



## STRATEGIES TO PREVENT OVERWEIGHT AND OBESITY FALL, 2010

### INTRODUCTION

As overweight and obesity rates continue to climb in the United States, public health researchers and advocates from across the country are expanding their list of recommendations for the most promising strategies to reverse the epidemic. The most effective way to reduce the population prevalence of overweight and obesity is to focus on changing the environments in which we live – this is the key to changing individual behavior. A healthier environment allows individuals to practice healthier behaviors and more easily choose the healthiest options. Environmental change is accomplished best through public policy.

Obesity prevention is topping the list of priorities for local, state, and federal policy makers and public health advocates. First Lady Michelle Obama's *Let's Move* campaign is a catalyst for new initiatives on all levels, making *real change* to our "obesogenic" environments both imminent and reachable.

Because the policy options are many, the Rudd Center has created this list of issues and recommendations to highlight those policies that have the potential for the greatest impact. The recommendations are evidence-based and many are relatively inexpensive to implement. In

addition, because no single environmental change can solve the problem, the recommendations address a wide range of issues. All of these strategies have been considered by state and local policy makers around the country and, in some cases, have already become law.

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### PRESCHOOLS

Approximately 75% of children ages 3-6 are in some type of child care, with 57% in center-based child care, where they spend an average of 28 hours per week.<sup>1</sup> In addition:

- Nearly 25% of children ages 2-5 are either overweight or obese.<sup>2</sup>
- Many children consume over half of the foods needed to meet their Dietary Reference Intake in child care settings.<sup>3</sup>
- Approximately 3.2 million children are fed through the USDA's Child and Adult Care Food Program (CACFP),<sup>4</sup> whose nutrition standards for reimbursable meals and snacks could be improved.

Research provides clear evidence that the food habits and patterns children acquire in early childhood remain with them into adulthood.<sup>5</sup> However, according to a 2009 report from Duke University on preschool obesity-prevention regulations, most

preschools in the country have achieved only average grades for the comprehensiveness of their obesity prevention policies, when compared with model standards. The list below identifies several ways in which preschools can improve children's diets, help instill healthy nutrition patterns, and play a part in preventing obesity and overweight in this young population.

#### ***Preschool Beverages***

**Issue:** Children ages 2 and older should drink only low- or non-fat milk.<sup>6</sup> CACFP guidelines do not require that milk served to this age group be low- or non-fat, therefore allowing full-fat milk to be served.<sup>7</sup>

**Recommendation:** *For children older than age 2, preschools should serve only low- or non-fat milk with no added flavoring or sweeteners.*

**Issue:** Children should not drink more than 4-6 oz. of fruit juice per day.<sup>8</sup>

Because parents do not typically set limits on consumption at home, preschools should not serve it.

**Recommendation:** *Limit the amount of juice served to four ounces or fewer per day.*

**Alternatively:** *Do not serve juice of any kind in preschools.*

**Issue:** Only 6 states have regulations prohibiting preschools from serving sugar-sweetened beverages.<sup>9</sup> Children should not be served beverages with added sugar in

preschools. This includes juice drinks.<sup>10</sup>

**Recommendation: Prohibit sugar-sweetened beverages from being served in preschools.**

**Issue:** Preschools may not be making water available or accessible.

**Recommendation: Ensure that water is available and accessible throughout the day.**

### Preschool Food

**Issue:** Most children, including preschoolers, consume an excess of sugar, fat, cholesterol and sodium.<sup>11</sup> Many parents rely on child care to provide nutritious foods for their children,<sup>12</sup> but preschools often do not follow model state child care regulations, and are serving unhealthy snacks and meals.<sup>13</sup>

**Recommendation: Follow best practices guidelines to ensure that meals and snacks emphasize nutrient-rich foods, including fruits, vegetables, whole grains, low-fat or non-fat dairy, lean meats, skinless poultry, fish, eggs, legumes, nuts, and seeds.**

**Issue:** Children ages 4-8 are consuming four times as much sugar per day (21 teaspoons) as is recommended.<sup>14</sup>

**Recommendation: Serve meals and snacks that contain little or no added sugar or sweeteners.**

### Preschool Wellness Policies

**Issue:** Strong policies can improve children's health by guiding the day-to-day practices in child care programs.<sup>15</sup> At present, CACFP preschools are not required to have wellness policies.

**Recommendation: The State's Department of Education should require preschools to write and implement wellness policies which address:**

- **nutrition standards**

- **the eating environment**
- **nutrition education**
- **physical activity**
- **communicating and promoting health messages**
- **evaluation of the policy.**

### Preschool Physical Activity

**Issue:** Preschool children's activity levels begin to decrease between the ages of 3-5.<sup>16</sup> Children have significantly higher levels of moderate-to-vigorous physical activity when outdoor play is 60 minutes or longer.<sup>17</sup> However, few state regulations for preschools meet model guidelines for physical activity, which include providing outdoor, active play time at least twice a day.<sup>18</sup>

**Recommendation: Preschool children should be provided at least 60 total minutes of outdoor time to play, at least twice daily, weather and air quality permitting.**

### Marketing to Preschoolers

See under Marketing to Children

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## SCHOOLS

Among children and adolescents ages 2-19 years, approximately 32% are overweight or obese.<sup>19</sup> Obese children and adolescents are more likely to become obese adults, increasing their risk for adult health problems such as type 2 diabetes, heart disease, several types of cancer, and strokes.<sup>20</sup> Children spend a significant amount of time in school, and so can benefit from a school environment that offers only nutritious foods and beverages, and plenty of opportunity for exercise.

### School Beverages

**Issue:**

- Sugar-sweetened beverage\* consumption is associated with increased caloric intake, weight

gain and obesity in children.<sup>21</sup>

The American Academy of Pediatrics (AAP) states that soft drinks should not be sold as part of, or in competition with, the school lunch program and pediatricians should work to eliminate sweetened drinks in schools.<sup>22</sup>

- Milk: Children ages 2 and older no longer require full-fat milk.<sup>23</sup>
- Juice: The AAP recommends that children drink no more than 4-6 oz. of fruit juice per day.<sup>24</sup>

**Recommendation: Schools (K-12) should serve only:**

- **low- or non-fat milk containing no added flavoring/sweeteners**
- **water**
- **juice in no more than 4-8 ounce containers.**

**Water should be made available and free of charge throughout the school.**

\*These include soda, sports drinks, fruit juice drinks with added sugar, energy drinks, sweetened teas, waters, and flavored milks.

### Competitive Food Standards

**Issue:** "Competitive foods" (aka "foods of minimal nutritional value") are sold separately from the School Breakfast Program (SBP) and National School Lunch Program (NSLP) meals. The standards set by the federal government for competitive foods are insufficient, allowing the sale or serving of foods high in fat, calories, sugar, and sodium.<sup>25</sup> A 2006 Centers for Disease Control (CDC) study found that 33% of elementary schools, 71% of middle schools, and 89% of high schools had vending machines, a school store, canteen, and/or snack bar where students could buy competitive foods. Most of what was sold was of poor nutritional quality.<sup>26</sup>

**Recommendation: Schools should sell and serve only those competitive foods which meet the standards set**

forth by the Institute of Medicine (IOM).<sup>27</sup>

#### **School Meal Nutrition Standards**

**Issue:** The current nutrition standards set by the federal government for meals served as part of the SBP and NSLP are inconsistent with the most recent Dietary Guidelines for Americans (DGA) and may be contributing to the increased prevalence of childhood obesity.<sup>28</sup> Students participating in these programs consume meals that are higher in fat, sodium, sugar, and calories, compared to non-participants.<sup>29</sup>

**Recommendation:** Schools should follow the recommendations set forth by the IOM (or equivalent standards), which include:

- increasing the amount and variety of fruits, vegetables, and whole grains;
- setting a minimum and maximum level of calories; and
- focusing on the reduction of saturated fat and sodium.<sup>30</sup>

#### **Universal Free School Breakfast**

**Issue:** Many schools do not offer Universal Free School Breakfast, a program in which breakfast is served free of charge to all students, regardless of income. Children who eat breakfast are more likely to have a lower body mass index,<sup>31</sup> perform better on tests,<sup>32</sup> and have improved cognitive function, attention, and memory.<sup>33</sup> Universal Free School Breakfast programs increase student participation in breakfast.<sup>34</sup>

**Recommendation:** Funding should be made available to enable schools to implement Universal Free School Breakfast programs.

#### **School Wellness Policies**

**Issue:** Strong and comprehensive wellness policies can set excellent standards for nutrition and physical

activity in schools. Many schools have policies, but they lack strength, specificity, and comprehensiveness,<sup>35</sup> causing missed opportunities for schools to have a positive impact on children's health and well-being.

**Recommendation:** School wellness policies should mandate that:

- such policies be implemented and evaluated using a validated measurement tool;
- a permanent school wellness committee be instituted; and
- the policies be made public.

#### **Marketing to Children in Schools**

See under Marketing to Children

## CONSUMPTION OF SUGAR-SWEETENED BEVERAGES

Sugar-sweetened beverages (SSBs) with little or no nutrition are staples of today's American diet. More than for any category of food, rigorous scientific studies have shown that consumption of SSBs is associated with poor diet, increasing rates of obesity, and risk for diabetes.<sup>36</sup> These links are strong for children.

Taxing SSBs to reduce consumption has been proposed as one means of improving the nation's nutrition, raising revenue for health programs, and recovering costs caused by the consumption of calorie-dense, nutrient-poor foods. It has been estimated that a penny per ounce tax would be sufficient to reduce consumption.<sup>37</sup>

A recent USDA report estimated that a 20% increase in the price of SSBs could result in a reduction of calories sufficient to reduce the prevalence of both child and adult overweight and obesity.<sup>38</sup> The effect of the tax on obesity and overweight could be

enhanced by using the revenues collected for obesity-prevention programs.<sup>39</sup>

**Issue:** Sugar-sweetened beverages are the single largest source of calories in the American diet,<sup>40</sup> and consumption of them contributes to obesity.

**Recommendation:** Raise the cost of sugar-sweetened beverages by 10-20% to have an impact on consumption. This could be accomplished through excise taxes; revenue raised could be earmarked for obesity prevention.

## MARKETING TO CHILDREN

Food marketing to children and adolescents is a major public health concern. It has a direct and powerful impact on young people's food preferences and eating behaviors, and negatively affects their diet, weight, and health. The food industry spends over \$1.6 billion per year in the U.S. to market their products directly to young people.<sup>41</sup> The overwhelming majority (98%) of television ads are for unhealthy products which are high in calories, fat, sugar, and/or sodium<sup>42</sup>, such as high-sugar breakfast cereals, fast food, soft drinks, and candy.

A recent study demonstrated that children consumed 45% more when they were exposed to TV food advertising.<sup>43</sup> While television is still the predominant platform for marketing to children, other venues are increasingly being used: Internet, email, text messaging, viral marketing, cross-promotions (e.g., using licensed characters from movies on fast food packaging), and supermarket displays.

**Issue:** Children are exposed to branded foods and other advertising in preschools. Branding food packages with licensed characters substantially influences young children's taste preferences and snack selection and does so most strongly for calorie-dense, nutrient-poor foods.<sup>44</sup>

**Recommendation:** *Preschools should be free of all materials with branded foods.*

**Issue:** Food marketing to youth has been shown to increase children's caloric intake, and preferences for, and consumption of, advertised foods.<sup>45</sup> Ninety-eight percent of those foods are unhealthy—i.e., high in sugar, fat, and/or sodium.<sup>46</sup>

In 2006, the Federal Trade Commission found that food companies spent \$186 million on in-school marketing.<sup>47</sup> Materials containing advertising for branded foods can be found throughout schools.

**Recommendation:** *Schools should be free of all materials with branded foods.*

**Issue:** Materials with branded foods are displayed on government property frequented by children, including zoos, parks, recreation centers, and hospitals.

**Recommendation:** *Government property frequented by children should be free of all materials with branded foods.*

**Issue:** Chain restaurants offer toys or other incentive items with children's meals and other foods. In 2006, 1.2 billion meals with toys were bought for children under age 12.<sup>48</sup> The meals fail to meet good nutrition standards (i.e., they are high in fat, sodium and sugar). The use of sales practices that appeal to children, such as toy giveaways, contributes to an

environment that puts children's health at risk.<sup>49</sup> It also undermines parents' desire to feed children healthy meals.

**Recommendation:** *Food sold as children's meals in chain restaurants must meet specific nutrition standards if they include incentives (e.g., toys and other giveaways).*

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## WEIGHT BIAS

Science has documented clear, consistent evidence that overweight people face discrimination in employment, education, and health care.<sup>50</sup> Recent estimates suggest that over the past decade the prevalence of weight discrimination has increased by 66%.<sup>51</sup> Weight bias has serious medical and psychological consequences, can reduce earning potential and affect hiring and promotion opportunities, and affects academic opportunities and achievement.<sup>52</sup>

**Issue:** Michigan has the only state law prohibiting discrimination against overweight people, enacted in 1977.<sup>53</sup>

**Recommendation:** *Discrimination should be prohibited against overweight and obese people in employment, housing, real estate, the use of public accommodations, public service, and educational facilities.*

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## FOOD DESERTS

As rates of overweight, obesity, and diet-related chronic diseases climb throughout the population, the Surgeon General<sup>54</sup> as well as doctors and dietitians advise Americans to eat plenty of fresh, healthy, and unprocessed foods such as fruits, vegetables, and whole grains, every day. However, all Americans do not have equal access to these

recommended foods. Low-income people, minorities, and rural residents typically live in areas that have fewer supermarkets and groceries carrying healthy food. They also suffer the highest rates of preventable, diet-related diseases linked to insufficient consumption of healthy foods.<sup>55</sup>

When available, the cost of fresh foods in low-income areas is often high and consumers don't have easy access to transportation to the markets.<sup>56</sup> These and other factors combine to make it difficult for people living in low-income areas to take steps to maintain a healthy weight.

**Issue:** Access to healthy, fresh, affordable foods is limited in low-income neighborhoods throughout the United States.

**Recommendation:** *Institute a Healthy Food Financing Initiative to incentivize building supermarkets in low-income food deserts.*

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## SURVEILLANCE

In order to examine the impact of obesity-related policies, it is essential to have accurate and ongoing assessments of outcome variables such as obesity rates. It is unlikely that any one initiative will result in a statistically significant decrease in obesity in the short term; therefore, it is critical to have regular assessments not only of this long-term outcome, but also several more proximal outcomes.<sup>57</sup>

Levels of physical activity and eating behaviors are the most relevant variables. National surveys conducted by the CDC are available as a general index of these behaviors, and allow comparisons to other states, but state-level data are not routinely collected.

**Issue:** Thirty states do not collect data on childhood obesity rates.<sup>58</sup> Some states do collect data on childhood obesity, but the efforts are not coordinated, tracked and evaluated by a central body that is supported by the highest levels of state government. Therefore, those data cannot be used to best advantage in coordinating efforts to prevent childhood obesity.

**Recommendation:** States can require the collection of data on students for the purpose of statewide surveillance, including:

- body mass index
- food security
- dietary quality
- physical fitness.

**In order to protect the identity of the subjects, only the State's Dept. of Education needs to keep identified data; those data can be shared with other agencies in de-identified form.**

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## REFERENCES

- <sup>1</sup> *Federal Interagency Forum on Child and Family Statistics: America's Children: Key National Indicators of Well-Being, 2002*. Washington, DC: U.S. Gov't. Printing Office, 2002; National Center for Education Statistics. Fast facts: What are the characteristics of children in early childhood programs? Accessed 09/08/2010 at <http://nces.ed.gov/fastfacts/display.asp?id=78>.
- <sup>2</sup> Ogden C, et al. High body mass index for age among US children and adolescents, 2003-2006. *JAMA*. 2008; 299(20):2401-2405.
- <sup>3</sup> Fox MK, et al. *Early childhood and child care study: Nutritional assessment of the CACFP, vol. 2: Final report*. Washington: U.S. Dept. of Agriculture, Food and Consumer Service, 1997; American Dietetic Assn. Position of the American Dietetic Assn.: Dietary guidance for healthy children ages 2 to 11 years. *JADA*. 2004; 104(4):660-677.
- <sup>4</sup> USDA Food and Nutrition Service CACFP website accessed 09/08/2010 at <http://www.fns.usda.gov/cnd/care/>
- <sup>5</sup> American Dietetic Assn. Position of the American Dietetic Assn.: Benchmarks for nutrition programs in child care settings. *JADA*. 2005; 105(6):979-986.
- <sup>6</sup> American Heart Assn., American Academy of Pediatrics. Dietary recommendations for children and adolescents: A guide for practitioners: Endorsed Policy Statement. *Pediatrics*. 2006; 117(2):544-559; US Dept Agric., US Dept. Health Human Services. Dietary Guidelines for Americans 2005. Accessed 09/08/2010 at <http://www.health.gov/dietaryguidelines/>
- <sup>7</sup> USDA's Child and Adult Care Food Program Meal Patterns. Accessed 09/08/2010 at [http://www.fns.usda.gov/cnd/care/programbasics/meals/meal\\_patterns.htm](http://www.fns.usda.gov/cnd/care/programbasics/meals/meal_patterns.htm)
- <sup>8</sup> American Academy of Pediatrics, Committee on Nutrition. The use and misuse of fruit juice in pediatrics: Policy statement. *Pediatrics*. 2001; 107(5):1210-1213.
- <sup>9</sup> Levi J, et al. F as in fat: How obesity threatens America's future. 2010. Washington DC: Trust for America's Health. Accessed 09/08/2010 at [www.healthyaamericans.org](http://www.healthyaamericans.org)
- <sup>10</sup> American Academy of Pediatrics Policy Statement. Op.cit.; Barlow SE. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: Summary report. *Pediatrics*. 2007; 120(3):5164-192.
- <sup>11</sup> Rocchini AP. Childhood obesity and a diabetes epidemic. *NEJM*. 2002; 346: 854-855.
- <sup>12</sup> Piernas C & Popkin BM. Trends in snacking among U.S. children. *Health Aff*. 2010;29(3): 398-404.

- <sup>13</sup> Duke University Department of Community and Family Medicine. Preventing obesity in the child care setting: Evaluating state regulations. Accessed 09/08/2010 at <http://cfm.mc.duke.edu/childcare>
- <sup>14</sup> Johnson RK, et al. on behalf of the American Heart Assn. Nutrition Committee of the Council on Nutrition, Physical Activity, and Metabolism and the Council on Epidemiology and Prevention. Dietary sugars intake and cardiovascular health: A scientific statement from the American Heart Assn. *Circ*. 2008; 120:1011-1020; U.S. Dept. of Agriculture. (2008) Inside the pyramid: How many discretionary calories can I have? Accessed 09/08/2010 at [www.mypyramid.gov/pyramid/discretionary\\_calories\\_amount\\_print.html](http://www.mypyramid.gov/pyramid/discretionary_calories_amount_print.html).
- <sup>15</sup> Connecticut State Dept. of Education. (June 2010) Action guide for child care nutrition and physical activity policies: Best practices for creating a healthy child care environment. Accessed 09/08/2010 at [www.sde.ct.gov](http://www.sde.ct.gov).
- <sup>16</sup> Taylor RW, et al. Longitudinal study of physical activity and inactivity in preschoolers: The FLAME study. *Med & Sci in Sports & Exer*. 2009; 41(1): 96-102.
- <sup>17</sup> Grode GM, et al. Preschool environmental factors associated with physical activity. Paper presented at the American Public Health Assn. Annual Meeting, Philadelphia PA, November 11, 2009.
- <sup>18</sup> Duke University Department of Community and Family Medicine. Op.cit.
- <sup>19</sup> Ogden CL, et al. Prevalence of high body mass index in US children and adolescents, 2007-2008. *JAMA*. 2010; 303(3):242-249.
- <sup>20</sup> U.S. Surgeon General. *Overweight and obesity: Health consequences*. Rockville: MD; 2001. Accessed 09/08/2010 at [www.surgeongeneral.gov](http://www.surgeongeneral.gov).
- <sup>21</sup> Gortmaker S, et al. (in press). *The negative impact of sugar-sweetened beverages on children's health*. Cambridge, MA: Harvard University, 2009; Forshee R, et al. Sugar-sweetened beverages and body mass index in children and adolescents: A meta-analysis. *AJCN*. 2008; 87(6):1662-1671; Vartanian L, et al. Effects of soft drink consumption on nutrition and health: A systematic review and meta-analysis. *AJPH*. 2007; 97(4):667-675; Malik V, et al. Intake of sugar-sweetened beverages and weight gain: A systematic review. *AJCN*. 2006; 84(2):274-288; Ludwig DS, et al. Relation between consumption of sugar-sweetened drinks and childhood obesity: A prospective, observational analysis. *Lancet*. 2001; 357(9255):505-508.
- <sup>22</sup> American Academy of Pediatrics, Committee on School Health. Policy statement on soft drinks in schools. *Pediatrics*. 2004; 113(1):152-154. A statement of

reaffirmation for this policy was published 05/01/2009.

<sup>23</sup> AHA, AAP Guide for practitioners. Op cit.

<sup>24</sup> American Academy of Pediatrics, Committee on Nutrition. Policy statement on juice. Op cit.

<sup>25</sup> 7 C.F.R. Appendix B to Part 210—Categories of Foods of Minimal Nutritional Value. Accessed 09/08/2010 at <http://law.justia.com/us/cfr/title07/7-4.1.1.1.6.1.9.2.html>

<sup>26</sup> O'Toole TP, et al. Nutrition services and foods and beverages available at school: Results from the School Health Policies and Programs Study 2006. *J School Health*. 2007;77(8):500–21.

<sup>27</sup> Institute of Medicine. (April 2007) Report Brief. Nutrition standards for foods in schools: Leading the way toward healthier youth. Accessed 09/08/2010 at <http://www.iom.edu/~media/Files/Report%20Files/2007/Nutrition-Standards-for-Foods-in-Schools-Leading-the-Way-toward-Healthier-Youth/FoodinSchools.pdf>

<sup>28</sup> Stallings VA & Taylor CL, eds. Nutrition standards and meal requirements for national school lunch and breakfast programs: Phase I. Proposed approach for recommending revisions. *Institute of Medicine of the National Academies*. Washington, DC: The National Academies Press, 2008.

<sup>29</sup> Gordon A, et al. *USDA, Food and Nutrition Service, Office Nutrition Dietary Assessment Study-III: Vol. II: Student Participation and Dietary Intakes*. Alexandria, VA: 2007.

<sup>30</sup> Stallings VA, et al. eds. School meals. Building blocks for healthy children. *Committee on Nutrition Standards for National School Lunch and Breakfast Programs. Food and Nutrition Board. Institute of Medicine of the National Academies*. Washington, DC: National Academies Press. 2010.

<sup>31</sup> Fiore H, et al. Potentially protective factors associated with healthful body mass index in adolescents with obese and nonobese parents: A secondary data analysis of the third National Health and Nutrition Examination Survey, 1988-1994. *JADA*. 2006;106:55-64; Barton BA, et al. The relationship of breakfast and cereal consumption to nutrient intake and body mass index: The National Heart, Lung, and Blood Institute Growth and Health Study. *Circ*. 2005; 105(9):1383-1389; Nicklas TA, et al. Breakfast consumption affects adequacy of total daily intake in children. *JADA*. 1993; 93(8):886-891; Jones SJ, et al. Lower risk of overweight in school-aged food insecure girls who participate in food assistance: Results from the panel study of income dynamics child development supplement. *Arch Ped & Adol Med*. 2003; 157:780-84.

<sup>32</sup> Vaisman N, et al. Effects of breakfast timing on the cognitive functions of elementary

school students. *Arch Ped & Adol Med*. 1996; 150:1089-1092.

<sup>33</sup> Wesnes KA, et al. Breakfast reduces declines in attention and memory over the morning in schoolchildren. *Appetite*. 2003; 41(3):329-31.

<sup>34</sup> Food Research and Action Center. Universal School Breakfast Programs. Fact Sheet. Accessed 09/08/2010 at [http://www.frac.org/pdf/universal\\_sbp.PDF](http://www.frac.org/pdf/universal_sbp.PDF).

<sup>35</sup> Belansky E, et al. (June, 2009) Local school wellness policies: How are schools implementing the Congressional mandate? A research brief. Robert Wood Johnson Foundation. Accessed 09/08/2010 at <http://www.rwjf.org/pr/product.jsp?id=44708>

<sup>36</sup> Vartanian LR, et al. Op.cit.

<sup>37</sup> Brownell KB, et al. The public health and economic benefits of taxing sugar-sweetened beverages. *NEJM*. 2009; 361(16):1599-1605.

<sup>38</sup> Smith TA, et al. *Taxing caloric sweetened beverages: Potential effects on beverage consumption, calorie intake, and obesity*. ERR-100, U.S. Department of Agriculture, Economic Research Service, July 2010.

<sup>39</sup> Brownell KB, et al. Op. cit.

<sup>40</sup> Block G. Foods contributing to energy intake in the US: data from NHANES III and NHANES 1999-2000. *J Food Compos Anal*. 2004;17(3-4):439-447.

<sup>41</sup> U.S. Federal Trade Commission. Marketing food to children and adolescents. A review of industry expenditures, activities, and self-regulation. A report to Congress, July 2008. Accessed 09/08/2010 at [www.ftc.gov/os/2008/07/P064504foodmktngreport.pdf](http://www.ftc.gov/os/2008/07/P064504foodmktngreport.pdf)

<sup>42</sup> Powell LM et al. Op.cit.

<sup>43</sup> Harris JL, et al. Priming effects of television food advertising on eating behavior. *Health Psych*. 2009; 28(4):404-413.

<sup>44</sup> Roberto CA, et al. Influence of licensed characters on children's taste and snack preferences. *Pediatrics*. 2010; 126(1):88-93; Robinson TN, et al. Effects of fast food branding on young children's taste preferences. *Arch Ped & Adol Med*. 2007; 161(8): 792-797.

<sup>45</sup> McGinnis JM, et al, eds. Food marketing to children and youth. Threat or opportunity? *Committee on Food Marketing and the Diets of Children and Youth. Food and Nutrition Board. Board on Children, Youth, and Families. Institute of Medicine of the National Academies*. Washington, DC: The national Academies Press. 2006.

<sup>46</sup> Powell LM, et al. Nutritional content of television food advertisements seen by children and adolescents in the United States. *Pediatrics*. 2007; 120(3): 576-583.

<sup>47</sup> Molnar A, et al. The twelfth annual report on schoolhouse commercialism trends: 2008-2009. Education and the Public Interest Center & Commercialism in Education Research Unit.

Accessed 09/08/2010 at <http://epicpolicy.org/publication/Schoolhouse-commercialism-2009>

<sup>48</sup> U.S. Federal Trade Commission. Op.cit.

<sup>49</sup> Ibid.

<sup>50</sup> Puhl R & Brownell KD. Bias, discrimination, and obesity. *Obes Res*. 2001;9:788-805.

<sup>51</sup> Puhl RM & Heuer CA. Obesity stigma: Important considerations for public health. *AJPH*. 2010; 100(6): 1019-1028.

<sup>52</sup> Rudd Report. (2009) Weight bias: A social justice issue. A policy brief. Accessed 09/08/2010 at [www.yaleruddcenter.org](http://www.yaleruddcenter.org)

<sup>53</sup> Ibid.

<sup>54</sup> U.S. Department of Health and Human Services. *The Surgeon General's call to action to prevent and decrease overweight and obesity*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General, 2001. Available from: US GPO, Washington.

<sup>55</sup> Powell LM, et al. Food store availability and neighborhood characteristics in the United States. *Prev Med*. 2007;44(3):189-95.

<sup>56</sup> USDA. Report to Congress, June 2009. Access to affordable and nutritious food. Measuring and understanding food deserts and their consequences. Accessed 09/08/2010 at <http://www.ers.usda.gov/Publications/AP/AP036/>

<sup>57</sup> Final report of the Sustinet childhood and adult obesity task force, July 2010. Accessed 09/08/2010 at [http://www.ct.gov/sustinet/lib/sustinet/Final\\_Obesity\\_Task\\_Force\\_7\\_1\\_2010\\_mbs.pdf](http://www.ct.gov/sustinet/lib/sustinet/Final_Obesity_Task_Force_7_1_2010_mbs.pdf)

<sup>58</sup> Trust for America's Health. Op.cit.