions carry healthy snack options.

- Provide incentives to store owners who provide and promote healthier snack foods and beverages.
Achieving Maximum Intervention Results

- Within the PRISM model, the initial conditions for the junk food relative pricing policy intervention was set at the lowest value (0%) because Louisiana has no applicable junk food taxes or policies influencing the relative price of healthy foods.

- Maximum intervention represents a junk food relative price increase of 20%, which is the maximum rate allowed by PRISM, with a moderate intervention level set at 10%. These rates are based on economic impact studies and reported data of current tax rates in neighboring states and communities.

Projected Effect on Louisiana’s Childhood Obesity Prevalence

| PRISM Results: Can a Policy Intervention Changing the Relative Price of Junk Food Versus Healthy Food Reduce the Prevalence of Childhood Obesity? |
|---|---|---|---|
| Policy Strength | Maximum (20%) | Maximum (20%) | Moderate (10%) | Moderate (10%) |
| Year Implemented | 2013 | 2016 | 2013 | 2016 |
| % Change [ROU^*] | ↓ 8% [6-10%] | ↓ 6% [5-7%] | ↓ 4% [3-5%] | ↓ 3% [3-5%] |

^* ROU refers to the Range of Uncertainty determined by the PRISM sensitivity analysis.

Note: The symbol ↓ signifies that the percent change is negative, and the percent represents a decrease.

- Implementing policies that change the relative pricing of junk foods may reduce the childhood obesity prevalence in Louisiana by up to 6% [Range of Uncertainty: 5-7%] if strong policies are enacted by 2016.

Implementing the Policy

Although obesity prevalence has been linked to state-level soft drink and snack taxes, additional evaluation and research is needed to demonstrate a solid association between intentional, economically-derived taxes or subsidies and the reduction in obesity at the population-level. A recent study suggested that small changes in pricing regulations are unlikely to decrease a community’s obesity prevalence, but nontrivial taxes or subsidies may show measureable effects. Junk food taxes are not widely supported by the public and face opposition from lobbyists and industry leaders. Since Louisiana enacted laws exempting soda from taxation by local governments, does not collect sales tax for other junk foods, and does not have any statewide programs to facilitate competitive pricing for healthy food options, it would be extremely difficult to immediately propose an intervention that increases the relative price of soda by 20%. Therefore, it may be more feasible for Louisiana to gather support for policies that reduce the price of healthy foods to make them more competitive options in food retail stores and schools.

Schools can be very effective points for obesity prevention efforts, and the Louisiana BESE has made headway in reducing the amount of junk food available to students by implementing vending machine regulations and enforcing school meal nutrition requirements. While it may take many years for a maximum intervention to occur statewide with regard to the sale of junk food, the LA Department of Education and BESE can take additional steps by enhancing the language in their current nutrition policies and developing new policies and programs to ensure that students in all grade levels have healthy food options available at affordable prices.

“The growing evidence base...indicates that changes in the relative prices of less healthy and healthier foods and beverages can significantly change consumption patterns and may have significant impacts on weight outcomes at the population level, particularly among populations most at risk for obesity and its consequences. Raising the prices of less healthy options by taxing them has the added benefit of generating considerable revenues that can be used to support costly programmes and other interventions aimed at improving diets, increasing activity and reducing obesity, including subsidies for healthier foods and beverages.” -Powell et al., 2013
What is Food Marketing?

Food marketing/promotion: any activity conducted by a company in the food, beverage, or restaurant industry to encourage purchase of its products.99

$10,000,000,000

Food companies spend $10 billion per year marketing foods and beverages to children and adolescents in the United States.87

A high percent (up to 90%) of foods advertised during children’s television shows are for convenience/fast foods and for foods high in fat, sodium, sugar or low in nutrients.100-103

American children spend nearly $30 billion of their own money on junk food every year.103

Policy Goals

• Replace junk foods with healthy alternatives and reduce overall consumption of junk food.

• Make healthy foods more appealing beverage and snack options.

• Provide support for food stores and schools that remove junk food advertising and increase healthy food marketing through media and high-visibility product placement.

What Does the Research Tell Us?

• Evidence has linked junk food advertising exposure to children’s junk food preferences, purchases, and consumption,87,88 as well as overweight status.89

• Advertising for junk food on television87-94 and on outdoor billboards95 has been associated with obesity.

• Interventions at the point-of-purchase (e.g. unfavorable signage and nutrition labeling) have reduced junk food consumption.5,96

• Evidence is needed to establish a link between junk food counter-marketing and junk food consumption.

Current Policy Environment in Louisiana

• There are no state-endorsed mass media campaigns or social marketing strategies employed to discourage junk food consumption in Louisiana.

• Louisiana does not have any laws or policies that restrict junk food placement or that promote healthy food messages in grocery stores, schools, or restaurants.97,98

WAYS TO SUPPORT

Junk Food Counter-Marketing

• Designate healthy restaurants and/or healthy menu options.

• Encourage menu nutrition labeling.

• Promote mass media campaigns about health effects of junk foods.

• Discourage junk food signage, promotions, and placement at points-of-purchase.

• Regulate the amount of advertising children are exposed to in their schools and neighborhood.

• Ban junk food advertisements during prime children’s television watching hours and during children’s shows.
Achieving Maximum Intervention Results

• The initial conditions in Louisiana were estimated by gauging the strength of placement restrictions and local marketing in schools, food stores, and restaurants. Because Louisiana does not have any policies or laws supporting junk food counter-marketing measures, the initial conditions were set to the lowest value (0%).

• Maximum intervention (100%) entails an effective, extensive, focused, an ongoing mass media counter-marketing campaign; local communication in schools, food stores, and restaurants; and less prominent product placement of junk food in these settings.

Projected Effect on Louisiana’s Childhood Obesity Prevalence

<table>
<thead>
<tr>
<th>PRISM Results: Can a Policy Intervention Reducing the Marketing Power of Junk Foods Reduce the Prevalence of Childhood Obesity?</th>
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<tbody>
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Note: The symbol ↓ signifies that the percent change is negative, and the percent represents a decrease.

• Small reductions in the childhood obesity prevalence may be possible with effective junk food counter-marketing interventions.

• A 2-4% reduction in the childhood obesity prevalence may not seem substantial, but any decrease means that a number of children may be protected from the effects of overweight/obesity.

Implementing the Policy

Junk food counter-marketing is a relatively new policy intervention that communities are implementing. It is no secret that children and adolescents are major targets for food and beverage marketing campaigns, especially for fast food, sugary cereals, soda, and other junk foods. And it is known that food and beverage advertising affects children’s food preferences and purchase requests, short-term consumption habits, and contributes to less-healthy diets and an environment that puts kids’ health at risk. While food companies have decreased the money spent on traditional television advertising, strategies have evolved to include the Internet and other forms of technology and social media (e.g., text messaging, social networking sites/apps) to attract and retain young customers. Although some companies have pledged to self-regulate and have taken positive action in terms of marketing foods to children, as businesses, their main priority is profit, not public health.

In accordance with the U.S. Congress passing Section 204 of Public Law 108-265, of the Child Nutrition and WIC Reauthorization Act of 2004, some school districts in Louisiana have adopted language in their mandatory wellness policy that “strongly discourages” marketing of low-nutrition foods and beverages at school. A ban on marketing obesogenic foods (i.e., junk foods) to children is one of the single most effective and cost-saving policy strategies a government can implement.

However, the policies are voluntarily adopted on a district-by-district basis, and only discourage marketing, but do not prohibit it. According to a CDC report in 2010, 61.6% of schools in Louisiana completely prohibit the selling of unhealthy foods (e.g., candy, fast food, and soft drinks) in all locations affiliated with the schools (school grounds, gymnasiums, school buses, sports fields). As schools face budget cuts and seek additional revenue, they are caught in a dilemma, as competitive food and beverage sponsorships can be difficult to turn down. With the help of policy makers and industry leaders, schools can be important places to market nutritious foods and healthy diets.
The following brief reports the effects of fruit and vegetable access policies on the reduction of childhood obesity prevalence in the state of Louisiana, from an evidence-based modeling program. The fruit and vegetable access policy intervention refers to policies and built environment improvements that increase a local population's accessibility to affordable fruits and vegetables.

**Policy Goals**

- Increase fruit and vegetable consumption by ensuring that all residents have access to fresh, good-quality, affordable produce.
- Encourage replacing unhealthy food options with fruits and vegetables.
- Support schools and food stores who increase the accessibility and affordability of fresh fruits and vegetables in their communities.
- Eliminate food deserts and stimulate economic development in these areas.

**What Does the Research Tell Us?**

- An evaluation of Louisiana children's eating habits gave the state a "D-" for Fruit and Vegetable Consumption, as only 5.9% of youth eat ≥4 fruits and 11.7% eat ≥3 vegetables per day, which is the recommended amount.\(^{111}\)
- A diet high in fruits and vegetables is associated with a decreased risk of serious chronic diseases, including some types of cancer and cardiovascular disease.\(^ {112,113}\)
- Replacing foods of high caloric density with foods of lesser density, such as fruits and vegetables, can be a significant part of an effective weight management strategy.\(^ {114,115}\)
- Supporting increased access, availability, and reduced price are key strategies to increase fruit and vegetable consumption and thus improve nutrition.\(^ {116,117}\)
- Gaining additional fruit and vegetable access is estimated to reduce the likelihood of a fruit and vegetable-poor diet by about 40%\(^ {118}\) and within a range of 11–32% in cases where affordability may be an issue.\(^ {119}\)

**Current Policy Environment in Louisiana**

- Louisiana currently authorizes the inclusion of fruits and vegetables in the state's Special Supplemental Nutrition Program (SNAP) and Women, Infants, and Children (WIC) programs.\(^ {120}\)
- The Louisiana Healthy Food Retail Act promotes financing for healthy food retailers like grocery stores (non-restaurants) in underserved communities in an effort to increase healthy food accessibility and promote the sale and consumption of fresh fruits and vegetables.\(^ {121}\)
- In 2010, the state established a Sustainable Local Food Policy Council with the purpose of building a local food economy benefitting Louisiana by creating jobs, stimulating statewide economic development, preservation of farmlands and water resources, increasing consumer access to

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**What is a Food Desert?**

Food deserts are areas where people have limited access to a variety of healthy and affordable food. These areas are more likely to have high poverty rates; small populations (rural); high rates of abandoned and vacant homes; and residents with lower levels of education, lower income, and higher unemployment rates.\(^ {122}\)

Across Louisiana, 10% of residents are low income and do not live close to a grocery store.\(^ {123}\)

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**WAYS TO SUPPORT**

**Fruit & Vegetable Access**

- Improve fruit and vegetable availability in corner or convenience stores.
- Increase the percentage of local farmers markets that accept WIC, EBT, and SNAP.
- Discount or subsidize fresh produce for all WIC, EBT, and SNAP programs.
- Establish and maintain community/school gardens.
- Implement policies for farm-to-school, -worksite, -hospital, and -restaurant programs.
- Enforce nutrition standards in school nutrition programs.
- Utilize mobile fresh food delivery units for areas with low accessibility.
fresh and nutritious foods, and providing greater food security for all Louisianans.\textsuperscript{124} In 2012, among other proposals, the Council recommended increasing the amount of sustainable local foods available through school and public assistance nutrition programs and promoting home and community gardens to increase access to fresh fruits and vegetables.\textsuperscript{125} However, to date no related bills were passed as a result of the Council’s findings, and the Council is currently disbanded.

- School policy in Louisiana also established specific legislated guidelines regarding nutrition, restricting both the sales and availability of food “minimal in nutritional value” during school hours, as well as authorizing the Louisiana Department of Education to implement the regulations of the US Department of Agriculture’s (USDA) nutritional programs.\textsuperscript{126}

### Achieving Maximum Intervention Results

- Many Louisiana residents have access to affordable fruits and vegetables\textsuperscript{,115,127} but not all students may have optimal access in schools.\textsuperscript{115,128,129} The initial conditions level was set to reflect the overall level of children’s access, which amounted to 46%.

- The maximum intervention conditions (100%) within PRISM represent an expanded presence of supermarkets and produce stands; increased access in worksite, school, and restaurant settings; and price discounts for low-income populations.

### Projected Effect on Louisiana’s Childhood Obesity Prevalence

<table>
<thead>
<tr>
<th>PRISM Results: Can a Policy Intervention that Increases Fruit and Vegetable Access Reduce the Prevalence of Childhood Obesity?</th>
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<tr>
<td><strong>Policy Strength</strong></td>
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<tr>
<td>Year Implemented</td>
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<tr>
<td>% Change [ROU*]</td>
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\* ROU refers to the Range of Uncertainty determined by the PRISM sensitivity analysis.

Note: The symbol $-$ signifies that the percent change is negative, and the percent represents a decrease.

- PRISM estimated no effect of policies to increase access to fruits and vegetables, reflecting current research that demonstrates that increased access to fresh produce alone does not decrease the prevalence of obesity unless concurrent measures are taken to reduce junk food intake.

- Adding fruits and vegetables to a diet will not improve the energy density of a diet unless healthy food calories replaces junk food calories.

### Implementing the Policy

Although it seems counter-intuitive that policies aiming to increase residents’ access to affordable fresh fruits and vegetables are not predicted to make an impact on the prevalence of obesity, these findings are consistent with the most up-to-date data. This suggests that access to fruits and vegetables does not guarantee that the fruits and vegetables are affordable, of good quality, or prepared in a way that preserves and retains their nutrition.\textsuperscript{113} Access is just one piece of the puzzle in terms of promoting a well-rounded nutritious diet.

Louisiana has already enacted policies that promote fruit and vegetable consumption in schools and for low-income residents receiving SNAP benefits. Schools must adhere to the United States Department of Agriculture guidelines for providing fruits and vegetables to students enrolled in breakfast, lunch, and summer meal programs. Schools also limit the types of competitive foods sold outside of meal programs. Additionally, SNAP benefits are accepted at some farmers markets and produce stands, which can assist low-income families to obtain fresh produce.

With the knowledge that improving access cannot ensure that all of Louisiana’s residents are meeting recommendations set by the USDA Dietary Guidelines for Americans, community organizations are increasingly incorporating multi-faceted plans that not only tackle the issue of access, but also teach residents how to prepare unfamiliar produce and adjust unhealthy recipes to make them more nutritious, help set up school and community gardens, and provide educational classes and materials to help families eat better.
The following brief reports the effects of fruit and vegetable promotion policies on the reduction of childhood obesity prevalence in the state of Louisiana, from an evidence-based modeling program.

Fruit and vegetable promotion policies include media campaigns, local communication, and placement strategies to promote diets rich in fruits and vegetables in order to improve health.

**Policy Goals**

- Increase fruit and vegetable consumption by making fruits and vegetables more appealing options.
- Encourage replacing unhealthy foods for fruits and vegetables.
- Support schools and food retailers that take measures to promote fresh fruits and vegetables.

**What Does the Research Tell Us?**

- A healthy diet inclusive of fruits and vegetables is important for optimal child growth, weight management, and chronic disease prevention.\(^{131}\)
- Promotion strategies such as nutrition labeling at restaurants, point-of-purchase nutrition information, healthy food marketing, and school-based nutrition education programs show promise to improve healthful diets.\(^{132-133}\)
- Changing the types of advertising from junk food to healthy food during children’s TV programming reinforces healthy eating.\(^{136}\)

**Current Policy Environment in Louisiana**

- There are no laws or policies that support statewide mass media campaigns, improve communication, or encourage favorable placement of fruits and vegetables.
- Some school districts have established School Wellness policies that emphasize nutritional education for elementary students. LA Department of Education programs are designed to enhance student wellness, advance nutrition education school-wide, and optimize student exposure to fruit and vegetable promotion.\(^{107}\)

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**WAYS TO SUPPORT**

**Fruit & Vegetable Promotion**

- Increase campaigns that emphasize nutrition education.
- Promote the implementation and use of community and school gardens.
- Implement “healthy restaurant designation” media campaigns.
- Utilize mass media social marketing campaigns to promote fruit and vegetable consumption.
- Emphasize menu labeling in restaurants.
- Utilize effective placement and pricing strategies in grocery stores, convenience stores, schools.
- Support farm-to-table programs and local farmers markets.
Achieving Maximum Intervention Results

- Taking into consideration state policies in place regarding fruit and vegetable promotion in schools, food stores, and restaurants, Louisiana’s initial conditions level (0.8%) was determined.97

- Maximum intervention (100%) entails a highly effective statewide mass media campaign, attractive point-of-purchase product placement in stores and schools, and marketing efforts for fruits and vegetables in groceries, schools, and restaurant settings.

Projected Effect on Louisiana’s Childhood Obesity Prevalence

<table>
<thead>
<tr>
<th>PRISM Results: Can a Policy Intervention that Promotes Fruit and Vegetable Access Reduce the Prevalence of Childhood Obesity?</th>
<th>Maximum (100%)</th>
<th>Maximum (100%)</th>
<th>Moderate (50%)</th>
<th>Moderate (50%)</th>
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<tbody>
<tr>
<td>Year Implemented</td>
<td>2013</td>
<td>2016</td>
<td>2013</td>
<td>2016</td>
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<tr>
<td>% Change [ROU^]</td>
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Note: The symbol ▼ signifies that the percent change is negative, and the percent represents a decrease.

- When fruit and vegetable promotion policies are implemented singularly, there is not projected to be a decrease in the level of childhood obesity prevalence.

- Promoting fruits and vegetables will not be an effective policy strategy if measures are not taken to improve the nutritional quality of residents’ diets. Simultaneous policies that reduce the amount of junk food purchased and consumed may improve the effectiveness of this type of policy intervention.

Implementing the Policy

It may be surprising that enacting a policy intervention focused on promoting fruits and vegetables is not projected to have an impact on the childhood obesity prevalence in the state. However, this projection demonstrates the need for research of population-level interventions that promote fruit and vegetable consumption while simultaneously making efforts to reduce consumption of unhealthy foods: replacement is the critical factor.

Communities across Louisiana are already making significant efforts to increase fruit and vegetable consumption. Along with tackling issues affecting access, many initiatives are multi-faceted in that they provide recipes and cooking instructions for unfamiliar produce. Community and school gardens are becoming more common. Plans for farmers markets are making headway. Initiatives to work with local corner stores by providing economic and infrastructure support to sell and promote produce are materializing. There are many strategies for food retailers to implement the product, price, placement, and promotion framework into marketing healthy foods in their stores.142 Restaurateurs can also assist in increasing fruit and vegetable consumption of their customers, especially their young customers, by making fresh fruits and vegetables the standard options.

“...marketers and policy makers who are concerned about consumer welfare need to manage product offerings to make it easier for consumers to make better choices...The approach does not generally recommend banning products or eliminating choices. Consumer freedom is preserved, but an understanding of the limitations in consumers’ beliefs, preferences, and decisions leads the marketer or policy maker to devise displays, tools, incentives, and promotions that make it easier for consumers to make consumption decisions that support long-term health.”143 —Behavioral Economics and the Psychology of Fruit and Vegetable Consumption: A Scientific Overview, 2012
The following brief reports the effects of policies that increase access to physical activity spaces on the reduction of childhood obesity prevalence in the state of Louisiana, from an evidence-based modeling program.

This intervention represents policies that increase and improve access to spaces that provide adults and kids with opportunities for safe and affordable options for walking, biking, social, and green space physical activity in community, school, and in work settings.

This intervention also represents changes to the built environment, including renovating or redesigning existing facilities, or creating new infrastructure that supports physical activity.

**Policy Goals**

- Increase levels of physical activity for all residents.
- Reduce the amount of sedentary time for all residents.
- Provide safe, affordable, well-designed spaces where all residents can participate in physical activity.

**What Does the Research Tell Us?**

- An evaluation of Louisiana’s children’s access to physical activity spaces gave the state a “D” for the Built Environment and Community Design. Only 62.0% of children have access to sidewalks or walking paths, and 65.5% of children have parks/playgrounds in their neighborhoods.144

- There is **irrefutable evidence** of the effectiveness of regular physical activity to prevent chronic diseases (e.g., cardiovascular disease, diabetes, cancer, hypertension, obesity, depression and osteoporosis) and premature death.145 Physical activity promotes better general health and well-being, improves health-related quality of life, helps control weight, reduces the risk of some forms of cancer, and improves mental health and mood.146-149

- Physical activity levels decline as young people age.111

- Many studies have shown an association between the built environment, physical activity, and obesity.14,150-152

- Strong evidence supports enhancing access to physical activity spaces in conjunction with promotions to increase physical activity.153

**Current Policy Environment in Louisiana**

- The Louisiana House of Representatives signed a bill in 2011 that encourages schools to enter into joint-use agreements by limiting the liability of school boards. This can inspire community groups to use school facilities for recreation and physical activity.154

- A House Concurrent Resolution (HCR) creating a Complete Streets work group was passed in 2010 that recognizes the need for Louisiana transportation authorities to assume responsibility for creating safer, more accessible roadways for pedestrians and cyclists.155 This workgroup published a detailed report with recommendations in 2010156 and was re-created by a HCR in 2012.157 By creating and continuing a state-endorsed Complete Streets Workgroup, Louisiana has taken a significant step in recognizing the need to improve the built environment to promote biking and walking.155

**Ways to Support Access to Physical Activity Spaces**

- Promote Safe Routes to School, Complete Streets, and active transportation to ensure pedestrian/cyclist safety and accessibility to roads and paths.

- Create joint-use agreements that allow residents to use school facilities during non-school hours.

- Support land use incentives that promote physical activity opportunities.

- Initiate a subsidy program for low-income residents wanting to use pay-for-use facilities.

- Form worksite, school, church, or neighborhood physical activity groups.

Children and adults living in neighborhoods with greater availability and accessibility of parks and recreation centers have higher physical activity levels.149,150,157,158

Children from low-income and minority households have disproportionately less access to recreational facilities.55
Achieving Maximum Intervention Results

• Initial conditions (42%) reflect:
  ◦ Low scores on www.walkscore.com, a public access website that created an index of walkability, bikeability, based on amenities available within walking distance (one mile) from most locations nationwide. This means that Louisiana, with the exception of the largest urban areas such as New Orleans, is generally not suited for walking or biking for transportation or physical activity.160
  ◦ Large disparities between rural and urban areas in terms of the number of recreational facilities available to residents. Many rural parishes have no facilities while East Baton Rouge Parish has over 50 facilities.127 Overall, only 23% of Louisiana residents live within half a mile of a park.126
  ◦ At least 56% of adults in Louisiana participate in regular physical activity.161

• Maximum intervention (100%) would represent ideal conditions where all residents, regardless of income or geographic region, have reasonable access to places where they could participate in individual physical activity opportunities or social recreation (e.g. gyms, basketball and tennis courts, soccer fields).

Projected Effect on Louisiana’s Childhood Obesity Prevalence

<table>
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<th>PRISM Results: Can a Policy Intervention to Improve Access to Physical Activity Spaces Reduce the Prevalence of Childhood Obesity?</th>
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Note: The symbol ↓ signifies that the percent change is negative, and the percent represents a decrease.

• Implementing policies that increase access to physical activity places and opportunities may slightly reduce the level of childhood obesity.

• Greater potential for effectiveness is seen if policies are set to the maximum level, which would mean that all residents have access to safe, affordable places to exercise and participate in physical activity.

Implementing the Policy

Because there is current movement in Louisiana to build bike paths, improve playgrounds, and increase the acreage of green space available to residents across the state, it appears that obtaining statewide support for this policy intervention is plausible and should be pursued. There are 40 State Parks and Historical Sites managed by the Louisiana Office of State Parks; 5 National Parks; Tammany Trace, a beautiful rail-to-trail project on the North Shore of Lake Pontchartrain; and numerous city-parish and neighborhood parks and open green spaces. Many new projects are underway to create and improve biking and walking trails, and build playgrounds and sports facilities. Ensuring access to these spaces is a critical component of this policy intervention. Special attention should be paid to physical activity opportunities in rural communities, many of which do not have access to safe, well-maintained recreation facilities. Capitalizing on the state’s endorsement of joint-use agreements with schools may be a critical way to close gaps in access for rural residents. A statewide policy that aims to increase access to recreational and physical activity opportunities could leverage funds to create new infrastructure or enhance existing recreational areas in rural communities.

“Individuals may have the necessary knowledge, skills, attitudes, and motivation to be physically active; however, if they do not have access to the necessary opportunities, they may be restricted or prohibited from being active. Having access to places and opportunities for physical activity and knowing these opportunities exist is important in order to increase physical activity. Efforts to increase access may not lead to increased use, unless the community is involved and aware of the efforts. With community support and involvement, it is likely that increased access to physical activity opportunities will result in increased use.”162

~The CDC Guide to Strategies for Increasing Physical Activity in the Community, 2010
POLICY INTERVENTION BRIEFS > PHYSICAL ACTIVITY INTERVENTION: PHYSICAL ACTIVITY PROMOTION

• The following brief reports the effects of physical activity promotion policies on the reduction of childhood obesity prevalence in the state of Louisiana, from an evidence-based modeling program.

• The physical activity promotion policy intervention includes the placement, pricing, and targeted local advertising of physical activity (PA) opportunities in communities, as well as mass media and social marketing campaigns to promote PA and active transportation.

Policy Goals

• Increase awareness of PA opportunities and make them accessible, affordable, and safe for all residents.

• Promote active transportation to school and to nearby destinations.

• Increase the number of children and youth meeting PA recommendations.

What Does the Research Tell Us?

• Louisiana youth are falling short of federal guidelines for aerobic PA (24.4% meet recommendations),111 vigorous PA (34.0%),145 and muscle-strengthening activities (40.8%).111

• Physically active children and youth have higher levels of cardiorespiratory endurance and muscular strength, lower body fatness, more favorable cardiovascular and metabolic disease risk profiles, enhanced bone health and reduced symptoms of anxiety and depression.144

• Physical activity levels decline as young people age.111

• There is a need for evaluation of PA promotion policies to determine their impact and effectiveness in reducing the prevalence of childhood obesity.19,153,163-165

Current Policy Environment in Louisiana

• There are no active statewide policies that provide funds or personnel to design and implement a mass media campaign or other promotional/marketing strategy to promote PA opportunities.

• Measures to support active transportation, especially biking and walking, have made headway in the legislature.166,167
  ◦ A Senate Concurrent Resolution creating a Complete Streets work group was passed in 2009 that recognizes the need for Louisiana transportation authorities to assume responsibility for creating safer, more accessible roadways for pedestrians and cyclists.155
  ◦ This workgroup published a detailed report with recommendations in 2010156 and was re-created in 2012.157
  ◦ House Bill No. 725 (2009) directed the Louisiana Highway Safety Commission to engage in a public awareness campaign to educate motorists and bicyclists of the 3-feet passing zone.168,169
  ◦ In the 2009 and 2010 Regular Session, legislators passed laws relating to bicycle safety (e.g. prohibiting harassment of bicyclists) and infrastructure funding.169-172

What is Active Transportation?

“Active transportation is any self-propelled, human-powered mode of transportation, such as walking or bicycling.”173

Children who walk or bicycle to school have higher daily levels of physical activity and better cardiovascular fitness than do children who do not actively commute to school.174

“What promotional and educational programs help increase rates of biking and walking to school?175-177[178] Parental safety concerns about traffic tend to be a common obstacle to biking and walking to school,178-181[182] but addressing safety behaviors and concerns through educational programs appears to be a promising strategy.”183

WAYS TO SUPPORT

Physical Activity Promotion

• Endorse school wellness by creating or implementing wellness programs and PA groups.

• Promote active transportation and host pedestrian/cyclist safety education events.

• Implement mass media campaigns to promote PA opportunities in communities.

• Increase signage in schools and communities to increase use of facilities, parks, and green space.

• Create incentives for using community park and recreation facilities, participating in competitive and non-competitive recreational activities, and using public or active transportation to/from home and school or nearby destinations.
Achieving Maximum Intervention Results

- Because Louisiana does not have state-specific data relating to physical activity promotion policies, the national level (1%) was used for the initial conditions setting. The national level reflects a severe lack of sustainable PA promotion policies across the United States.

- Maximum policy intervention (100%) would involve a sustained, targeted, highly visible media campaign; local communication to increase awareness of PA opportunities across the state; convenient and visible placement of options in communities; and affordable pricing to utilize the PA opportunities.

Projected Effect on Louisiana’s Childhood Obesity Prevalence

<table>
<thead>
<tr>
<th>PRISM Results: Can a Policy Intervention to Promote Physical Activity Reduce the Prevalence of Childhood Obesity?</th>
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<tbody>
<tr>
<td><strong>Policy Strength</strong></td>
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<tr>
<td><strong>Year Implemented</strong></td>
</tr>
<tr>
<td><em><em>% Change [ROU</em>]</em>*</td>
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Note: The symbol ↓ signifies that the percent change is negative, and the percent represents a decrease.

- Policies that promote PA may result in a 5% [Range of Uncertainty: 2-8%] drop in childhood obesity prevalence if the full intervention is implemented by 2016.

- There is a significant need to evaluate policies related to PA promotion beyond the school environment to determine long-term effects at the population-level.

Implementing the Policy

Although policies that promote PA are relatively new and will require extensive time and resources to remain sustainable, the health benefits of PA on children’s health are continuously re-confirmed as a top priority. There are many existing initiatives to promote PA statewide, and many community groups and government entities are actively working to spread the word about the benefits of regular PA. It may take a few years to gather support for a statewide PA marketing effort to materialize, but Louisianans appear to be on board in the promotion of PA, exercise, and fitness, especially for kids.

Schools and parents can be proactive in promoting PA for children in their neighborhoods. The Safe Routes to School Program exists within the LA Department of Transportation and Development. Although there are no policies endorsing or requiring schools to participate, the program provides grant money to schools who want to ensure that students of all abilities can safely walk or cycle to school. The goal of this program is to increase the number of students actively commuting to and from school. Additionally, schools and parents can work with local parks and recreation departments to advertise competitive and non-competitive sports and recreation programs at schools, community centers, and libraries. Because parks, recreation departments, and commercial recreational facilities are responsible for their own marketing and advertising, many youth may not be aware of opportunities that exist in their neighborhoods.

5-17 year olds: 60 minutes per day
Youth should incorporate each of these activities at least 3 days per week:

- 20 minutes moderate-to-vigorous-intensity
- muscle-strengthening
- bone-strengthening

“To increase physical activity, today’s children need safe routes to walk and bike ride to school, parks, playgrounds and community centers where they can play after school, and activities like sports, dance or fitness programs that are exciting and challenging enough to keep them engaged.”

~Let’s Move! (www.letsmove.gov)
The following brief reports the effects of policies that increase physical activity in schools on the reduction of childhood obesity prevalence in the state of Louisiana, from an evidence-based modeling program.

This policy intervention represents the establishment, implementation, and enforcement of physical activity (PA) and physical education (PE) requirements in schools, including before- and after-school programs.

Policies may also limit school-based screen time.

**Policy Goals**

- Ensure that all students, including those in special education programs, in elementary, middle, and high schools meet daily PA guidelines.
- Assist schools in fulfilling the laws regarding PE and PA requirements.
- Minimize the amount of screen time children are exposed to while in class and during before- and after-school programs.
- Reduce the amount of time youth spend sitting.

**What Does the Research Tell Us?**

- Less than half (42.5%) of LA adolescents in grades 9-12 participate in daily PE at school.111
- Consistent PA during childhood and adolescence improves strength and endurance, promotes bone and muscle growth, assists in weight-control, reduces overall anxiety and stress, promotes better self-esteem, and improves blood pressure and cholesterol levels.144
- Quality PE classes that include PA are associated with the following: preventing disease, fighting obesity, promoting lifetime wellness and physical fitness, teaching self-management and motor skills, stimulating learning and a well-rounded education, and providing unique opportunities for activity and social development.188-190

**Current Policy Environment in Louisiana**

- In 2009, legislation was passed that expanded a prior bill that promoted improved PA programs in schools and mandated PA guidelines (for K-6). The amendment extended its PA mandates to grades 7 and 8 and required the establishment of local school health advisory councils to advise school boards on students’ PA health education, and nutrition standards.191
- Additionally, in 2009, a policy enabled the implementation of state-wide health-related fitness assessments designed to determine the physical fitness levels of students in schools and to measure the effectiveness of PA interventions.192
- In 2012, a Senate Resolution was adopted that requests state education agencies to conduct a study or survey to determine compliance with state law regarding vending machines and PA requirements in schools.193

**LA Dept of Education Guidelines:**

**Public schools**

- Require elementary and middle schools to provide 150 minutes minimum of PE per week
- Require high school students to take at least 1.5 units of PE and 0.5 units of health education

**Private schools**

- Require 2 units of PE with at least 30 hours of daily health instruction taught in each unit

**What is Screen Time?**

“The number of minutes/hours that a child spends each day looking at a screen - TV, movie, cell phone or handheld/ personal computer”

Recommended amount of screen time for children and youth is: 2 hours MAXIMUM

**WAYS TO SUPPORT Physical Activity in Schools**

- Enforce the PE and PA requirements for all grade levels.
- Regulate screen time limits of non-educational screen time (computer/television) during school hours and for before- and after-school programs.
- Develop school-based parent & child PA programs and groups.
- Join Safe Routes to School to promote walking and biking to school.
- Encourage students to spend breaks being physically active.
- Encourage children and adolescents to play sports and promote the formation of non-competitive (e.g. intramural) sports teams and leagues.
Achieving Maximum Intervention Results

- Initial conditions for this policy intervention were determined from estimates of the percentage of children meeting the recommended levels of PA and screen time daily, and based on the survey data reported in conjunction with established policy mandates.11,198 Because PA policies in Louisiana’s elementary, middle, and high schools are not fully enforced, the initial conditions level was set at the lowest value (0%).

- Maximum intervention (100%) reflects a scenario where all Louisiana’s children and adolescents are meeting recommended PA levels (60 minutes) and screen time limits (less than two hours) at school.

Projected Effect on Louisiana’s Childhood Obesity Prevalence

<table>
<thead>
<tr>
<th>Policy Strength</th>
<th>Maximum (100%)</th>
<th>Maximum (100%)</th>
<th>Moderate (50%)</th>
<th>Moderate (50%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year Implemented</td>
<td>2013</td>
<td>2016</td>
<td>2013</td>
<td>2016</td>
</tr>
<tr>
<td>% Change [ROU*]</td>
<td>↓ 5% [3-7%]</td>
<td>↓ 4% [2-5%]</td>
<td>↓ 1% [0-2%]</td>
<td>↓ 1% [0-2%]</td>
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* ROU refers to the Range of Uncertainty determined by the PRISM sensitivity analysis
Note: The symbol '⊥' signifies that the percent change is negative, and the percent represents a decrease.

- Supporting and enforcing physical activity policies in schools may play a role in incrementally moving the needle to reduce childhood obesity.
- Maximum strength policy interventions project a higher reduction in childhood obesity prevalence in Louisiana.

Implementing the Policy

Recently enacted policies have established and re-defined guidelines for PE in Louisiana. However, these policies may not be implemented or enforced because children are not participating in enough PA. While teachers and principals attempt to meet performance standards for statewide standardized testing, time allotted for PA or PE is often eliminated so students can concentrate on their academic studies.199 However, many studies have shown that PE does NOT negatively affect academic performance, and actually has favorable effects on academic achievement.200-202 As outlined by the National Association for Sport and Physical Fitness, there are many resources that assist teachers in finding ways to incorporate PA into their lesson plans.203,204

Although schools bear the burden to offer comprehensive PE classes by qualified teachers, parents and community groups can assist schools in helping youth participate in out-of-school-time PA.205 Recreational organizations can promote or offer affordable sports activities at or near schools. Parents or caregivers can form a "walking school bus" to actively transport children to nearby schools.

Additionally, physicians and nurses in clinics or in schools can support active school communities and be important advocates for policy changes that support healthy nutrition, increase PA levels, and reduce sedentary time, as well as provide information for families about regular PA and reduced sedentary time in their clinical practices and school based health centers.206,207

“Physical education is at the core of a comprehensive approach to promoting physical activity through schools. All children, from pre-kindergarten through grade 12, should participate in quality physical education classes every school day with a qualified and appropriately trained physical education specialist. Physical education has the potential to help students develop the knowledge, attitude, skills, behavior, and confidence needed to be physically active for life.”208

- Bulletin 102: Louisiana Physical Education Content Standards: State Standards for Curriculum Development
The following brief reports the effects of policies that increase physical activity in child care on the reduction of childhood obesity prevalence in the state of Louisiana, from an evidence-based modeling program.

This policy intervention represents enforced statewide guidelines that require licensed child care facilities to provide the recommended amount of physical activity for children less than five years old.

Also, policies creating screen-time limits for children attending child care are included in this policy intervention.

**Policy Goals**

- Ensure that all children attending child care centers meet moderate- to vigorous-intensity physical activity daily goals appropriate for their age group.
- Minimize the amount of screen time for children.
- Reduce the amount of overall sitting time for children.

**What Does the Research Tell Us?**

- 12.9% of Louisiana children aged 2-5 years are obese.209
- Excess weight gain and obesity in early childhood predicts later obesity and cardiometabolic risk210 and can alter developing neurological, metabolic, and behavioral systems in ways that increase the risk for obesity and chronic disease.58
- Health and education are connected: learning and practicing healthy habits in child care is not only the best preparation for school, but can lay the foundation for developing a healthy lifestyle.211,212
- Child care policies and practices can greatly influence activity levels, screen time exposure, and healthy weight gain during child maturation.213

**Current Policy Environment in Louisiana**

- An evaluation of Louisiana’s state child care policies gave the state an overall grade of ‘C’, noting an absence of regulations requiring physical activity or limiting screen time.214 While Louisiana’s child care centers should provide children with daily physical activity and outdoor play time, and ensure that children are not seated for extended periods of time, the current regulations are not sufficient to meet national recommendations.
- In 2011, proposed legislation would have initiated changes in standards for physical activity and screen time for licensed child care facilities. The bill called for a requirement of 60 minutes of structured physical activity daily for all ages. It also prohibited screen time for children less than two years old and limited screen time to no more than one hour for children over two years old.215,216 The bill was ultimately deferred by the LA House Committee on Health and Welfare and was not signed into law.
- In 2011, a House Resolution (HR No. 154) was enacted requesting Louisiana Department of Child and Family Services to adopt physical fitness standards for child care facilities, citing the poor state grade on child care regulation and an increase in the state’s obesity prevalence.217

**Recommended amount of daily structured physical activity by age group**:144,184,185;

- 1-3 year olds: 30 minutes per day
- 3-5 year olds: 60 minutes per day

Each age group should participate in at least 60 minutes of unstructured physical play time per day.

**What is Screen Time?**

The number of minutes/hours that a child spends each day looking at a screen - TV, movie, cell phone or handheld/ personal computer.196

Recommended amount of screen time by age group217,218:

- 0-2 years: **NO SCREEN TIME**
- 2-5 years: 30 minutes a day **MAXIMUM**

**WAYS TO SUPPORT Physical Activity in Child Care**

- Require physical activity in child care centers based on recommended levels for children.
- Specify and enforce age-appropriate screen time limits in child care facilities.
- Encourage unstructured free play that reduces overall sitting time.
- Provide children with ample, safe equipment to use while participating in physical activity.
Achieving Maximum Intervention Results

- Louisiana has no active policies that require child care facilities to provide opportunities for children to meet the recommended amount of physical activity levels and screen time limits. Therefore, the child care physical activity policy intervention initial setting reflects the lowest possible value (0%).
- Maximum intervention (100%) represents implemented requirements for: 60 minutes of unstructured physical play, 60 minutes of structured physical activity, and a maximum screen time limit of two hours for children aged two years or older, with no screen time for children less than two years old.

Projected Effect on Louisiana’s Childhood Obesity Prevalence

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<td>2016</td>
</tr>
<tr>
<td>% Change [ROU*]</td>
<td>↓ 2% [1-3%]</td>
<td>↓ 2% [1-3%]</td>
<td>↓ 1% [0-2%]</td>
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- Policy interventions targeting children in child care may have a minor effect on the prevalence of childhood obesity.
- Most research has focused on obesity prevention in schools rather than child care facilities. Child care centers are underutilized opportunities for obesity prevention interventions and research.

Implementing the Policy

Developing obesity in early childhood can be extremely detrimental in terms of long-term health and well-being. With working families’ increasing reliance on child care and the recognition of the untapped potential for child care facilities to make an impact to prevent childhood obesity, child care is an ideal environment to promote physical activity in structured programs and unstructured play, reduce young children’s overall sedentary time, and therefore reduce their risk of obesity during their formative years.

When the Louisiana House passed HR No. 154 regarding child care physical activity requirements and screen time limits, this reflects potential for implementing future programs and policies authorizing the recommended guidelines set by medical associations and researchers. In addition, the School Readiness Report, a response to HCR No. 179 of the 2010 Regular Session, recommends that all children participate in physical activity as a critical element to prepare to enter kindergarten. All states have minimum health, safety, and nutrition standards, but including physical activity requirements and screen time limits in the state licensing and certification procedures will require additional buy-in from central stakeholders. Licensed child care providers will be important participants in the policy development and will need to be consulted during every step of the process, from early discussions to implementation to evaluation. Additionally, support from parents and caregivers will be critical in creating new regulations for child care facilities, as they are the most invested and important figures that can affect and promote the health of their children.

About 60% of children less than 5 years of age with employed mothers are in some type child care arrangement for an average of 29 hours per week nationwide.

“Child care settings can and should provide an environment in which young children are offered nutritious foods and regular physical activity through structured and unstructured play so that they learn these healthful lifestyle behaviors at an early age. Child care homes and centers offer many opportunities to form and support healthful eating habits and physical activity patterns in young children. Thus they can play a critical role in laying a foundation for healthy weight.” ~Story et al., 2006
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78. Louisiana Revised Statute No. 17:197.1. Foods and beverages other than school breakfast or lunch in public elementary and secondary schools; legislative findings; restrictions (2009).


80. Louisiana Senate Bill No. 146, Act 331. Limit students' access to certain foods and beverages at school (2005).


125. Louisiana House Bill No. 193. Act 279. Schools/Food Programs: Provides relative to school nutrition programs (2009).


215. Louisiana House Bill No. 993. Requires day care facilities to institute a minimum daily level of physical activity and maximum daily level of sedentary activity for children in their care (2012).
216. Louisiana House Resolution No. 154. Requests the Dept. of Children and Family Services to adopt physical fitness standards for child day care facilities (2011).
222. Louisiana House Concurrent Resolution No. 179. Requests the Dept. of Social Services and the Dept. of Education to work collaboratively to ensure that children enter kindergarten ready to learn and to submit an annual school readiness report to the governor, legislative education committees, and BESE (2010).