

# “NO BODY LEFT BEHIND”: RE-ORIENTING SCHOOL-BASED CHILDHOOD OBESITY INTERVENTIONS

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## I. INTRODUCTION<sup>1</sup>

Over the last decade or so, federal, state, and local policymakers have developed and implemented a wide range of school-based interventions to address childhood obesity, focusing on the food environment, physical activity, health education, and in-school screening and surveillance.<sup>2</sup> Thus far, however, evaluations of these interventions reveal mixed or modest results in terms of achieving significant reduction in body mass index.<sup>3</sup> This article suggests that although there are now laws on the books in virtually every jurisdiction aimed at addressing childhood obesity in K-12 schools, these efforts are inadequate and may even be misguided in important ways.

Unfortunately, efforts aimed at health promotion—through healthier eating and increased physical activity—remain woefully underfunded even as they proliferate at every level of government. It is one thing to enact a requirement that all schools offer a minimum number of minutes of physical education each week or that school lunches include more fruits and vegetables. But it is quite another to make the budgetary commitment to ensure that physical education classes are accessible, stimulating, and enjoyable for children of all sizes and ability levels or that school meals are both healthy *and* appealing.

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1. “No Body Left Behind” is a slogan adopted by the Association for Size Diversity and Health, used as part of the title of its 2011 national conference. See *Press Release: ASDAH Launches New Blog Exploring a Health at Every Size Approach to Wellness*, ASS’N FOR SIZE DIVERSITY & HEALTH (June 8, 2011), <https://www.sizediversityandhealth.org/content.asp?id=11&mediaID=40&action=archive>.

2. See *infra* Part III.

3. See, e.g., Helen Thomas, *Obesity Prevention Programs for Children and Youth: Why Are Their Results So Modest?*, 21 HEALTH EDUC. RES. 783, 786 (2006); Lauren Kaplin, *A National Strategy to Combat the Childhood Obesity Epidemic*, 15 U.C. DAVIS J. JUV. L. & POL’Y 347, 357-64 (2011) (describing four school programs: (1) Planet Health, employing mostly a curriculum based approach and achieving results in female but not male students; (2) School Nutrition Policy Institute, a five-part policy that included dietary, physical, and educational components and achieving significant decreases in the percentage of overweight children but not obese children; (3) The Annapolis Valley Health Promoting School Project, which established school-based programs and compared the results, finding that programming that relies only on different dietary options is less likely to be successful than programs that include exercise and education components; and (4) Pathways, a multi-component program designed to target a specific sub-population - American Indian students - and achieved no statistically significant results, perhaps due to “some particularity of the sub-population assessed in the program”).

Moreover, the problem with current approaches to school-based anti-obesity interventions goes deeper than a lack of funding. Interventions aimed at reducing obesity—as opposed to improving health—may be contributing to weight-based stigma. And anti-fat stigma itself may contribute to poor health outcomes. Poor diet and lack of physical activity among school-age children are certainly pressing public health problems and there is much that can be done in the school setting to address them. But framing these problems in terms of children’s weight—rather than their health—may be a set-up for failure, given what we know about the difficulty of achieving significant and lasting weight loss. Preventing children from becoming obese in the first place may be a more reasonable goal, but it is crucial that prevention efforts be evaluated in light of their impact on children who are already overweight or obese as well as those who are not.

Size acceptance advocates working within the health sciences have expressed concerns about the impact of anti-obesity campaigns on the health and wellness of obese people.<sup>4</sup> To address these concerns, they have proposed a “paradigm shift” in the way we think about the relationship between health and obesity.<sup>5</sup> The “Health at Every Size” (HAES) movement “shifts the focus from weight management to health promotion. The primary intent of HAES is to support improved health behaviors for people of all sizes without using weight as a mediator; weight loss may or may not be a side effect.”<sup>6</sup> The HAES message combats anti-fat stigma and focuses on improving the health behaviors of all people, rather than targeting those who are fat.<sup>7</sup> It particularly emphasizes the importance of encouraging a healthy relationship with food and enjoyable physical activity, rather than focusing on unsustainably restrictive weight-loss regimens.<sup>8</sup>

Drawing on the HAES movement,<sup>9</sup> this article argues for a new strategy for school-based programs aimed at reducing the lifetime risk of heart disease and diabetes among school children. Part II describes what is currently known about

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4. Deb Burgard, *What Is “Health at Every Size”?*, FAT STUDIES READER 42, 42 (2009); see, e.g., Jon Robison, *Health at Every Size: Toward a New Paradigm of Weight and Health*, 7 MEDSCAPE GEN. MED. 13, 13 (2005); Linda Bacon et al., *Evaluating a “Non-diet” Wellness Intervention for Improvement of Metabolic Fitness, Psychological Well-Being and Eating and Activity Behaviors*, 26 INT’L J. OBESITY 854, 864 (2002); Lily O’Hara & Jane Gregg, *The War on Obesity: A Social Determinant of Health*, 17 HEALTH PROMOTION J. AUSTRAL. 260, 260 (2006).

5. See Burgard, *supra* note 4, at 42 (describing Health at Every Size as “a grassroots movement opposing [the use of health issues to oppress people of size] among healthcare workers and health researchers [who], in collaboration with activists and consumers, have been evolving an alternative public health model for people of all sizes”).

6. Linda Bacon & Lucy Aphramor, *Weight Science: Evaluating the Evidence for a Paradigm Shift*, 10:9 NUTRITION J. 1, 1 (2011), available at <http://www.nutritionj.com/content/10/1/9>.

7. In the field of fat studies, “there is respect for the political project of reclaiming the word *fat*, both as the preferred neutral adjective (i.e., short/tall, young/old, fat/thin) and also as a preferred term of political identity.” Marilyn Wann, *Foreword: Fat Studies: An Invitation to Revolution*, FAT STUDIES READER xi, xii (2009). Because this article attempts to incorporate the Health at Every Size movement’s perspective into the public health agenda, I will use “obese” or “overweight” when referring to specific categories on the body mass index and “fat” or “fatness” when describing social phenomena such as stigmatization.

8. See, e.g., Burgard, *supra* note 4, at 42–43.

9. *Id.* at 42.

the causes and consequences of childhood obesity. Part III surveys the current state of law and policy interventions at the federal, state, and local levels to address childhood obesity in K–12 schools. In part IV, I propose a reorientation of those interventions to better align them with the HAES movement, including specific recommendations that focus on promoting the availability of appealing, safe, and healthy physical activity opportunities and eating options for all children; the cessation of school-based BMI and fitness screening programs; and development of privacy and anti-discrimination frameworks to protect the rights—and promote the health—of all children.

## II. CHILDHOOD OBESITY: CAUSES AND CONSEQUENCES

Although it is increasingly being used as a more general label, the term obesity technically refers to a particular body mass index category. Body mass index is a measure used by doctors and researchers to estimate body fat and gauge risk of developing diseases associated with high levels of body fat. An individual's BMI is derived by dividing her weight in kilograms by her height in meters squared. BMI offers an inexpensive estimate of body fat because virtually anyone with a tape measure, scale, and elementary math education can calculate it. For adults, a BMI between twenty-five and thirty is categorized as overweight, and a BMI above thirty is categorized as obese.<sup>10</sup> Obesity is defined differently for children and teens between the ages of two and twenty. Children and teens whose BMI puts them in the 95th percentile for age and sex are classified as obese.<sup>11</sup> Those between the 85th and 95th percentile are classified as overweight.<sup>12</sup> The BMI cut-offs for these percentiles are derived from standardized charts developed by the U.S. Centers for Disease Control and Prevention (CDC).<sup>13</sup>

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10. *Defining Overweight and Obesity*, CENTERS FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/obesity/adult/defining.html> (last updated Apr. 27, 2012). Obesity skeptics have correctly noted that BMI was not derived from health data and that there is no clear point on the BMI scale at which the health risks associated with obesity are triggered. See Rebecca L. Rausch, *Health Cover(age)ing*, 90 NEB. L. REV. 920, 937–38 (2012). They have also pointed to the fact that “[i]n 1998, the BMI cutoff points that define “overweight” and “obese” categories were lowered; with that change, millions of people became fat overnight.” Wann, *supra* note 7, at xiv. But those facts alone are not sufficient to dispute the connection between obesity and health. Many categories that are useful for understanding the determinants of health are socially constructed. Indeed, the concept of health itself is socially constructed. The key question is how much variation in health outcomes is attributable to obesity itself, however that category has been constructed. Also, it is worth noting that although the cutoffs were changed in 1998, studies examining trends in obesity have used a consistent definition so that the results are not affected by the 1998 shift. See, e.g., Katherine M Flegal et al., *Overweight and Obesity in the United States: Prevalence and Trends, 1960–1994*, 22 INT'L J. OBESITY 39, 40 (1998) (applying post-1998 cutoffs to examine trends in overweight and obesity prevalence from 1960 to 1994).

11. *Basics About Childhood Obesity*, CENTERS FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/obesity/childhood/basics.html> (last updated Apr. 27, 2012). The CDC is one of the major operating components of the U.S Department of Health and Human Services.

12. *Id.*

13. Robert J. Kuczmarski et al., *2000 CDC Growth Charts for the United States: Methods and Developments*, 11 VITAL & HEALTH STAT. 1, 10 (2001), available at <http://www.cdc.gov/growthcharts/2000growthchart-us.pdf>.

The numbers highlighted in obesity factsheets produced by the CDC<sup>14</sup> and the Institute of Medicine (IOM)<sup>15</sup> are distressing. One-third of children and two-thirds of adults in the United States are overweight or obese.<sup>16</sup> The prevalence of childhood obesity rose sharply in the 1980s and 90s.<sup>17</sup> It has since leveled off, with no significant increase in rates of obesity between 1999 and 2008,<sup>18</sup> but advocates are concerned that progress has been too slow.<sup>19</sup> In 2010, researchers reported that obesity may be surpassing smoking as the leading cause of preventable death in the United States.<sup>20</sup> Average annual health-care expenditures are estimated to be \$1,429 higher for an obese person than for a person of normal weight.<sup>21</sup> The estimated annual cost of obesity-related illness has reached \$190.2 billion and about 21% of annual medical spending is on obesity-related illness.<sup>22</sup> But these numbers may be misleading.

Media reports have tended to assume that the science regarding obesity is clear and uncontested.<sup>23</sup> But the evidence that obesity is one of the greatest contributors to poor health and mortality is in fact hotly contested by skeptics who have called into question the extent to which obesity is an appropriate proxy for poor health outcomes or unhealthy behaviors. Deb Burgard, a founder of the HAES movement, has pointed to several “a priori assumptions,” typically made in obesity research, which require closer examination.<sup>24</sup> These include “the assumption that fat itself causes the disorders with which it is often associated” and “the assumption that one can tell by looking at a person’s weight what they must be eating or how much exercise they get.”<sup>25</sup> Indeed, unexamined assumptions about the health impacts and causes of obesity plague the public policy response to it. Clarifying the scientific evidence regarding childhood

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14. See, e.g., *Adult Obesity Facts*, CENTERS FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/obesity/data/adult.html> (last updated Aug. 13, 2012).

15. See, e.g., *Obesity: Complex but Conquerable*, INST. OF MED., [http://www.iom.edu/About-IOM/Leadership-Staff/Boards/Food-and-Nutrition-Board/~media/Files/Report%20Files/2012/APOP/APOP\\_infographic.png](http://www.iom.edu/About-IOM/Leadership-Staff/Boards/Food-and-Nutrition-Board/~media/Files/Report%20Files/2012/APOP/APOP_infographic.png) (last visited Jan. 24, 2013). The IOM is an independent, non-profit organization that conducts health studies in response to requests from Congress and federal agencies. See *About the IOM*, INST. OF MED., <http://www.iom.edu/About-IOM.aspx> (last updated Jan. 18, 2012).

16. *Obesity: Complex but Conquerable*, *supra* note 15.

17. See Cynthia L. Ogden et al., *Prevalence of Obesity and Trends in Body Mass Index Among US Children and Adolescents, 1999-2010*, 307 J. AM MED. ASS’N E1, E1 (2012).

18. *Id.* at E7–E8.

19. See, e.g., *Accelerating Progress in Obesity Prevention*, INST. OF MED., <http://www.iom.edu/Activities/Nutrition/ObesityPrevProgress.aspx> (last visited Jan. 24, 2012).

20. See Haomiao Jia & Erica I. Lubetkin, *Trends in Quality-Adjusted Life-Years Lost Contributed by Smoking and Obesity*, 38 AM. J. PREVENTIVE MED. 138, 142 (2010) (noting that because of the increase in the proportion of obese people, obesity has become an equal, if not greater, contributor to the burden of disease than smoking).

21. *Adult Obesity Facts*, *supra* note 14.

22. *Obesity: Complex but Conquerable*, *supra* note 15.

23. See, e.g., Jared Bernstein, *The Political Economy of the Obesity Epidemic*, HUFFINGTON POST (May 29, 2012), [http://www.huffingtonpost.com/jared-bernstein/obesity-policy\\_b\\_1552387.html](http://www.huffingtonpost.com/jared-bernstein/obesity-policy_b_1552387.html) (“While there’s predictable controversy over what to do about [obesity], there’s little disagreement over a) the facts, and b) their negative implications for both health and the costs to society.”).

24. Burgard, *supra* note 4, at 46.

25. *Id.*

obesity, health (both physical and psycho-social), and the role of personal choices in determining each is thus an important starting point for this article.

### A. The Causes of Childhood Obesity

Survey data indicate that most Americans characterize childhood obesity as the result of poor parenting and poor food choices, rather than as a “disease.”<sup>26</sup> But scientific research strongly suggests that childhood obesity is largely attributable to genetic and environmental factors that are beyond the reach of individual choice or control.<sup>27</sup> Childhood BMI is about 77% heritable, meaning that about 77% of variation in childhood BMI from person to person is explained by genetic factors.<sup>28</sup> But heritability does not equal determinism; highly heritable traits can also be highly responsive to environmental changes.<sup>29</sup> The obesity epidemic is largely attributable to “genetic factors [that] strongly modulate the impact of the modern environment on each individual.”<sup>30</sup>

Scientists refer to our current environment as “obesigenic,” meaning, in simple terms, that “if you go with the flow, you’ll get fat.”<sup>31</sup> Children’s exposure to obesigenic environmental factors is largely outside of their control. Parents play an important role, but parental choice about the foods and beverages available to their children in the home and consumed by them outside of the home can be constrained by socioeconomic factors and convenience. And parents have very little control over their children’s exposure to unhealthy school environments.

A fact sheet from the CDC notes that “[t]here are a variety of environmental factors that determine whether or not the healthy choice is the easy choice for children and their parents.”<sup>32</sup> It points to several modifiable environmental factors that contribute to childhood obesity, including: the availability of sugary

26. *Survey on the Causes of Obesity*, POLL POSITION, <http://media.pollposition.com.s3.amazonaws.com/wp-content/uploads/Poll-Position-Crosstabs-Childhood-obesity1.pdf> (last visited May 5, 2013); see *Obesity’s Stigma in America*, REUTERS, [http://reuters.tumblr.com/post/22842024642/a-new-reuters-ipsos-online-poll-of-1-143-adults?utm\\_source=SNEB+Members+2012&utm\\_campaign=53ee438669-Weekly\\_Policy\\_Update05\\_28\\_12&utm\\_medium=email](http://reuters.tumblr.com/post/22842024642/a-new-reuters-ipsos-online-poll-of-1-143-adults?utm_source=SNEB+Members+2012&utm_campaign=53ee438669-Weekly_Policy_Update05_28_12&utm_medium=email) (last visited Jan. 24, 2012) (finding that most Americans cite “personal choices about eating and exercising” as the main cause of the rising prevalence of obesity).

27. See, e.g., Jane Wardle et al., *Evidence for a Strong Genetic Influence on Childhood Adiposity Despite the Force of the Obesogenic Environment*, 87 AM. J. CLINICAL NUTRITION 398 (2008); Cristen J Willer et al., *Six New Loci Associated with Body Mass Index Highlight a Neuronal Influence on Body Weight Regulation*, 41 NATURE GENETICS 25 (2009); Ruth J.F. Loos & Claude Bouchard, *Obesity – Is It a Genetic Disorder?*, 254 J. OF INTERNAL MED. 401 (2003).

28. See Wardle, *supra* note 27, at 401.

29. Heritability is a frequently misunderstood concept. For an excellent discussion of obesity heritability, see Mike the Mad Biologist, *Obesity Makes People Stupid . . . About Heritability*, SCI. BLOGS (Aug. 4, 2009), <http://scienceblogs.com/mikethemadbiologist/2009/08/04/obesity-makes-people-stupidabo>.

30. Willer, *supra* note 27, at 26.

31. Kerry Trueman, *The Terrifying Truth About America’s Obesity Epidemic*, ALTERNET (May, 11 2012), [http://www.alternet.org/health/155398/the\\_terrifying\\_truth\\_about\\_america’s\\_obesity\\_epidemic?page=entire](http://www.alternet.org/health/155398/the_terrifying_truth_about_america’s_obesity_epidemic?page=entire).

32. *A Growing Problem*, CENTERS FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/obesity/childhood/problem.html> (last updated Apr. 13, 2013).

drinks and high-energy-dense foods in schools and communities; advertising for unhealthy foods and beverages during child-oriented television programming and in many schools; lack of “daily, quality physical activity” in most schools; the fact that many communities lack a “safe and appealing place [to] play or be active;” inadequate access to “affordable healthy foods” in many communities; increasing portion sizes in restaurants, vending machines, and grocery stores; and high exposure to television and other media, which competes with physical activity for kids’ time and increases their exposure to advertising for unhealthy foods and beverages.<sup>33</sup>

In addition to socioeconomic factors that determine how much any given child is exposed to our obesigenic environment, there are also genetic factors that determine how that child’s body will react to exposure. Some of us have genes<sup>34</sup> that allow us to tolerate our obesigenic environment better than others.<sup>35</sup> Genetic factors play a role in metabolism, appetite, binge eating, sensations of taste and satiety, and motivation to exercise.<sup>36</sup> It is helpful to think of the relationship between obesity and genetic factors in terms of four categories of people.<sup>37</sup> First, those with genetically determined obesity. A small percentage (up to around five percent) of people who are obese possess a single genetic mutation that leads to obesity regardless of the environment in which they live (short of extreme restraints on their access to nutrition). Second, those with a strong genetic predisposition toward obesity. These individuals are likely to be overweight if they live in a non-obesigenic environment (like the environment of thirty or forty years ago). But if they are exposed to our current environment, they are likely to be obese. Third, those with a slight genetic predisposition, which leads to normal weight in a non-obesigenic environment and overweight in an obesigenic environment. And finally, those who are genetically resistant to obesity. These are people who enjoy protective genetic factors and thus are able to maintain a normal weight in spite of their exposure to an obesigenic environment.

When we see an obese child, we tend to make certain assumptions about the eating and exercise habits of that child. But size may not actually be an accurate proxy for an individual child’s health behaviors. A recent study examining the eating habits of thousands of children revealed a surprising phenomenon.<sup>38</sup> The only group in which overweight and obese children reported consuming significantly more calories per day than their healthy-weight peers was boys

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33. *Id.*

34. Scientists have identified several genes associated with BMI, many of which are believed to work through the central nervous system. *See* Willer, *supra* note 27, at 25.

35. Loos & Bouchard, *supra* note 27, at 401.

36. Astrid Newell et al., *Addressing the Obesity Epidemic: A Genomics Perspective*, 4 PREVENTING CHRONIC DISEASE 1, 2 (2007), available at [http://public.health.oregon.gov/DiseasesConditions/GeneticConditions/Documents/PR\\_AddressingObesity.pdf](http://public.health.oregon.gov/DiseasesConditions/GeneticConditions/Documents/PR_AddressingObesity.pdf); I. Sadaf Farooqi & Stephen O’Rahilly, *Genetic Factors in Human Obesity*, 8 OBESITY REVIEWS supp. s1 37, 37–39 (2007); Claude Bouchard, *The Biological Predisposition to Obesity: Beyond the Thrifty Genotype Scenario*, 31 INT. J. OBESITY 1337, 1338 (2007); *see* Claude Bouchard, *Defining the Genetic Architecture of the Predisposition to Obesity: A Challenging but Not Insurmountable Task*, 91 AM. J. CLINICAL NUTRITION 5, 5–6 (2010).

37. *See* Loos & Bouchard, *supra* note 27, at 415–16.

38. Asheley Cockrell Skinner et al., *Self-Reported Energy Intake by Age in Overweight and Healthy-Weight Children in NHANES, 2001–2008*, 130 PEDIATRICS e936, e936–37 (2012).

aged six to eight.<sup>39</sup> For younger children, there was no statistically significant association between weight and daily calorie consumption.<sup>40</sup> And beginning around age six for girls and around age ten for boys, obese and overweight children reported consuming *fewer* calories per day than their healthy weight peers.<sup>41</sup>

Researchers suggest that these results may indicate that past a certain age (the “crossover” age at which overweight and obesity are associated with lower, rather than higher daily calorie intake), physical activity is playing a more important role than diet in determining a child’s weight.<sup>42</sup> Other studies indicate that overweight and obesity in this age range is associated with reduced physical activity,<sup>43</sup> but it may be difficult to distinguish cause from effect. It may be that kids who are already obese or overweight when they reach the crossover age are more reluctant to engage in physical activity because of their weight, rather than that their reluctance to engage in physical activity is the cause of their obesity.

In short, where a child lives, his or her family income, and other environmental factors may mean that two children with identical genetic profiles may end up at very different weights. And genetic factors mean that two children who live in the same community and whose families have the same income may end up at very different weights. Because genetic factors influence metabolism, two children could even consume the same diet and engage in the same level of physical activity, and still end up at different weights.

## B. The Consequences of Childhood Obesity for Physical Health

Among adults, high levels of body fat—or “adiposity” as it is called by medical researchers—are associated with the risk of several non-communicable diseases: type-2 diabetes, ischemic heart disease, stroke, gallbladder disease, sleep apnea, depression, osteoarthritis, and certain cancers (breast, colorectal, endometrial, and kidney).<sup>44</sup> Less is known about the consequences of childhood obesity for physical health. Obesity during adolescence has been associated with an increased risk of blood glucose levels indicative of a high risk of developing diabetes in the future.<sup>45</sup> But recent findings suggest that the prevalence of pre-diabetic blood glucose levels among adolescents has continued to rise even as the prevalence of childhood obesity has leveled off in the last decade or so,<sup>46</sup>

39. *Id.* at e938.

40. *Id.* at e938–40.

41. *Id.*

42. *Id.* at e941.

43. *Id.* at e940 (citing Kevin Patrick et al., *Diet, Physical Activity, and Sedentary Behaviors As Risk Factors for Overweight in Adolescence*, 158 ARCHIVES PEDIATRIC & ADOLESCENT MED. 385–90 (2004)); Janet E. Fulton et al., *Physical Activity, Energy Intake, Sedentary Behavior, and Adiposity in Youth*, 37 AM. J. PREVENTIVE MED. S40, S43–44 (2009).

44. See Daphne P. Guh et al., *The Incidence of Co-morbidities Related to Obesity and Overweight: A Systemic Review and Meta-analysis*, 9 BMC PUB. HEALTH 88, 88–89 (2009).

45. Chaoyang Li et al., *Prevalence of Pre-diabetes and Its Association with Clustering of Cardiometabolic Risk Factors and Hyperinsulinemia Among U.S. Adolescents: National Health and Nutrition Examination Survey 2005–2006*, 32 DIABETES CARE 342, 345–46 (2009).

46. Ashleigh L. May et al., *Prevalence of Cardiovascular Disease Risk Factors Among US Adolescents, 1999–2008*, 129 PEDIATRICS 1035, 1037–39 (2012).

suggesting that factors other than BMI may be playing a more important role. Obese children may also be more likely to have risk factors for future cardiovascular disease, including high blood pressure and high cholesterol.<sup>47</sup> The most recent results from the largest study in this area, however, indicate that there may not be a significant relationship between the prevalence of childhood obesity and the prevalence of high blood pressure during childhood.<sup>48</sup> Of course, childhood obesity is associated with obesity in adulthood,<sup>49</sup> which in turn is associated with various health problems. Therefore, regardless of whether obese kids are more likely to experience health problems during childhood and adolescence, they may still be more likely to experience health problems later in life if they continue to be obese as adults.

Diseases such as type-2 diabetes and ischemic heart disease are clearly associated with adult obesity, but that does not necessarily mean that they are caused by it. Research suggests that only a relatively small proportion of any given individual's risk of developing obesity-related illnesses is attributable to obesity itself, as opposed to poor diet, physical inactivity and other factors.<sup>50</sup> Epidemiological studies of the association between adult obesity and chronic disease rarely control for classic confounding variables like fitness, physical activity levels, calorie intake, weight cycling (the "yo-yo" pattern of weight loss and regain typically experienced by overweight and obese people as a result of dieting), or socioeconomic status.<sup>51</sup> "When studies do control for these factors, increased risk of disease disappears or is significantly reduced" except at statistically extreme weights.<sup>52</sup> "It is likely that these other factors increase disease risk at the same time they increase the risk of weight gain."<sup>53</sup> Essentially, our obesigenic environment is killing a lot of us, while also making some of us obese.

### C. The Consequences of Childhood Obesity for Psychosocial Health

Considerably less attention has been paid to the consequences of childhood obesity for psychosocial, as opposed to physical, health.<sup>54</sup> Low self-esteem,

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47. See David S. Freedman et al., *Cardiovascular Risk Factors and Excess Adiposity Among Overweight Children and Adolescents: The Bogalusa Heart Study*, 150 J. PEDIATRICS 12, 12 (2007).

48. See David S. Freedman et al., *Secular Trends in BMI and Blood Pressure Among Children and Adolescents: The Bogalusa Heart Study*, 130 PEDIATRICS 1, 1 (2012).

49. Frank M. Biro & Michelle Wien, *Childhood Obesity and Adult Morbidities*, 91 AM. J. CLINICAL NUTRITION 1499S, 1499S (2010); Robert C. Whitaker et al., *Predicting Obesity in Young Adulthood from Childhood and Parental Obesity*, 337 NEW ENG. J. MED. 869, 869 (1997); Mary K. Serdula et al., *Do Obese Children Become Obese Adults? A Review of the Literature*, 22 PREVENTIVE MED. 167, 167 (1993).

50. Burgard, *supra* note 4, at 43 (noting that "studies show that correlations between health problems and BMI" typically indicate "that about 9% of the outcome of whether someone has a health problem or not is somehow related to BMI (correlated to it but not necessarily caused by it)").

51. Bacon & Aphramor, *supra* note 6, at 3.

52. *Id.*

53. *Id.*

54. Shelly Russell-Mayhew et al., *Mental Health, Wellness, and Childhood Overweight/Obesity*, 2012 J. OBESITY 1, 2 (2012), available at <http://www.ncbi.nlm.nih.gov/pubmed/22778915> ("As it currently stands, obesity remains a medical condition, and, perhaps for this reason, research has focused neither on understanding the psychological impact of living with obesity nor the influence of mental health on the development of obesity.").



depression, and other mental health problems have been cited as among the consequences of obesity, and weight-based stigmatization during childhood can also have consequences for psychosocial health that persist into adulthood.<sup>55</sup> But research demonstrates that “not all overweight or obese children experience psychosocial issues.”<sup>56</sup> A growing body of research suggests that *perceived* weight, concern about weight or shape, and weight-based teasing are more strongly associated with psychosocial problems in children than *actual* weight.<sup>57</sup> Blaming psycho-social problems on a child’s weight – rather than pointing to the social bias and harassment inflicted upon that child by others – is problematic.

Among adults, weight-based stigmatization is associated with psychological stress, depression, low self-esteem, and body dissatisfaction, which in turn may contribute to poor physical health.<sup>58</sup> Some researchers have argued “that the high degree of psychological stress experienced by obese persons as a result of weight stigma contributes to the pathophysiology associated with obesity, and that many of the adverse biochemical changes that are associated with adiposity can also be caused by the psychological stress that accompanies the experience of frequent weight-based discrimination.”<sup>59</sup> In other words, it may be that at least some of the increased illness associated with being obese is actually caused by social responses to obesity, rather than by the presence of body fat itself.

Studies suggest that experiencing stigma, shame, and discrimination “may worsen obesity through dynamics such as fear of going out, fear of ridicule while exercising, cycles of emotional eating, and the development of eating disorders.”<sup>60</sup> Obese people who feel ashamed of their weight are less likely to be physically active or to eat a healthy diet<sup>61</sup> – and physical inactivity and poor diet are associated with poor health at any size. They are also “more reluctant to

55. See, e.g., Natasha Milkewicz Annis et al., *Body Image and Psychosocial Differences Among Stable Average Weight, Currently Overweight, and Formerly Overweight Women: The Role of Stigmatizing Experiences*, 1 *BODY IMAGE* 155, 164 (2004) (finding that, among overweight adult women, more frequent stigmatizing experiences during childhood, adolescence, and adulthood were associated with poorer body image and psychosocial functioning).

56. Russell-Mayhew et al., *supra* note 54.

57. *Id.*; see Karina L. Allen et al., *Why Do Some Overweight Children Experience Psychological Problems? The Role of Weight and Shape Concern*, 1 *INT’L J. PEDIATRIC OBESITY* 239, 244 (2006); Wilma Jansen et al., *Feeling Fat Rather Than Being Fat May Be Associated with Psychological Well-Being in Young Dutch Adolescents*, 42 *J. ADOLESCENT HEALTH* 128, 135 (2008); Patricia van den Berg & Dianne Neumark-Sztainer, *Fat n’ Happy 5 Years Later: Is It Bad for Overweight Girls to Like their Bodies?*, 41 *J. ADOLESCENT HEALTH* 415, 416 (2007); Marla E. Eisenberg et al., *Associations of Weight-Based Teasing and Emotional Well-Being Among Adolescents*, 157 *ARCHIVES PEDIATRICS & ADOLESCENT MED.* 733, 737 (2003).

58. Rebecca M. Puhl & Chelsea A. Heuer, *Obesity Stigma: Important Considerations for Public Health*, 100 *AM. J. PUB. HEALTH* 1019, 1023 (2010).

59. *Id.*

60. Lynne MacLean et al., *Obesity, Stigma and Public Health Planning*, 24 *HEALTH PROMOTION INT’L* 88, 89 (2009).

61. See, e.g., Puhl & Heuer, *supra* note 58, at 1022 (remarking that “weight stigma increases the likelihood of engaging in unhealthy eating behaviors and lower levels of physical activity”); Sophie Lewis et al., *How Do Obese Individuals Perceive and Respond to the Different Types of Obesity Stigma That They Encounter in Their Daily Lives? A Qualitative Study*, 73 *SOC. SCI. & MED.* 1349, 1350 (2011) (noting that obese individuals “are less willing to engage in health promoting activities”).

engage with public health messages about obesity.”<sup>62</sup> If obese people who feel ashamed about their weight are less receptive to public health messages about health-promoting behaviors, that might contribute to the ineffectiveness of campaigns that emphasize individual behavioral change.

### III. THE CURRENT STATE OF SCHOOL-BASED INTERVENTIONS TO ADDRESS CHILDHOOD OBESITY

Public health advocates have recommended regulations aimed at altering school environments as a key component of obesity control law and policy.<sup>63</sup> They have called for improved nutritional standards for school meals and restrictions on the availability of “competitive foods” (such as sodas, candy bars, and chips) in school settings.<sup>64</sup> Proposals have also focused on increased opportunities for physical activity and obesity-related health education.<sup>65</sup> Some commentators have also noted the potential value of in-school obesity and fitness screening programs, though these have been controversial among public health advocates.<sup>66</sup>

These legal interventions are being widely adopted by federal, state, and local policymakers, but often without adequate funding or sufficiently stringent regulations.<sup>67</sup> The agriculture, food, and beverage industries have a great deal at stake in the school food environment and their efforts to water down new restrictions on what food can be sold to kids in school have been largely successful.<sup>68</sup> In the context of mounting budgetary constraints and increased emphasis on academic testing, health and physical education requirements have been difficult to implement in a way that is consistent with best practices.<sup>69</sup> Meanwhile, growing emphasis on “personal responsibility” for obesity has contributed to the popularity of school-based BMI screening programs aimed at giving kids and their parents a “wake-up call” about weight.<sup>70</sup> In many jurisdictions, the result is largely window dressing rather than meaningful reform.

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62. Lewis, *supra* note 61, at 1350.

63. See, e.g., Mary Story et al., *Schools and Obesity Prevention: Creating School Environments and Policies to Promote Healthy Eating and Physical Activity*, 87 MILBANK Q. 71 (2009); Fadia T. Shaya et. al, *School-Based Obesity Interventions: A Literature Review*, 78 J. SCHOOL HEALTH 189 (2008); Karen E. Peterson & Mary Kay Fox, *Addressing the Epidemic of Childhood Obesity Through School-Based Interventions: What Has Been Done and Where Do We Go from Here?*, 35 J. L. MED. & ETHICS 113 (2007).

64. See, e.g., Story et al., *supra* note 63, at 72.

65. See, e.g., *id.*; Shaya et al., *supra* note 63, at 193.

66. See, e.g., Peterson & Fox, *supra* note 63, at 120 (arguing that height and weight measurements within the school setting “can form the basis for nutrition and physical activity guidance provided to students and their families and can also be used to identify students that may require follow-up by a pediatrician”). *But see, e.g.*, Kristine A. Madsen, *School-Based BMI Screening and Parent Notification: A Statewide Natural Experiment*, 165 ARCHIVES PEDIATRIC AND ADOLESCENT MED. 987 (2011) (finding that parent notification following BMI screening was not associated with a change in weight status and concluding that “until effective methods of notification are identified, schools should consider directing resources to policies and programs proven to improve student health”).

67. See *infra* Parts II.A.–C.

68. See *infra* Part III.A.

69. See *infra* Part III.B.

70. See *infra* Part III.C.

## A. The Food Environment

There is a disconnect between messages urging parents to ensure that their children eat a healthy, balanced diet and the unhealthy food environment that many of those same children are exposed to the moment they enter school. The school food environment is composed of breakfast and lunch meal programs that are highly regulated as well as an array of “competitive foods”—those offered for sale (often at a profit to the school) during and between meals in *à la carte* lines in the cafeteria, vending machines, and school stores—that are subject to much less regulation.<sup>71</sup> Although progress has been made in bringing school meal guidelines into line with nutritional recommendations,<sup>72</sup> there is more to be done. Doing it well will require commitment of additional resources to ensure that healthy, appealing foods are available in schools and willingness to resist industry political influence to ensure that unhealthy foods are restricted.

The federal government has been heavily involved in the financing and regulation of school meals since 1946, when President Truman signed the National School Lunch Act (NSLA) into law. Designed to promote the “the health and well-being of the Nation’s children and to encourage the domestic consumption of nutritious agricultural commodities,”<sup>73</sup> the NSLA created the National School Lunch Program (NSLP).<sup>74</sup> To facilitate the program, the Secretary of Agriculture was given authority to (1) supply schools with surplus food (purchased by the government as part of its effort to keep agriculture markets strong), (2) distribute funds to schools based on the number of program meals served, and (3) establish nutritional guidelines for meals served under the program.<sup>75</sup> In addition to administering the NSLP, the U.S. Department of Agriculture (USDA) also administers the School Breakfast Program,<sup>76</sup> a program that provides after-school meals and snacks,<sup>77</sup> and the Summer Food Service Program.<sup>78</sup>

Critics have argued that historically, the USDA has exercised its authority to regulate the nutritional value of school meals primarily to protect agribusiness interests, rather than the health of our nation’s schoolchildren.<sup>79</sup> Through agricultural subsidies, “[t]he USDA supports industries that produce foods

71. FOOD & NUTRITION BD., INST. OF MED., *SCHOOL MEALS: BUILDING BLOCKS FOR HEALTHY CHILDREN* 20 (2009), available at <http://www.iom.edu/Reports/2009/School-Meals-Building-Blocks-for-Healthy-Children.aspx>; Story et al., *supra* note 63.

72. See *infra* discussion of state and federal reforms.

73. 42 U.S.C. § 1751 (2012).

74. Gordon W. Gunderson, *The National School Lunch Program Background and Development*, U.S. DEP’T OF AGRIC., [http://www.fns.usda.gov/cnd/Lunch/AboutLunch/ProgramHistory\\_4.htm](http://www.fns.usda.gov/cnd/Lunch/AboutLunch/ProgramHistory_4.htm) (last visited Jan. 13, 2013).

75. *Id.*; see also 42 U.S.C. § 1758(a) (Supp. 1976) (describing the standards as they applied in 1976).

76. *School Breakfast Program*, U.S. DEP’T OF AGRIC., <http://www.fns.usda.gov/cnd/breakfast> (last visited Jan. 13, 2013).

77. *Child & Adult Care Food Program*, U.S. DEP’T OF AGRIC., <http://www.fns.usda.gov/cnd/care/SupperFaqs.htm> (last visited Jan. 13, 2013).

78. *Summer Food Service Program*, U.S. DEP’T OF AGRIC., <http://www.summerfood.usda.gov> (last visited Jan. 13, 2013).

79. See, e.g., J. Amy Dillard, *Sloppy Joe, Slop, Sloppy Joe: How Commodities Dumping Ruined the National School Lunch Program*, 87 OR. L. REV. 221, 223 (2008).

contributing to obesity, heart disease, and cancer.”<sup>80</sup> Through surplus commodity distribution programs, the USDA “buys hundreds of millions of pounds of excess beef, pork, milk, and other high-fat meat and dairy products to bolster dropping prices,” which it then dumps into school meal programs.<sup>81</sup> The USDA also brokers the processing of those commodities into high-calorie, high-fat foods with low nutritional value.<sup>82</sup> The USDA has responded by arguing that USDA foods make up only fifteen to twenty percent of food served in federal school meal programs and that the nutritional quality of these foods is improving.<sup>83</sup>

Until recently, federal nutrition guidelines for school meals fell short of compliance with the Dietary Guidelines for Americans,<sup>84</sup> and regulation of competitive foods was left almost entirely to the states.<sup>85</sup> Over the last decade or so, many states have undertaken efforts to improve the quality of foods available in schools.<sup>86</sup> As of 2011, twenty states and the District of Columbia had established requirements for school meals that exceeded then-applicable federal USDA standards.<sup>87</sup> Many states have also taken action to restrict the availability of unhealthy competitive foods on school campuses.<sup>88</sup>

In many states, however, efforts to regulate the school food environment have encountered political opposition, resulting in relatively weak regulations and recommendations.<sup>89</sup> For example, a “comprehensive” childhood obesity statute passed in Arkansas in 2003 imposed only two requirements regarding

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80. *Id.*

81. School Lunch Report Card, PHYSICIANS COMM. FOR RESPONSIBLE MED. 3 (2006), available at [http://www.pcrm.org/health/reports/pdfs/schoollunch\\_report2006.pdf](http://www.pcrm.org/health/reports/pdfs/schoollunch_report2006.pdf).

82. Dillard, *supra* note 79, at 224.

83. *The Food Assistance Landscape: FY 2007 Annual Report*, U.S. DEP’T OF AGRIC., <http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib6-5.aspx#.UYkZhrWG1Z4> (last updated May 26, 2012).

84. See Healthy, Hunger Free Kids Act of 2010, Pub. L. No. 111-296, §10(b)(C)(i) (directing the Secretary of Agriculture to “establish standards that are consistent with the most recent Dietary Guidelines for Americans”); Lindsay F. Wiley, *The U.S. Department of Agriculture As a Public Health Agency?: A Health in All Policies Case Study*, J. FOOD L. & POL’Y (forthcoming 2013) (describing the development and periodic revision of the Dietary Guidelines for Americans by the USDA and DHHS and the evolution of USDA regulation of school meal programs up to and including the Healthy Hunger-Free Kids Act of 2010).

85. See Robert Wood Johnson Foundation, *School Foods Sold Outside of Meals* (2007), [http://www.healthyeatingresearch.org/images/stories/her\\_research\\_briefs/hercompetfoodsresearchbrief.pdf](http://www.healthyeatingresearch.org/images/stories/her_research_briefs/hercompetfoodsresearchbrief.pdf) (noting that “[t]he legal authority of the [USDA] to regulate competitive foods is very limited and that “[r]egulations limit only the sale of foods of minimal nutritional value”).

86. See *Supplement to “F as in Fat: How Obesity Threatens America’s Future, 2011” Obesity-Related Legislation Action in States, Update*, TRUST FOR AM.’S HEALTH, <http://healthyamericans.org/assets/files/FasinFat2011LegislativeSupplement.pdf> (last visited Jan. 13, 2013).

87. *Id.*

88. See *State School Healthy Policy Database: School Food Environment*, NAT’L ASSOC. OF ST. BDS. OF EDUC., [http://www.nasbe.org/healthy\\_schools/hs/bytopics.php?topicid=3115](http://www.nasbe.org/healthy_schools/hs/bytopics.php?topicid=3115) (state-by-state database of policies regulating vending machines, school stores, fundraisers, and other sales of food in schools) (last updated Apr. 28, 2013).

89. See, e.g., Story et al., *supra* note 63, at 4 (noting that only one state, West Virginia, had adopted most of the recommendations represented in a 2007 Institute of Medicine report on competitive foods).

school nutrition.<sup>90</sup> One required school districts to bar access to in-school vending machines by elementary school students.<sup>91</sup> The other required districts to annually report “amounts and specific sources of funds received and expenditures made from competitive food and beverage contracts.”<sup>92</sup> The Act also established an advisory committee to promote nutrition and physical activity in schools.<sup>93</sup> The recommendations of that committee, which limited access to unhealthy foods and established more stringent nutrition standards for school meals, were implemented in 2005. But in 2007, the Arkansas legislature took action to weaken the role of the advisory committee,<sup>94</sup> overturning some of its recommendations and subjecting future recommendations to legislative review.<sup>95</sup>

In 2004, the U.S. Congress passed the Child Nutrition Reauthorization Act, which required all school districts participating in federal school meal programs to develop and implement school wellness programs.<sup>96</sup> Research on the impact of district wellness policies—which must address the food environment as well as physical activity—has revealed mixed results.<sup>97</sup> Although the majority of schools developed a wellness policy by the start of the 2006-07 school year (as required by the Act) many of the policies lacked specific guidelines or enforcement mechanisms.<sup>98</sup> Ultimately, school districts are constrained in how much they can do to improve the school food environment.<sup>99</sup> In a national survey of school foodservice directors, sixty-three percent perceived limited resources as a barrier to developing and implementing local school wellness policies.<sup>100</sup> Schools are heavily reliant on federal meal programs, with their attendant agribusiness-friendly regulations. Even in cases where local authorities undertake truly comprehensive reform, federal regulations can present an obstacle.<sup>101</sup>

In 2010, a two-year process of federal reform, informed by a commissioned report from the Institute of Medicine,<sup>102</sup> culminated in passage of The Healthy,

90. James M. Raczynski et al., *Arkansas Act 1220 of 2003 to Reduce Childhood Obesity: Its Implantation and Impact on Child and Adolescent Body Mass Index*, 30 J. PUB. HEALTH POL'Y S124 (2009) (describing Arkansas as “among the first states to pass comprehensive legislation to combat childhood obesity”).

91. ARK. CODE ANN. § 20-7-135(c)(1) (2012).

92. § 20-7-135(c)(2).

93. § 20-7-133(a).

94. § 20-7-133(b) (increasing the membership of the committee to include representatives of the Arkansas School Boards Association and Arkansas School Business Officials Association, among others).

95. § 6-16-132(b)(1)(A) (altering physical activity requirements and subjecting future committee recommendations to legislative review).

96. Child Nutrition and WIC Reauthorization Act of 2004, Pub. L. No 108-265.

97. Elaine Belansky et al., *Local School Wellness Policies: How Are Schools Implementing the Congressional Mandate?*, ROBERT WOOD JOHNSON FOUND., <http://www.rwjf.org/files/research/20090708localwellness.pdf> (last visited Jan. 13, 2013).

98. *Id.*

99. *Id.* at 3.

100. *Id.*

101. See Dillard, *supra* note 79, at 222 (describing the difficulties faced by the Berkeley Unified School District when it undertook an overhaul of its school lunch program).

102. FOOD & NUTRITION BD., *supra* note 71.

Hunger-Free Kids Act (HHFKA).<sup>103</sup> The Act directed the USDA to establish national school nutrition standards that are consistent with the most recent Dietary Guidelines for Americans.<sup>104</sup> For school meals, the regulations specify requirements for fruit, vegetable, and whole-grain offerings<sup>105</sup> and restrict saturated fat, sodium, and trans-saturated fat.<sup>106</sup> Agriculture and food and beverage organizations have protested the new federal regulations and lobbied for modification.<sup>107</sup> The status of potatoes and tomatoes and regulation of competitive foods have been particularly contentious issues.

One of the less funded but more vocal constituencies has been the National Potato Council, which has enlisted Senator Susan Collins to be a spokesperson against the new regulations.<sup>108</sup> The Senate blocked a proposal to limit servings of potatoes to one cup per week by amending the USDA's spending bill to prohibit the Department from setting "any maximum limits on the serving of vegetables in school meal programs."<sup>109</sup> Revised nutritional guidelines now indicate that additional servings of starchy vegetables may be provided.<sup>110</sup>

Similarly, another proposal would have ended tomato paste's long-standing privileged status, which allowed schools to count "pizza as a vegetable."<sup>111</sup> Tomato paste had been given more nutritional credit by volume than other vegetable pastes or purees, with an eighth of a cup of paste counting as a half-cup of vegetables. All other pastes and purees received credit only for the actual volume served.<sup>112</sup> The proposal sought to put tomato paste back on par with other vegetable pastes or purees, so that schools could no longer satisfy a vegetable serving requirement by offering pizza.<sup>113</sup> The proposal was eventually blocked by the House agriculture appropriations bill,<sup>114</sup> and the final regulations

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103. Healthy, Hunger Free Kids Act of 2010, Pub. L. No. 111-296.

104. 42 U.S.C. § 1779 (2012). The Guidelines are published jointly by the USDA and DHHS.

105. Meal Requirements for Lunches and Requirements for Afterschool Snacks, 7 C.F.R. § 210.10(c)(2) (2012).

106. 7 C.F.R. § 210.10(f).

107. Phil Galewitz, *Potato Lobby Turns Up the Heat in School Lunch Battle*, NPR (Oct. 7, 2011), <http://www.npr.org/blogs/thesalt/2011/10/05/141091119/potato-lobby-turns-up-the-heat-in-school-lunch-battle>; Ron Nixon, *School Lunch Proposals Set Off a Dispute*, N.Y. TIMES, at A19 (Nov. 2, 2011), available at [http://www.nytimes.com/2011/11/02/us/school-lunch-proposals-set-off-a-dispute.html?\\_r=2&pagewanted=1&adxnnlx=1320339603-Axm554brd17zLs6wMBxWTQ](http://www.nytimes.com/2011/11/02/us/school-lunch-proposals-set-off-a-dispute.html?_r=2&pagewanted=1&adxnnlx=1320339603-Axm554brd17zLs6wMBxWTQ).

108. *Id.*

109. Robert Pear, *Senate Saves the Potato on School Lunch Menus*, N.Y. TIMES, Oct. 19, 2011, at A20, available at <http://www.nytimes.com/2011/10/19/us/politics/potatoes-get-senate-protection-on-school-lunch-menus.html?ref=us>.

110. The regulation's footnote reads: "Larger amounts of these vegetables may be served." 7 C.F.R. § 210.10.

111. Alexandra Petri, *Move Over, Ketchup! Pizza Is a Vegetable*, WASH. POST (Nov. 16, 2012), [http://www.washingtonpost.com/blogs/compost/post/move-over-ketchup-pizza-is-a-vegetable/2011/11/16/gIQAk1okRN\\_blog.html](http://www.washingtonpost.com/blogs/compost/post/move-over-ketchup-pizza-is-a-vegetable/2011/11/16/gIQAk1okRN_blog.html); see Isabelle Dills, *School Lunches Will Be Healthier, Cost More*, NAPA VALLEY REG. (July 13, 2012, 8:00 PM), available at [http://napavalleyregister.com/news/local/school-lunches-will-be-healthier-cost-more/article\\_cb7b9226-cd4f-11e1-bfb1-001a4bcf887a.html](http://napavalleyregister.com/news/local/school-lunches-will-be-healthier-cost-more/article_cb7b9226-cd4f-11e1-bfb1-001a4bcf887a.html).

112. 7 C.F.R. § 210.10(c)(2)(iii).

113. Jill U. Adams, "Pizza Vegetable" Controversy Is Hot Potato, L.A. TIMES, Nov. 28, 2011, at A1.

114. Allison Aubrey, *Pizza As a Vegetable? It Depends on the Sauce*, NPR (Nov. 15, 2011), <http://www.npr.org/blogs/thesalt/2011/11/15/142360146/pizza-as-a-vegetable-it-depends-on>

include the exception that allows tomato paste and puree to be credited differently from other vegetables.<sup>115</sup>

The HHFKA requirement that the USDA set nutrition standards for competitive foods sold to students outside of the meal programs was a key victory for health and nutrition advocates.<sup>116</sup> Previous federal regulations restricted the sale of carbonated beverages, gum, and candy<sup>117</sup> in food service areas during lunch periods. But in the absence of more stringent state regulations, those limited restrictions left students with lots of opportunities to buy unhealthy snacks from vending machines and school stores and at other times of day. As of this writing, USDA is reviewing public comments on its proposed regulation of competitive foods sold outside of school meal programs,<sup>118</sup> with health and nutrition advocate allies gearing up for a major political battle.<sup>119</sup>

## B. Physical Activity and Health Education

In addition to addressing the food environment in schools, researchers and advocates have emphasized the importance of opportunities for physical activity, physical education, and health education in schools.<sup>120</sup> Recently adopted legal

the-sauce. The Republican-controlled Appropriations Committee commented that the provisions were designed to “prevent overly burdensome and costly regulations” and to “provide greater flexibility for local school districts to improve the quality of meals in the [NSLP].” *Summary: Fiscal Year 2012 Appropriations “Mini-Bus”: Agriculture, Commerce/Justice/Science, Transportation/Housing and Urban Development, and Continuing Resolution*, HOUSE COMM. ON APPROPRIATIONS (Nov. 14, 2011), available at [http://appropriations.house.gov/uploadedfiles/11.14.11\\_minibus\\_-\\_detailed\\_summary.pdf](http://appropriations.house.gov/uploadedfiles/11.14.11_minibus_-_detailed_summary.pdf); Sarah Kliff, *No, Congress Did Not Declare Pizza a Vegetable*, WASH. POST (Nov. 21, 2011), [http://www.washingtonpost.com/blogs/ezra-klein/post/did-congress-declare-pizza-as-a-vegetable-not-exactly/2011/11/20/gIQABXgmhN\\_blog.html](http://www.washingtonpost.com/blogs/ezra-klein/post/did-congress-declare-pizza-as-a-vegetable-not-exactly/2011/11/20/gIQABXgmhN_blog.html) (arguing that a smaller serving of tomato paste is comparable in nutritional value to a larger portion of fruits such as apples or oranges).

115. 7 C.F.R. § 210.10(c)(2)(iii).

116. 42 U.S.C. § 1779(b)(1)(B) (2012) (applying agency regulations to “all foods sold . . . outside the school meal programs, . . . on the school campus; and . . . at any time during the day.”).

117. The list covers carbonated beverages, gum, and candy, and it is treated as comprehensive, meaning that other competitive foods that might seem to fit within the definition of “foods of minimal nutritional value” are not in fact subject to the law’s regulations. 7 C.F.R. § 210.11(b) (“All categories of food of minimal nutritional value and petitioning requirements for changing the categories are listed in Appendix B of this part.”).

118. See Food & Nutrition Serv., U.S. Dep’t. Agric., National School Lunch Program and School Breakfast Program: Nutrition Standards for All Foods Sold in School As Required by the Healthy, Hunger-Free Kids Act of 2010, available at <http://www.fns.usda.gov/cga/020113-snacks.pdf> (pending publication in the Federal Register).

119. See Ron Nixon, *New Rules Planned on School Vending Machines*, N.Y. TIMES (Feb. 20, 2013), [http://www.nytimes.com/2012/02/21/us/politics/new-rules-planned-on-school-vending-machines.html?\\_r=0](http://www.nytimes.com/2012/02/21/us/politics/new-rules-planned-on-school-vending-machines.html?_r=0) (quoting Nancy Huehnergath, executive director of the New York State Healthy Eating and Physical Activity Alliance, as stating that she thinks “the food and beverage industry is going to fight tooth and nail over these rules”).

120. See, e.g., *Policy Statements Adopted by the Governing Council of the American Public Health Association, October 24, 2001*, 92 AM. PUB. HEALTH ASS’N 451, 465 (2001), available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1449795/pdf/0920451.pdf> (calling for “increases in the quantity and quality of physical education programs offered in grades K-12 with attention given to culturally appropriate, appealing, non-competitive activities that reflect the diversity of abilities and interests of America’s children” and “integration of food and nutrition into school curricula”);

interventions have focused on mandating minimum physical education requirements, mandating minimum time allocated for recess, promoting the use of physically active means of transportation to and from school, and mandating that healthy eating and exercise recommendations be incorporated into health education requirements.<sup>121</sup>

The Department of Health and Human Services (DHHS) recommends at least 60 minutes of moderate to vigorous activity per day for children and adolescents.<sup>122</sup> Cited benefits include reduced risk of heart disease, type-two diabetes and obesity.<sup>123</sup> Although younger children and pre-teens tend to be reasonably active, research suggests that a transition occurs around adolescence.<sup>124</sup> Only about 20 percent of teenagers report engaging in at least 60 minutes of moderate to vigorous activity per day.<sup>125</sup> And about 25% of teens report that they do not engage in 60 minutes of activity on any single day in a week.<sup>126</sup> The percentage of high school students attending daily physical education classes decreased from 42% in 1991 to 25% in 1995 and remained at that level until it rose to 31% in 2011.<sup>127</sup>

Every state has some form of physical education requirements for students, mostly consisting of mandates regarding the number of minutes per day or week that must be devoted to physical education or recess or a combination of the two.<sup>128</sup> Many states also have health education mandates, some of which have been amended to incorporate nutrition or healthy lifestyle components.<sup>129</sup> But “these requirements are often limited or not enforced and many programs are inadequate with respect to quality.”<sup>130</sup> Many schools are currently cutting back on physical education and health education spending in the context of ongoing budget concerns.<sup>131</sup> Interventions in these areas have also suffered as a result of

JEFFREY P. KOPLAN ET AL., PREVENTING CHILDHOOD OBESITY: HEALTH IN THE BALANCE 253 (2005), available at [https://download.nap.edu/catalog.php?record\\_id=11015](https://download.nap.edu/catalog.php?record_id=11015) (arguing that increased physical activity yields positive outcomes in “academic performance . . . physical fitness and physical activity . . . improved motor development, increased self-esteem, and improved behavior” but noting that there are “numerous confounders” and more study is needed).

121. See *infra* discussion of state reforms.

122. U.S. DEP’T OF HEALTH & HUMAN SERVS., 2008 PHYSICAL ACTIVITY GUIDELINES FOR AMERICANS (2008); *Strategies to Improve the Quality of Physical Education*, CENTERS FOR DISEASE CONTROL & PREVENTION, 1 (July 2010), [www.cdc.gov/HealthyYouth/physicalactivity/.../quality\\_pe.pdf](http://www.cdc.gov/HealthyYouth/physicalactivity/.../quality_pe.pdf).

123. *Id.*

124. *Physical Activity Levels Among Children Aged 9-13 Years - United States, 2002*, 52 MORBIDITY & MORTALITY WKLY. REP. 785, 785-88 (2003).

125. Danice K. Eaton et al., *Youth Risk Behavior Surveillance - U.S. 2009*, 59 MORBIDITY & MORTALITY WKLY. REP. 1, 25 (2010), available at <http://www.cdc.gov/mmwr/pdf/ss/ss5905.pdf>.

126. *Id.* at 26.

127. Danice K. Eaton et al., *Youth Risk Behavior Surveillance - United States 2011*, 61 MORBIDITY & MORTALITY WKLY. REP. 1, 37-38 (2012), available at <http://www.cdc.gov/mmwr/pdf/ss/ss6104.pdf>.

128. See, e.g., ARK. CODE ANN. §§ 6-16-132, 20-7-135 (2012); CAL. EDUC. CODE §§ 33352, 51241 (WEST 2011); COLO. REV. STAT. §§ 22-32-126.5, 22-30.5-505, 22-11-503 (2011); CONN. GEN. STAT. § 10-221P (2011).

129. See, e.g., FLA. STAT. §§ 570.98-.983, 1003.453, 1006.06, 1006.0606, 1010.77 (2011).

130. *Supplement, supra* note 86, at 1.

131. See Rob Hotakainen, *Lawmakers Fear Nationwide PE Cuts Are Too Steep*, NEWS TRIB. (Jan. 6, 2012), <http://www.thenewstribune.com/2012/01/06/1972624/lawmakers-fear-nationwide-pe-cuts.html>; see also Emily Richmond, *Physical Education Classes to Feel Strain of the Fiscal Fix*, LAS VEGAS



increasingly rigorous academic instruction mandates under the federal No Child Left Behind Act<sup>132</sup> and state requirements.

Again, the Arkansas experience is instructive. In 2005, the Arkansas Board of Education adopted advisory committee recommendations mandating at least 150 minutes of physical education each week for elementary students and 225 minutes per week for middle and high school students.<sup>133</sup> But two years later, the legislature acted “to increase academic instruction time in public schools and to limit physical education requirements for public school students.”<sup>134</sup> The act established significantly lower weekly physical education requirements and prohibited the state Department of Education from adopting higher standards without review by the education committees of the legislature.<sup>135</sup>

Local wellness policies mandated for schools participating in federal meal programs<sup>136</sup> must address physical activity as well as nutrition education and nutrition guidelines, but this mandate is not funded by the federal government.<sup>137</sup> There are federal grant programs, such as the Carol M. White Physical Education Program (PEP), to provide funds directly to local education agencies and community-based organizations to initiate, expand, and improve physical education offerings.<sup>138</sup> But as competitive grant programs that fund programs at only a small proportion of schools, these have limited reach and fall far short of comprehensively financing sufficient opportunities for physical activity in all schools.

Regulations mandating that a certain number of minutes per week be devoted to physical education or recess have been touted as a step in the right direction,<sup>139</sup> but research points to the need for increased focus on the quality—and not just the quantity—of opportunities for physical activity during the school day.<sup>140</sup> “Providing time for unstructured physical activity is not the same as providing instructional time for meeting the goals of quality physical

SUN (June 7, 2010), <http://www.lasvegassun.com/news/2010/jun/07/physical-education-classes-feel-strain-fiscal-fix>.

132. See No Child Left Behind Act of 2001, Pub. L. No.107-110.

133. *Child Health Advisory Committee Recommendations for Standards to Implement Through Rules & Regulations*, ARK. CENTER FOR HEALTH IMPROVEMENT, 12, <http://www.achi.net/ChildObDocs/CHAC%20Spring%202004%20Recommendations.pdf>.

134. See 2007 ARK. H.B. 1039, available at <http://www.achi.net/ChildObDocs/Act%20317.pdf>; see also ARK. CODE ANN. § 6-16-132 (2012).

135. § 6-16-132(b)(1) (requiring 60 minutes of physical education per week for children in kindergarten through eighth grade, and an additional 90 minutes of weekly physical activity for elementary school students, which can be met entirely through unstructured recess time and requiring a one-time ½ credit of physical education as a requirement for high school graduation).

136. Child Nutrition and WIC Reauthorization Act of 2004, Pub. L. No. 108-265, § 205.

137. See Sarah Lee et al., *Physical Education and Physical Activity: Results from the School Health Policies and Programs Study 2006*, 77 J. SCHOOL HEALTH 435, 437 (2007).

138. *Carol M. White Physical Education Program*, U.S. DEP'T OF EDUC., <http://www2.ed.gov/programs/whitephysed/index.html> (last updated Feb. 26, 2013).

139. See, e.g., Office of the Surgeon General, *The Surgeon General's Vision for a Healthy and Fit Nation 9* (2010), available at [http://www.surgeongeneral.gov/initiatives/healthy-fit-nation/obesity\\_vision2010.pdf](http://www.surgeongeneral.gov/initiatives/healthy-fit-nation/obesity_vision2010.pdf) (recommending that school systems requires students to participate in physical education for at least 150 minutes each week for elementary schools and 225 minutes per week for secondary schools).

140. *Strategies to Improve the Quality of Physical Education*, *supra* note 122, at 1.

education.”<sup>141</sup> Studies suggest that in a typical PE class, students are engaged in moderate-to-vigorous physical activity for less than 50% of the class time<sup>142</sup> and nearly half of U.S. schools do not have a formal physical education curriculum.<sup>143</sup> Reports indicate that student-to-teacher ratios in physical education classes frequently exceed 50 students per instructor—with some classes topping 100 students per instructor.<sup>144</sup> Well-designed PE curricula, adequate staffing, and enhanced training for PE teachers can help increase the amount of time that students spend engaged in moderate to vigorous activity during PE classes while also improving the variety of activities offered to students.<sup>145</sup>

### C. School-based Screening and Surveillance

Public health researchers and advocates have called for surveillance initiatives to monitor trends in the prevalence of obesity generally, and childhood obesity in particular.<sup>146</sup> *Screening* programs—which seek to identify children at risk for obesity and related illnesses—have been more controversial within the public health and medical communities.<sup>147</sup> Many states now mandate that surveillance and screening for childhood obesity be conducted in schools.<sup>148</sup> Students are weighed and measured in the school setting, sometimes as part of a health education or physical education program. Surveillance programs collect health information and report it to authorities as a means of monitoring the

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141. Charlene R. Burgeson, *Physical Education's Critical Role in Educating the Whole Child & Reducing Childhood Obesity*, 5 STATE EDUC. STAND. 27, 28 (2004).

142. Thomas L. McKenzie et al., *Student Activity Levels, Lesson, Context, and Teacher Behavior During Middle School Physical Education*, 71 RES. Q. EXERCISE & SPORT 249, 249–559 (2000).

143. Lee et al., *supra* note 137, at 445.

144. Richmond, *supra* note 131 (noting average PE class sizes of around sixty students); Rhiannon Meyers, *PE Classes Running out of Room*, GALVESTON DAILY NEWS (Feb. 17, 2008), <http://galvestondailynews.com/story.lasso?ewcd=9fd73cfb239f133d> (noting that Texas class-size regulations do not apply to PE classes and that elementary school PE classes have reached sixty to 150 students being supervised by a single qualified instructor at any given time); San Diego St. Univ., *Physical Education Matters for California Kids*, PHYSICAL EDUC. MATTERS (January 2007), available at [http://www.childrennow.org/uploads/documents/bwlw2011\\_resource3.pdf](http://www.childrennow.org/uploads/documents/bwlw2011_resource3.pdf) (noting that the five largest PE class sizes in the Los Angeles Unified School District averaged ninety-three students in middle schools and 87.5 students in high schools).

145. See U.S. DEP'T OF HEALTH & HUMAN SERVS., *supra* note 122; see also *Strategies to Improve the Quality of Physical Education*, *supra* note 122, at 1; Thomas L. McKenzie et al., *School Physical Education: Effect of the Child and Adolescent Trial for Cardiovascular Health*, 25 PREVENTIVE MED. 423, 423 (1996).

146. See, e.g., *Policy Statements*, *supra* note 120, at 465 (supporting the establishment of “new data collection systems to allow states to monitor the geographic distribution, secular trends and progress in reducing the prevalence of childhood overweight”).

147. See, e.g., KOPLAN ET AL., *supra* note 120, at 271 (recommending annual school-based BMI screening for children); U.S. Preventive Servs. Task Force, *Screening and Interventions for Overweight in Children and Adolescents: Recommendations Statement*, 116 PEDIATRICS 205, 205 (2005) (concluding that insufficient evidence exists to recommend BMI screening for children in clinical settings as a means for prevention of adverse health outcomes); *Body Mass Index Measurement in Schools*, CENTERS FOR DISEASE CONTROL & PREVENTION, 2–4, [http://www.cdc.gov/HealthyYouth/obesity/BMI/pdf/BMI\\_exec\\_summ.pdf](http://www.cdc.gov/HealthyYouth/obesity/BMI/pdf/BMI_exec_summ.pdf) (noting that research has not established the effectiveness of BMI screening programs and that “concerns have been expressed about school-based BMI screening programs, including that they might stigmatize students and lead to harmful behaviors”).

148. See *infra* note 153.

prevalence of childhood obesity informing obesity control policy.<sup>149</sup> Screening programs report health information to parents in an effort to help them correctly identify their children's weight status; motivate parents and children to improve their diet and become more physically active; and prompt parents to follow-up with a medical care provider regarding their children's weight.<sup>150</sup>

In 2003, Arkansas became the first state to mandate BMI screening of students in public schools.<sup>151</sup> Since 2005, BMI and other physical size and fitness measurement mandates have been adopted by between two and six states each year.<sup>152</sup> At least twenty-four states currently mandate that schools conduct measurements of students' BMI, weight, or physical fitness.<sup>153</sup> Additional states recommend, but do not require these kinds of assessments.<sup>154</sup> And even in states that neither require nor recommend assessments at the state level, many schools are implementing obesity and fitness assessment policies adopted at the school district level.<sup>155</sup> The majority of the mandates specifically require the

149. *Body Mass Index Measurement in Schools*, *supra* note 147, 1.

150. *Id.*

151. See An Act to Create a Child Health Advisory Committee, 2003 Ark. Acts 4226.

152. See *Childhood Obesity – 2011 Update of Legislative Policy Options*, NAT'L CONF. OF ST. LEGISLATURES, <http://www.ncsl.org/issues-research/health/childhood-obesity-2011.aspx#BMI> (last updated Feb. 2013); see also ARK. CODE ANN. § 20-7-135 (2012). In 2005, enacting states include: Missouri, South Carolina, Tennessee, and West Virginia. MO. REV. STAT. § 167.229 (2011); S.C. CODE ANN. § 59-10-50 (2011); TENN. CODE ANN. § 49-6-1401 (2011); W. VA. CODE § 18-2-7a (2011). In 2006, enacting states include: Delaware, Iowa, and New Jersey. DEL. CODE ANN. tit. 14 § 122 (2011); IOWA CODE § 135.27 (2011); N.J. ADMIN. CODE § 6A:16-2.2(k) (2011). In 2007, enacting states include: California, New York, Pennsylvania, and Texas. 2007 Cal. Legis. Serv. 720 (West); N.Y. EDUC. LAW § 904 (McKinney 2011); 24 PA. CONS. STAT. ANN. § 14-1402 (2011); TEX. EDUC. CODE ANN. § 38.101-104 (2011). In 2008, enacting states include: Illinois and Oklahoma. 122 ILL. COMP. STAT. 5 / 27-8.1 (2010); 410 ILL. COMP. STAT. 520 / 4 (2011); OKLA. STAT. tit. 70, § 24-100c (2011). In 2009, enacting states include: Georgia, Louisiana, Maine, Maryland, Massachusetts, and Nevada. GA. CODE ANN. § 20-2-777 (2009); LA. REV. STAT. ANN. § 17:17.5 (2011); ME. REV. STAT. tit. 20-A, § 6631 (2011); MD. CODE ANN., EDUC. § 7-409 (West 2011); 105 MASS. CODE REGS. 200.500 (2011); NEV. REV. STAT. § 392.420 (2011). In 2010, enacting states include: North Carolina and Ohio. N.C. GEN. STAT. § 115C-12 (2011); OHIO REV. CODE ANN. § 3313.674 (West 2011). In 2011, enacting states include: Alabama and Nebraska. L.B. 125, 102nd Leg., First Sess. (Neb. 2011) (indefinitely postponed April 18, 2012). In 2012, Kentucky is the only enacting state. KY. S.B. 15, 2011 Leg., Reg. Sess. (Ky. 2011) (pending).

153. See *supra* note 152 (listing Arkansas and twenty-three states since 2005 with statutes mandating such measurements). Most states require screenings three or four times throughout a student's public education. For example, Massachusetts requires BMI screenings in grades 1, 4, 7, and 10, while Delaware requires each student to be screened once in elementary, middle, and high school, and South Carolina requires screenings in grades 2, 5, 8, and high school. DEL. CODE ANN. 14 § 122 (2011); 105 MASS. CODE REGS. 200.500 (2011); S.C. CODE ANN. § 59-10-50 (2011). Ohio requires screening in grades 3, 5, and 9. OHIO REV. CODE ANN. § 3313.674 (West 2011). Some require annual screenings, at least in certain grade-level ranges. See, e.g., GA. CODE ANN. § 20-2-777 (2009); 24 PA. CONS. STAT. ANN. § 14-1402 (2011).

154. In Michigan, for example, the State Board of Education recommended (but did not mandate) BMI screening in a 2001 consensus report. MICH. DEP'T EDUC., THE ROLE OF MICHIGAN SCHOOLS IN PROMOTING HEALTHY WEIGHT 14 (2001), available at <http://www.emc.mich.edu/pdfs/Healthy%20Weight.pdf>.

155. See 2010-2011 NEB. DEP'T OF HEALTH & HUMAN SERVICES, YOUTH BMI SURVEILLANCE PROJECT REPORT 1 (2011), available at [http://dhhs.ne.gov/publichealth/Documents/2010-2011YouthBMI SurveillanceProjectReport.pdf](http://dhhs.ne.gov/publichealth/Documents/2010-2011YouthBMI%20SurveillanceProjectReport.pdf) (indicating that approximately  $\frac{3}{4}$  of Nebraska public schools were routinely measuring student height and weight in the years prior to the adoption of a state-wide regulatory mandate, which was included in draft guidelines promulgated by the state's Department

measurement of students' BMI.<sup>156</sup> Those that do not specifically require BMI calculations require other measurements of physical education,<sup>157</sup> physical fitness,<sup>158</sup> or height and weight.<sup>159</sup>

Several states, including Arkansas, mandate that schools provide reports of all students' physical assessment to parents.<sup>160</sup> Other states require reporting to state agencies, but not to parents.<sup>161</sup> Parent reports typically contain the student's BMI and percentile and accompanying guidance regarding healthy eating and physical activity habits.<sup>162</sup> The reports also generally direct parents to raise questions about weight and nutrition with the student's primary care provider.<sup>163</sup>

BMI and other measurements are relatively easy to collect in an accurate fashion, but accuracy is not the only concern. It is also important to protect the privacy and dignity of students during the process of collecting measurements, an issue that will be more fully addressed below. Most states' mandates do not place any restrictions on who shall perform the screening or the conditions under which it shall be performed.<sup>164</sup> Very few require a school nurse or physician to conduct the screening.<sup>165</sup> Maine requires that a nurse, physician, or other "trained screener" perform the assessment.<sup>166</sup> New Jersey specifically allows physical education instructors to perform the assessment.<sup>167</sup> Tennessee specifically allows any "current school staff or school volunteers trained in taking a body mass index" to perform the screening, with training materials provided to local education agencies by the state's department of health.<sup>168</sup>

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of Health and Human Services in 2011).

156. See Jennifer Linchey & Kristine Madsen, *State Requirements and Recommendations for School-Based Screenings for Body Mass Index or Body Composition, 2010*, 8 PREVENTING CHRONIC DISEASE 1, 3 (2010), available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181175/pdf/PCD85A101.pdf> (noting that at least twenty states require BMI screening or a fitness assessment which includes BMI or body composition screening).

157. South Carolina passed legislation in 2005 that requires "physical education assessments" in grades 2, 5, 8, and high school. S.C. CODE ANN. §§ 59-10-10, 59-10-50 (2012).

158. Maryland legislation passed in 2009 requires the Department of Education to "[e]stablish baseline student data for the health-related components of physical fitness." MD. CODE ANN., EDUC. § 7-409 (West 2011). North Carolina passed legislation requiring "evidence-based fitness testing." N.C. GEN. STAT. § 115C-12 (2011).

159. For example, the New Jersey regulation requires annual screenings of "height, weight and blood pressure." N.J. ADMIN. CODE § 6A:16-2.2(k) (2012).

160. These states include Delaware, Arkansas, Alabama, Georgia, Illinois, South Carolina, Tennessee, Pennsylvania, Maryland, and Ohio. See *supra* note 152 for a list of corresponding statutes.

161. TEX. EDUC. CODE ANN. § 38.103 (West 2011); W. VA. CODE § 18-2-7a (2011).

162. See, e.g., *Sample Child Health Reports to Parents*, ARK. CENTER FOR HEALTH IMPROVEMENT, <http://www.achi.net/ChildObDocs/2006%20CHR%20All%20Classifications%20English.pdf>.

163. *Id.*

164. See, e.g., An Act to Create a Child Health Advisory Committee, 2003 Ark. Acts 1220 (2003); 2007 Cal. Legis. Serv. 720 (West); LA. REV. STAT. ANN. § 17:17.5 (2011); S.C. CODE ANN. § 59-10-50 (2011); N.Y. EDUC. LAW § 904 (McKinney 2011); W. VA. CODE § 18-2-7a (2011).

165. See 105 MASS. CODE REGS. 200.500 (2011); 24 PA. CONS. STAT. ANN. § 14-1402 (2011).

166. ME. REV. STAT. ANN. tit. 20-A, § 6455 (2009). Nebraska's guidelines similarly require that screeners who are not themselves health professionals must either be directly supervised by a health professional or must have been certified by a health professional as competent to provide screening services. 4 NEB. ADMIN. CODE § 7-005 (2011).

167. S.B. 2384, 214th Leg., Reg. Sess. (N.J. 2010).

168. TENN. CODE ANN. § 49-6-1401 (2011).

Georgia requires that the screening take place during physical education classes.<sup>169</sup> Most states allow parents to decline the screening,<sup>170</sup> though typically parents must take affirmative steps to have their children excluded from screening, rather than being required to take affirmative steps to opt into inclusion in screening. In Massachusetts, for example, the school provides “prior notice of the screening and [its] benefits,” and gives parents an opportunity to submit a form requesting that their student be excluded.<sup>171</sup>

#### IV. THE EVIDENCE BASIS FOR CURRENT APPROACHES

Evidence supporting the effectiveness of school-based interventions to reduce BMI is very limited. A 2009 review found that among nine studies evaluating the effect of school-based interventions on BMI, only one identified a statistically significant, but very modest, reduction in BMI.<sup>172</sup> The single study that identified a successful reduction in BMI was focused on reducing children’s intake of carbonated beverages.<sup>173</sup> Other studies included in the review, which did not successfully demonstrate an impact on BMI, included an emphasis on physical activity during recess, increased time for physical education, health education, and healthier food offerings during lunch.<sup>174</sup>

Achieving significant and lasting reduction in obesity is no easy task. In its report on school-based BMI screening programs, the CDC declined to take a position for or against screening as an effective intervention, noting that “effective treatments for obesity are not available.”<sup>175</sup> The U.S. Preventive Services Task Force (an independent panel of preventive medicine and primary care experts whose recommendations have an impact on clinical practice and insurance coverage determinations) noted a similar concern in determining that “the evidence is insufficient to recommend for or against routine screening for overweight children and adolescents as a means to prevent adverse health outcomes,” based primarily on its finding of “insufficient evidence for the effectiveness of behavioral counseling or other preventive interventions with overweight children and adolescents that can be conducted in primary care settings.”<sup>176</sup> Essentially, if there are not effective interventions available to help individuals who are identified as being at risk, then screening to identify them is of little value.<sup>177</sup> This concern appears to be supported by studies evaluating school-based BMI screening programs. These studies show that BMI screening

169. GA. CODE ANN. § 20-2-777 (2009).

170. See, e.g., *Tennessee School Health Screenings Guidelines*, TENN. DEP’T OF EDUC., 51 (2008), available at <http://www.tennessee.gov/education/schoolhealth/healthservices/doc/HealthScreeningGuidelines.pdf>.

171. 105 MASS. CODE REGS. 200.000 (2009).

172. See Wanda Zenzen & Suha Kridli, *Integrative Review of School-Based Childhood Obesity Interventions*, 23 J. PEDIATRIC HEALTH CARE 242, 255 (2009).

173. Janet James et al., *Preventing Childhood Obesity by Reducing Consumption of Carbonated Drinks: Cluster Randomised Control Trial*, 328 BRIT. MED. J. 1237, 1237 (2004).

174. Zenzen & Kridli, *supra* note 172, at 242.

175. *Body Mass Index Measurement in Schools*, *supra* note 147, 1.

176. U.S. Preventive Servs. Task Force, *supra* note 147, at 205.

177. *Id.* at 205–06.

programs do not result in “significant changes in family nutrition behaviors or physical activity patterns at home,” although they may possibly increase the proportion of parents who are aware of “the association between childhood obesity and health problems” and who believe “that overweight children are likely to become overweight adults.”<sup>178</sup>

Health education and physical activity interventions for childhood obesity appear to achieve mostly modest results. In one study, for example, children were randomized to either an after school soccer program or a health and nutrition education program.<sup>179</sup> After six months, average BMI had increased among both groups, though the increase among the kids in the soccer program was somewhat smaller than among those in the education program.<sup>180</sup> In another study comparing an after school physical activity program to active placebo and non-intervention control groups, no significant changes in BMI were found.<sup>181</sup>

Some studies indicate that school-based interventions can effectively *prevent* children from becoming overweight, even if they do not effectively reduce BMI among children who are already overweight or obese.<sup>182</sup> For example, a 2005 study of the Child and Adolescent Trial for Cardiovascular Health (CATCH) demonstrated lower rates of increase in the percentage of students who were overweight or at risk of becoming overweight in the intervention group as compared to the control.<sup>183</sup> The CATCH intervention included the provision of funds for purchase of PE equipment, training programs for PE teachers and food service staff, as well as an enhanced PE curriculum and healthy eating education program.<sup>184</sup>

The evidence regarding the positive impact of school-based programs on outcomes *other than BMI* is somewhat more promising. For example, health education, physical education, and school meal intervention studies have demonstrated statistically significant improvements in fat intake, fruit and vegetable consumption, physical activity, and other health-related knowledge and behaviors, even if they have not demonstrated a significant impact on BMI.<sup>185</sup> In one study, for example, being randomly assigned to an enhanced

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178. UNIV. OF ARK. FOR MED. SCIS., FAY W. BOOZMAN COLL. OF PUB. HEALTH, YEAR THREE EVALUATION: ARKANSAS ACT 1220 OF 2003 TO COMBAT CHILDHOOD OBESITY 9, available at [http://www.uams.edu/coph/reports/2006Act1220\\_Year3.pdf](http://www.uams.edu/coph/reports/2006Act1220_Year3.pdf).

179. Dana L. Weintraub et al., *Team Sports for Overweight Children: The Stanford Sports to Prevent Obesity Randomized Trial (SPORT)*, 162 ARCHIVES OF PEDIATRICS & ADOLESCENT MED. 232, 232 (2008).

180. *Id.*

181. Amanda J. Daley et al., *Exercise Therapy as a Treatment for Psychopathologic Conditions in Obese and Morbidly Obese Adolescents: A Randomized, Controlled Trial*, 118 PEDIATRICS 2126, 2126 (2006).

182. See, e.g., Gary D. Foster et al., *A Policy-Based School Intervention to Prevent Overweight and Obesity*, 121 PEDIATRICS 794, 794 (2008) (finding a significant effect in prevention of overweight, but not obesity); Consuelo Gonzalez-Suearez et al., *School-Based Interventions on Childhood Obesity: A Meta-analysis*, 37 AM. J. PREVENTIVE MED. 418, 418 (2009).

183. Karen J. Coleman et al., *Prevention of the Epidemic Increase in Child Risk of Overweight in Low-Income Schools: The El Paso Coordinated Approach to Child Health*, 159 ARCHIVES OF PEDIATRICS & ADOLESCENT MED. 217, 220 (2005).

184. *Id.* at 218–23.

185. See, e.g., Peggy Agron et al., *California Project LEAN's Food on the Run Program: An Evaluation of High School-Based Student Advocacy Nutrition and Physical Activity Program*, 102 AM. DIETETIC ASS'N 103 (2002); Benjamin Caballero et al., *Pathways: A School-Based, Randomized Controlled Trial for the*

physical education class was associated with greater physical fitness, even though it was not associated with a reduced BMI.<sup>186</sup>

#### V. RE-ORIENTING SCHOOL-BASED INTERVENTIONS TO PROMOTE “HEALTH AT EVERY SIZE”

Health at Every Size is “an alternative public health model” for thinking about the relationship between size and health that is developing through “a grassroots movement . . . among health-care workers and health researchers” to oppose the use of health concerns “to oppress people of size.”<sup>187</sup> Ellen Shuman and Karin Kratina have identified five key precepts of the Health at Every Size model:

1. Enhancing health—attending to emotional, physical and spiritual well-being, without focusing on weight loss or achieving a specific “ideal weight.”
2. Size and self-acceptance—respecting and appreciating the wonderful diversity of body shapes, sizes, and features (including one’s own!), rather than pursuing an idealized weight, shape, or physical feature.
3. The pleasure of eating well—eating based on internal cues of hunger, satiety, and appetite; individual nutritional needs; and enjoyment, rather than on external food plans or diets.
4. The joy of movement—encouraging all physical activities for the associated pleasure and health benefits, rather than following a specific routine of regimented exercise for the primary purpose of weight loss or management.
5. An end to weight bias—recognizing that body shape, size, or weight are not evidence of any particular way of eating, level of physical activity, personality, psychological issue, or moral character; and confirming that there is beauty and worth in EVERY body.<sup>188</sup>

Similar ideas about the negative impact of weight bias on the health problems associated with obesity have been put forward by researchers at the Yale Rudd Center for Food Policy and Obesity. Rebecca Puhl, Kelly Brownell, and others have argued that weight bias should be addressed as a public health issue, based on its negative impact on obesity and health more broadly.<sup>189</sup>

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*Prevention of Obesity in American Indian School Children*, 78 AM. J. CLINICAL NUTRITION 1030 (2003); Katherine Cason & Barbara N. Logan, *Educational Intervention Improves 4th-grade Schoolchildren’s Nutrition and Physical Activity Knowledge and Behaviors*, 21 TOPICS CLINICAL NUTRITION 234 (2006); Pinki Sahota et al., *Randomised Controlled Trial of Primary School Based Interventions to Reduce Risk Factors for Obesity*, 323 BRIT. MED. J. 1029 (2001); Janet M. Warren et al., *Evaluation of a Pilot School Programme Aimed at the Prevention of Obesity in Children*, 18 HEALTH PROMOTION INT’L 287 (2003).

186. Margaret Schenider Jamner et al., *A Controlled Evaluation of School-Based Intervention to Promote Physical Activity Among Sedentary Adolescent Females: Project FAB*, 34 J. ADOLESCENT HEALTH 279, 287 (2004).

187. Burgard, *supra* note 4, at 42.

188. *Id.* at 42–43 (attributing Ellen Shuman and Karin Kratina).

189. See, e.g., Puhl & Heuer, *supra* note 58, at 1022; Rebecca M. Puhl et al., *Internalization of Weight Bias: Implications for Binge Eating and Emotional Well-Being*, 15 OBESITY 19, 19 (2007); Rebecca M. Puhl & Kelly D. Brownell, *Psychosocial Origins of Obesity Stigma: Toward Changing a Powerful and Pervasive Bias*,

In light of the current state of evidence regarding the minimal effectiveness of school-based interventions to address childhood obesity, I propose a reorientation of those approaches based on Health at Every Size principles and concerns about the impact of weight bias on public health. In particular, I recommend three concrete steps. First, interventions aimed at improving the food environment and increasing physical activity in schools are good in theory, but to be effective, they require greater investment of resources to ensure that healthy eating and activity options are appealing to kids. Second, in light of concerns that BMI measurement in schools is potentially stigmatizing and ineffective as a health promotion intervention, I propose that it be eliminated and replaced, as needed, with clinical screening programs. Finally, I propose that concerns about weight bias should be more fully integrated into existing and developing legal frameworks that address bullying, discrimination, and privacy in schools.

### A. Developing More Appealing Healthy Eating and Activity Options

The HAES approach emphasizes the importance of making healthy eating and physical activity an enjoyable part of everyday life, rather than viewing it as a necessary chore for weight loss. Research suggests that interventions emphasizing the positives of healthy foods are more effective than those that focus on the negatives of junk food.<sup>190</sup> And enjoyment of physical activity is associated with greater engagement in it.<sup>191</sup> School-based interventions are intended to address childhood obesity, but they can also play a role in promoting healthy behaviors that persist into adulthood. In light of this longer-term aim, it might be particularly important to invest in the *quality* of school meal and physical education programs in ways that promote enjoyment of healthy options.

Improved federal nutrition guidelines are an important step, but without sufficient funding to provide appealing healthy options and market them to students, they could be wasteful and ineffective. Implementation of the HHS's stringent nutritional standards has proven politically difficult. Critics have expressed concerns about the increased costs to schools,<sup>192</sup> wasted food,<sup>193</sup> and decreased participation in the school lunch program.<sup>194</sup> Due in part to the increased portion of vegetables and fruits required by the HHS, costs for

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4 OBESITY REVIEWS 213, 221 (2003).

190. Leonard H. Epstein et al., *Increasing Healthy Eating vs. Reducing High Energy-Dense Foods to Treat Pediatric Obesity*, 16 OBESITY 318, 319 (2008) (finding that counseling interventions focusing on "making healthy food choices" is more effective than focusing on decreasing high energy dense foods in terms of the impact on weight status beyond the one-year mark).

191. See, e.g., Bob Carroll & Julia Loumidis, *Children's Perceived Competence and Enjoyment of Physical Education and Physical Activity Outside School*, 7 EUR. PHYSICAL EDUC. REV. 24, 24 (2001).

192. Dills, *supra* note 111.

193. Lauren Ritchie, *Wasted School Food Will Increase Because of Federal Requirement*, ORLANDO SENTINEL (Feb 22, 2012), [http://articles.orlandosentinel.com/2012-02-22/news/os-1k-lauren-ritchie-wasted-school-food-20120222\\_1\\_school-lunch-hunger-free-kids-act-lunch-ladies](http://articles.orlandosentinel.com/2012-02-22/news/os-1k-lauren-ritchie-wasted-school-food-20120222_1_school-lunch-hunger-free-kids-act-lunch-ladies).

194. Howard Fischer, *Legislation Would Allow Public Schools to End Free Lunches*, EAST VALLEY TRIB. (Mar. 16, 2012), [http://www.eastvalleytribune.com/arizona/article\\_3b97e2dc-413a-11e1-a1d6-001871e3ce6c.html](http://www.eastvalleytribune.com/arizona/article_3b97e2dc-413a-11e1-a1d6-001871e3ce6c.html).



meals are expected to rise.<sup>195</sup> The HHFKA requires schools to cover the increased cost by either raising the cost of the paid lunches or by contributing non-federal funding.<sup>196</sup> Some commentators worry that school districts may respond to pressure from middle income families – those that struggle financially but do not qualify for free or subsidized meals—and opt out of the federal program altogether.<sup>197</sup>

The HHFKA's more stringent nutrition standards were accompanied by the first increase in per-meal federal reimbursements that exceeds inflation in more than thirty years.<sup>198</sup> The additional six cents per meal will bring the federal reimbursement for a lunch provided to a child free of charge (based on her household income eligibility) up to \$2.86.<sup>199</sup> Nutrition experts have argued that the reimbursement rate falls far short of what is required to offer healthy meals that are fresh and appealing.<sup>200</sup> Reliance on non-federal funding to make up the difference means that schools in wealthier districts are able to expend more than those with fewer resources, raising equity concerns.<sup>201</sup>

Low-cost, bulk-produced foods do not typically make for the most appealing meals, particularly when the fat and salt is reduced and vegetables and whole grains are increased. Commentators have argued that most of the healthy food mandated under the HHFKA guidelines will go straight from kids' lunch trays into the trash.<sup>202</sup> "Plate waste" – food provided by the lunch program that goes uneaten—is a problem that USDA is well-aware of,<sup>203</sup> but it does not have the funding to monitor the extent of waste as the new guidelines go into effect.

The District of Columbia's approach, following the adoption of its Healthy Schools Act in 2010, provides a helpful model for thinking about how to promote students' adjustment to healthier meals. D.C. is one of only a few state-level governments to supplement federal reimbursements with additional reimbursements to schools. Schools receive an additional ten cents per meal on top of federal reimbursements, with a five-cent bonus for each meal that includes

195. Dills, *supra* note 111.

196. Healthy, Hunger Free Kids Act of 2010, Pub. L. No. 111-296, § 205.

197. Fischer, *supra* note 194.

198. Press Release, U.S. Dep't of Agric., USDA to Provide Additional Funds for Nation's School Meals (Apr. 27, 2012), available at <http://www.fns.usda.gov/cga/pressreleases/2012/FNS-1.htm>.

199. *Child and Adult Care Food Program*, U.S. DEP'T OF AGRIC., <http://www.fns.usda.gov/cnd/care/ProgramBasics/Payments/Table.pdf>.

200. Greg Toppo, *Healthy, Organic and Cheap School Lunches? Order Up*, USA TODAY (Dec. 1, 2009), [http://usatoday30.usatoday.com/news/health/2009-12-02-schoollunch02\\_st\\_N.htm](http://usatoday30.usatoday.com/news/health/2009-12-02-schoollunch02_st_N.htm).

201. *Id.*; Jen Bondeson, *Montgomery County Students Adjusting to Healthier School Lunches*, GAZETTE.NET (Oct. 10, 2012), [http://www.gazette.net/article/20121010/NEWS/710109623/1123/montgomery-county-students-adjusting-to-healthier-school-lunches&template=gazette?cid=xrs\\_rss-nd](http://www.gazette.net/article/20121010/NEWS/710109623/1123/montgomery-county-students-adjusting-to-healthier-school-lunches&template=gazette?cid=xrs_rss-nd) (noting that Montgomery County, Maryland expects to spend about \$4.00 per meal under the new regulations and is offering options like sliced bell peppers and hummus and salad bars in elementary schools).

202. See, e.g., Vivian Yee, *No Appetite for Good-for-You School Lunches*, N.Y. TIMES, Oct. 5, 2012, at A1, available at <http://www.nytimes.com/2012/10/06/nyregion/healthier-school-lunches-face-student-rejection.html?pagewanted=all>.

203. See, e.g., JEAN C. BUZBY & JOANNE F. GUTHRIE, PLATE WASTE IN SCHOOL NUTRITION: FINAL REPORT TO CONGRESS 1 (2002).

locally-sourced produce.<sup>204</sup> The D.C. Act also includes farm-to-school and school garden programs that integrate nutrition education with enhanced school meal offerings.<sup>205</sup> The farm-to-school program includes a local sourcing requirement combined with educational initiatives to “get students and cafeteria staff on board with the healthier, farm-fresh foods now being served in school meals.”<sup>206</sup> Local chefs conduct student taste-testing celebrations, a mobile farmers’ market allows students to practice skills like shopping for a healthy meal on a budget, and school foodservice staff receive specialized training.<sup>207</sup> Some have suggested that “extras” like farm-to-school programs and school gardens are a frivolous use of scarce resources for education.<sup>208</sup> But they might play a role in shifting students’ food preferences toward healthier options in ways that persist beyond their consumption of government-controlled school meals.

Quality physical education programs also require adequate resources. Lack of space, facilities, time, and training “make[] running laps easier to manage than skill-building activities that may engage a higher proportion of students.”<sup>209</sup> On the other hand, when a school is equipped with sufficient resources, it can make a variety of options available to students—including stationary bikes, treadmills, resistance bands, medicine balls, and active electronic games like Dance Dance Revolution—fostering an engaging environment in which kids can develop the skills and interest required to be physically active on their own.<sup>210</sup> When there are enough qualified PE teachers to keep class sizes small, students are able to enjoy more space in which to be active and receive more attention from faculty. Small class size also reduces the incidence of fights during PE time, a significant problem in some schools. When students are allowed to self-select by ability level—one school developed a system whereby the students divide themselves into “rookies,” “semi-pros” and “pros”—students who are less comfortable with their skill level are able to spend more time engaged in the game rather than sitting on the sidelines.<sup>211</sup>

The problem, of course, is that high-quality school meal and physical education programs are costly. At a time when governments are talking about fiscal austerity, it may be that the District of Columbia healthy schools reform is an anomaly. Nonetheless, there might be a few low-cost steps that schools can

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204. *D.C. School Lunch 101: How School Lunch Works In Washington, D.C.*, D.C. FARM TO SCH. NETWORK (2012), available at <http://dcfarmtoschool.org/wp-content/uploads/2012/02/DC-School-Lunch-101.pdf> (noting the D.C. government also provides additional reimbursements to schools to eliminate the “reduced price” category, allowing schools to provide free lunch to students at a higher income eligibility level than the federal program).

205. D.C. Healthy Schools Act of 2010, D.C. CODE §§ 38-823.01-.02.

206. OFFICE OF THE SUPERINTENDENT OF EDUC., HEALTHY SCHOOLS ACT OF 2010 (D.C. LAW 18-209) REPORT 3 (2012), available at [http://www.farmtoschool.org/files/publications\\_468.pdf](http://www.farmtoschool.org/files/publications_468.pdf).

207. *See id.*

208. *See* Caitlin Flanagan, *Cultivating Failure: How School Gardens Are Cheating our Most Vulnerable Students*, ATLANTIC MAG. (Jan. 1, 2010, 12:00 PM), <http://www.theatlantic.com/magazine/archive/2010/01/cultivating-failure/307819/2/>.

209. San Diego St. Univ., *Success Stories from California Low Resource Schools That Have Achieved Excellent PE Programs*, PHYSICAL EDUC. MATTERS 3 (Feb. 2008), available at [http://www1.calendow.org/uploadedFiles/Publications/By\\_Topic/Disparities/Obesity\\_and\\_Diabetes/ASAP8.pdf](http://www1.calendow.org/uploadedFiles/Publications/By_Topic/Disparities/Obesity_and_Diabetes/ASAP8.pdf).

210. *Id.*

211. *Id.* at 12-13.

take to foster healthier life-long relationships with food and physical activity. For example, it might be important for schools to refrain from using physical activity as a punishment,<sup>212</sup> or from conducting physical assessments of students during physical education classes in a way that focuses attention on students' size.

## B. Ending BMI Measurement in Schools

Some public health advocates have argued that interventions focused on childhood obesity may “result in unprecedented levels of body hatred, unhealthy and inappropriate weight loss attempts, fears of food, increased susceptibility to media messages, eating disorders, nutritional deficits, and weight discrimination.”<sup>213</sup> One study of state-mandated BMI screening and parent notification found that some parents responded to reports by directing “negative weight related comments or behaviors” at their children—including some children whose weight was classified as normal.<sup>214</sup> Anecdotal reports suggest that school-based weight and fitness screenings can produce taunting and humiliation by teachers as well as peers.<sup>215</sup>

Experts recommend that if obesity screening is conducted in schools, it should be done only with careful attention to how measurements are taken, and by whom.<sup>216</sup> Ideally, nurses or other health professionals should conduct screenings, to “increase[] the likelihood that this task will be carried out in a caring and sensitive manner.”<sup>217</sup> But because of budgetary constraints, in many cases the screenings are being performed by teachers, teaching assistants, and volunteers.<sup>218</sup> Only a few states have adopted comprehensive guidelines (but not statutory mandates) regarding the manner in which weight or BMI screening should be conducted.<sup>219</sup> Some have followed Michigan’s “Six Safeguards” approach.<sup>220</sup> These safeguards include: (1) implementation of a safe and

212. See CTRS. FOR DISEASE CONTROL & PREVENTION, PHYSICAL EDUCATION CURRICULUM ANALYSIS TOOL 4 (2006), available at <http://www.cdc.gov/healthyyouth/PECAT/pdf/PECAT.pdf> (noting that instruction in physical education should not use physical activity as a punishment).

213. Maclean, *supra* note 60, at 90; accord Jane Ogden & Chris Evans, *The Problem with Weighing: Effects on Mood, Self-Esteem and Body Image*, 20 INT’L J. OBESITY & RELATED METABOLIC DISORDERS 272, 272–77 (1996) (describing the negative impact of weighing and classifying weight on self-esteem and body image); see Allison J. Nihiser et al., *Body Mass Index Measurement in Schools*, 77 J. SCHOOL HEALTH 651, 651 (2007), available at [http://www.ashaweb.org/files/public/josh\\_1207/josh\\_final\\_249\\_07nov27.pdf](http://www.ashaweb.org/files/public/josh_1207/josh_final_249_07nov27.pdf).

214. See Jenna M. Kaczmariski et al., *State-Mandated School-Based BMI Screening and Parent Notification: A Case Study*, 12 HEALTH PROMOTION PRAC. 797, 797 (2011).

215. See Michelle Stover, “These Scales Tell Us That There Is Something Wrong with You”: How Fat Students Are Systematically Denied a Fair and Equal Education and What We Can Do to Stop This, 83 S. CAL. L. REV. 933, 935–36, 941–43 (2010) (chronicling several narratives of stigmatizing experiences during fitness tests and in-school weighings).

216. See *id.*

217. See Joanne P. Ikeda et al., *BMI Screening in Schools: Helpful or Harmful*, 21 HEALTH EDUC. RES. 761, 764 (2006), available at <http://her.oxfordjournals.org/content/21/6/761.full.pdf+html>.

218. *Id.*

219. See, e.g., *Guiding Principles For BMI Reporting In Children & Adolescents When Performed In A School Setting*, ARK. CENTER FOR HEALTH IMPROVEMENT, <http://www.achi.net/ChildObDocs/071016Guiding%20Principles%20for%20BMI%20Reporting%20in%20Children.pdf>.

220. MICH. DEP’T OF EDUC., THE ROLE OF MICHIGAN SCHOOLS IN PROMOTING HEALTHY WEIGHT 14–15 (Sept. 2001).

supportive learning environment; (2) classroom instructions to “counteract[] social pressure for excessive slenderness” and to “enhance[] students’ understanding of the healthy weight concept;” (3) a system in place to notify parents and guardians regarding an impending screening and to obtain permission through “passive consent” whereby parents must affirmatively take action to opt out of screening or else be assumed to have opted in; (4) a referral system for guiding students to “further evaluation and help;” (5) staff training in screening techniques and interpretation of results; and (6) development of a respectful screening process “that protects the self-esteem of students and avoids labeling students,” including use of a privacy screen, prohibition on the announcement of height and weight to the student or any other nearby adults, and prohibition of judgmental comments by screeners to students or others.<sup>221</sup>

Experts have cautioned that “[w]idespread discriminatory attitudes and actions toward obese children and adults pose a barrier to establishing the ‘inclusive, respectful climate’ called for by [federal school health screening recommendations].”<sup>222</sup> Conducting screenings according to these guidelines could be expensive, raising the same budgetary concerns discussed above with regard to school food and PE programs. For school-based screening and surveillance programs, however, a far simpler solution is available: to discontinue them.

As noted above, measurement of students’ weight and BMI in school raises concerns about their psychosocial health. The benefits of screening programs—aimed at identifying at-risk students for follow-up with health-care providers—are dubious. Evaluation of the Arkansas program suggests that school-based screening has not prompted parents of at-risk students to follow-up with their health-care providers and increased awareness among parents of obesity-related concerns has not led to lifestyle changes.<sup>223</sup>

The benefits of surveillance programs—aimed at keeping track of population-level trends for planning and evaluation purposes—are more widely agreed upon,<sup>224</sup> but can be obtained in other ways. In Illinois, for example the Department of Public Health developed a program to conduct surveillance of trends in childhood obesity using “information collected during students’ school physical examinations with their medical care providers.”<sup>225</sup> This “hybrid” model, which combines aspects of school-based surveillance with aspects of a registry model whereby data are collected from clinical sources, has also been

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221. *Id.*; see also TENN. DEP’T OF EDUC., TENNESSEE SCHOOL HEALTH SCREENING GUIDELINES 18–20 (2008), available at <http://www.tennessee.gov/education/schoolhealth/healthservices/doc/HealthScreeningGuidelines.pdf>.

222. Ikeda et al., *supra* note 217, at 765.

223. UNIV. OF ARK. FOR MED. SCIS., *supra* note 178, at 9.

224. See, e.g., Matt Longjohn et al., *Learning from State Surveillance of Childhood Obesity*, 29 HEALTH AFFS. 463, 463 (2010) (noting that high quality data regarding the prevalence of and trends in childhood obesity are “essential to identifying and tracking disparities, designing and evaluating targeted interventions, and advocating for policy changes and funding”); *Policy Position Statement on Body Mass Index (BMI) Surveillance and Assessment in Schools*, AM. HEART ASS’N, [http://www.heart.org/idc/groups/heart-public/@wcm/@adv/documents/downloadable/ucm\\_301789.pdf](http://www.heart.org/idc/groups/heart-public/@wcm/@adv/documents/downloadable/ucm_301789.pdf) (supporting surveillance, but not screening) (last visited May 8, 2013).

225. Nihiser et al., *supra* note 213, at 655.

developed in New York.<sup>226</sup> The advantage of this approach over standard clinical surveillance registries is that because it is tied to health forms required as a condition of school entry, it provides more comprehensive coverage of the population. The advantage of the hybrid approach over the currently predominant school-based measurement programs is that data are collected by clinical health-care providers in a more private setting *outside of schools*. Analysts have noted some disadvantages, including that the hybrid model must comply with two sets of federal privacy regulations: the Health Insurance Portability and Accountability Act (HIPAA) privacy protections that apply to health-care providers' handling of patient information,<sup>227</sup> as well as the Family Educational Rights and Privacy Act (FERPA)<sup>228</sup> protections that apply to schools' handling of student information.<sup>229</sup> Of course, from a student privacy perspective, this may be seen as an advantage, rather than a disadvantage.

### C. Applying Existing Privacy and Anti-Bullying Laws to Address Concerns about Weight Bias in Schools

Combating weight bias is one of the central precepts of the Health at Every Size movement, not just as a matter of individual dignity, but also as a matter of protecting and promoting good health. The negative consequences of obesity for psychosocial health are avoidable. Indeed, as noted above, studies suggest that perceived weight, concern about weight or shape, and weight-based teasing are more strongly associated with psychosocial problems than one's actual weight.<sup>230</sup> The psychological stress, depression, low self-esteem, and body dissatisfaction that result from experiences of weight bias, may also contribute to poor physical health among obese children.<sup>231</sup> Thirty percent of girls in middle school and high school and twenty four percent of boys report being teased by their peers at school about their weight.<sup>232</sup> Among those whose weight categorizes them as "obese," sixty three percent of girls and fifty eight percent of boys reported being teased about their weight. Studies suggest that children as young as three-years-old regard overweight children as mean, stupid, ugly, sloppy, lazy, loud, and sad and they overwhelmingly prefer thin children as prospective playmates.<sup>233</sup> Weight-based bullying may at least partially explain why obese elementary school children miss more days of school than their peers.<sup>234</sup> Experiencing weight-based stigma, shame, and discrimination can contribute to unhealthy eating behaviors and avoidance of physical activity both in and outside of

226. See Longjohn et al., *supra* note 224, at 467.

227. See General Administrative Requirements, 45 C.F.R. § 160 (2012); Security and Privacy, 45 C.F.R. § 164 (2012).

228. 20 U.S.C. § 1232g (2012).

229. See Longjohn et al., *supra* note 224, at 467.

230. See *supra* note 57.

231. See Rebecca M. Puhl & Janet D. Latner, *Stigma, Obesity, and the Health of the Nation's Children*, 133 PSYCHOL. BULL. 557, 557 (2007).

232. *Id.* at 559.

233. *Id.* at 563.

234. See Andrew B. Geier et al., *The Relationship Between Relative Weight and School Attendance Among Elementary Schoolchildren*, 15 OBESITY 2157, 2157 (2007).

school.<sup>235</sup>

For all of these reasons—in addition to basic respect for human dignity—combating weight bias should be viewed as an essential component of school-based interventions aimed at addressing the problems associated with childhood obesity. Existing privacy, anti-discrimination, and anti-bullying frameworks may provide useful tools for addressing problems associated with weight bias in schools.

Where BMI measurement is conducted in schools, FERPA might provide a useful and underutilized legal framework for addressing privacy concerns. FERPA governs the privacy of “education records” maintained by educational agencies and institutions that receive funds from the federal Department of Education.<sup>236</sup> “Education records” are defined broadly as records that are directly related to a student and maintained by an educational agency or institution or other party acting on its behalf.<sup>237</sup> Whereas HIPAA includes a rather broad exception that allows health-care providers to share personally identifiable health information with public health authorities, FERPA’s exceptions are more narrowly tailored.<sup>238</sup> The result is that, under FERPA, information must be aggregated (or otherwise purged of information that would allow data to be matched with any individual) before it can be shared with health authorities, in the absence of written parental consent.<sup>239</sup> School-based BMI screening and surveillance programs typically allow for opt-out parental consent, which would not be sufficient for FERPA purposes. Reporting to health authorities is, however, generally done via aggregated, de-identified data, making the disclosures legal under FERPA.

The more interesting application of FERPA to BMI screening and surveillance programs relates to the maintenance of privacy *during* the measurement process. If classmates or other bystanders are easily able to ascertain a student’s weight or BMI, either by seeing the numbers on the scale or by overhearing a statement from the individual conducting the measurement, that inadvertent disclosure would arguably constitute a FERPA violation.<sup>240</sup> Intentional disclosures may also be a problem. Anecdotal reports of formerly fat

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235. *Id.* at 569; Lewis et al., *supra* note 61, at 1350.

236. *See* 20 U.S.C. § 1232g (2012).

237. *See* What Definitions Apply to These Regulations?, 34 C.F.R. § 99.3 (2012).

238. *See* Family Pol’y Compliance Off., U.S. Dep’t of Educ., *Joint Guidance on the Application of the Family Educational Rights and Privacy Act (FERPA) and the Health Insurance Portability and Accountability Act of 1996 (HIPAA) to Student Health Records*, U.S. DEP’T OF HEALTH & HUMAN SERVICES (Nov. 2008), <http://www.hhs.gov/ocr/privacy/hipaa/understanding/coveredentities/hipaaferpajointguide.pdf> (giving an overview of FERPA and HIPAA).

239. *See id.*

240. FERPA is generally understood to require that teachers take steps to safeguard graded papers or tests to prevent inadvertent disclosure of a student’s grades to classmates. *See, e.g., Grade Confidentiality (FERPA)*, PURDUE UNIV. TEACHING ACAD., <http://www.teachingacademy.purdue.edu/resources/gradeConfidentiality.asp> (last visited May 8, 2013). For example, teachers are counseled that they should not allow a student to distribute graded papers to classmates or leave graded work for students to search through for their papers. *See id.* Note, however, that to be actionable, an alleged FERPA violation must constitute a “policy or practice” of allowing disclosures. *See* *Gonzaga Univ. v. Doe*, 536 U.S. 273, 288 (2002) (noting that FERPA’s nondisclosure provisions “speak only in terms of institutional policy and practice, not individual instances of disclosure”).

students describe incidents in which teachers performing weight or skin-fold thickness measurements announce results to the class or even describe a particular student as being heavier or fatter than his or her classmates.<sup>241</sup> Framing the issue of privacy during BMI screenings in terms of federal legal requirements (rather than non-binding state-level guidelines) might help prevent these kinds of harmful interactions.

Anti-bullying initiatives represent a significant missed opportunity for addressing the problem of weight bias in schools. “Bullying in schools has become widely viewed as an urgent social, health, and education concern that has moved to the forefront of public debate on school legislation and policy.”<sup>242</sup> Virtually every state has adopted some kind of anti-bullying or anti-harassment law or policy applicable to students in K–12 schools.<sup>243</sup> But concerns about weight-based victimization have not received nearly the attention that other kinds of status-based bullying have. For example, seventeen states have adopted anti-bullying or anti-harassment laws that extend explicit protection to certain classes of students, and some of these limit the definition of bullying or harassment to cases where the target is a member of a protected class.<sup>244</sup> Of the states that emphasize particular characteristics of the targeted student, only four include physical appearance, weight, or obesity, compared to seventeen that include race, sixteen that include disability, sex/gender, and religion/religious practice, and fourteen that include sexual orientation.<sup>245</sup> Legal commentators have argued against an approach emphasizing enumerated characteristics, precisely because “most bullying is motivated by factors like personal appearance that are unrelated to class or group affiliation.”<sup>246</sup>

From a public health standpoint, anti-bullying interventions aimed at reducing weight-based victimization should be implemented with particular attention to physical education programs. P.E. classes are a time of heightened vulnerability for overweight or obese students who are the target of bullying by teachers and staff as well as students. Anecdotal evidence suggests that “[b]eing called offensive nicknames by teachers and being screamed at in front of the class for being fat, uncoordinated, or slow is a common experience of many fat people during school gym classes.”<sup>247</sup> In a survey of students and physical education staff, respondents “indicated that teasing and bullying were among the predominant barriers to students fully participating in physical education class.”<sup>248</sup>

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241. See Stover, *supra* note 215, at 941–43 (chronicling several narratives of stigmatizing experiences during fitness tests and in-school weighings).

242. VICTORIA STUART-CASSEL, ARIANA BELL, & J. FRED SPRINGER, ANALYSIS OF STATE BULLYING LAWS AND POLICIES ix (2011), available at <http://www2.ed.gov/rschstat/eval/bullying/state-bullying-laws/state-bullying-laws.pdf>.

243. *Id.*

244. *Id.* at 27–28.

245. *Id.*

246. *Id.* at 29.

247. See Stover, *supra* note 215, at 251–52 (quoting SONDRA SOLOVAY, TIPPING THE SCALES OF JUSTICE: FIGHTING WEIGHT-BASED DISCRIMINATION 55 (2000)).

248. *Id.* at 951 (quoting Diane Neumark-Sztainer & Marla Eisenberg, *Weight Bias in a Teen’s World*, in *WEIGHT BIAS: NATURE, CONSEQUENCES, AND REMEDIES* 68, 71 (Kelly D. Brownell et al. eds., 2005)).

## VI. CONCLUSION

Unhealthy eating and physical inactivity among children are enormous problems with consequences that will extend for decades into the future. Recognition of this fact has prompted virtually every state and many local jurisdictions to adopt legislation aimed at addressing the problem of “childhood obesity” through school-based interventions. But framing this problem in terms of children’s *size*—rather than framing it directly in terms of their *health*—may be shortsighted. This article has explored what a Health at Every Size approach to school-based obesity policies might look like. Further research, especially empirical research, will be necessary to determine whether existing approaches aimed at increasing the amount of time devoted to physical education or health education or focusing on the nutritional content of school meals and competitive foods is effective at reducing children’s weight. Going forward, evaluations of these programs should focus on other, more direct and well-established indicators of student health—such as blood pressure, cholesterol, and blood glucose. Additionally, evaluations should be sensitive to whether school-based interventions are exacerbating widespread weight bias and weight-based bullying in schools. To the extent that empirical data back up the anecdotal evidence and concerns of experts, policymakers should consider alternative approaches that aim to reduce weight bias while promoting enjoyable healthy eating and physical activity options.