

Review article

The Need for Bold Action to Prevent Adolescent Obesity

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Abstract

Record levels of obesity in children and adolescents are predictable in light of powerful conditions that promote high consumption of calorie-dense, nutrient-poor foods and discourage physical activity. Default conditions for youth are dangerous, and include multiple and relentless forms of marketing, poor foods promoted in schools, and a variety of other conditions that undermine personal resources, individual responsibility, and parental authority. This article discusses how optimal defaults can be created using five issues as examples: framing of the obesity issue, treating versus preventing obesity, nutrition in schools, marketing, and addressing weight bias and discrimination. By adopting a public health approach that addresses the conditions causing obesity, there is hope of reversing troubling trends in prevalence. © 2009 Society for Adolescent Medicine. All rights reserved.

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Obesity; Public health; Weight bias; Nutrition

How a nation and the world respond to the growing crisis of child and adolescent obesity depends in large measure on key assumptions about the problem. Public and legislator perceptions of who and how many are affected, and more important, causes of the problem, shape the way obesity is framed in the public debate, the resources devoted to it, the relative roles of treatment, prevention, and education, and how governments respond or fail to respond. Understanding how these issues operate and how to best mobilize social and political change offer what may be the greatest hope for reducing prevalence.

We begin with several assumptions. First is that the alarming rates of obesity in youth [1], the attendant diseases [2], and the fact that prevalence is increasing in all parts of the world [3], demand rapid, bold, and decisive action. Second, although factors such as genetics help establish individual vulnerability, high rates of obesity are caused by an environment that encourages excess food consumption and discourages physical activity. Third, the factors making this so are deeply woven into business, politics, and economics. Fourth,

bold and decisive action involves to some extent building in traditional areas (treatment, education), but more important, will be qualitative changes that address the prime drivers of the problem. It is our aim to provide a framework for such change and to highlight specific examples of taking action.

At the heart of change: optimal defaults

Many approaches have been proposed to deal with child and adolescent obesity, but there is little agreement about how to establish priorities among them. Consensus is likely only if the field can rally behind an organizing conceptual scheme. One such scheme involves the concept of optimal defaults.

Behavior and health are affected by environmental conditions that surround people as their default. For instance, poverty and social inequality have very negative effects on health through default conditions such as poor access to healthcare, inadequate education about health, dangerous living conditions, stress, and more [4]. As more people are exposed to suboptimal defaults, disease increases.

Obesity in youth exists because of highly suboptimal defaults. Nutrient-poor, calorie-dense foods cost less and are more accessible than more healthful choices; portion sizes and pricing strategies encourage overconsumption; schools

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have become a commercial opportunity for the food industry; marketing to youth is powerful and relentless; physical activity is declining in everyday life, just to begin the list. Changing such defaults involves addressing the key drivers of obesity and offers new hope of affecting large numbers of people.

There are countless examples of powerful and beneficial effects of changing defaults. As one example, contaminated drinking water in some parts of the world and clean drinking water elsewhere drive rates of water-borne diseases. Behaviors of individuals are also affected by defaults. Choi, Laibson, and colleagues [5] studied pension plan enrollment by comparing: (a) companies where employees are enrolled by default but can opt out, and (b) companies where employees are not enrolled by default but can opt in. Employee choices are the same under both conditions, but rates of enrollment are vastly different: approximately 50% enrollment in the first year for companies where the default is not to enroll compared to near 100% when enrolling is the default.

A striking example of defaults in the health arena comes from research on organ donation. Johnson and Goldstein [6] examined the percentage of people agreeing to be organ donors in European countries where becoming an organ donor is the default in some countries but not others (as in the United States). In both cases, individuals can choose to be an organ donor or not, only the default differs. In the four countries using the U.S. model of not being a donor by default (Denmark, The Netherlands, the United Kingdom, Germany), an average of 15.2% of the population are organ donors. In seven countries where being a donor is the default (Austria, Belgium, France, Hungary, Poland, Portugal and Sweden), the average is 97.6%.

Changing defaults can be more swift and effective, and less expensive than approaching a problem by traditional means of treatment or through persuasion and education directed at individuals. New York City banned trans fats in restaurants, thus creating a more optimal default for people eating out. It would be difficult to imagine achieving the same result, even with massive resources, by educating consumers about trans fat, or to achieve the pension plan and organ donation results without changing defaults.

This article discusses how suboptimal defaults can become more optimal in five key areas pertaining to obesity in youth: framing the obesity issue, treating versus preventing obesity, schools and nutrition, marketing, and weight bias and discrimination.

Framing the obesity issue

People default to certain assumptions about what causes obesity, what it means for society, whether and how the issue should be addressed by the individuals who have it, and how institutions such as schools, insurers, and government should respond. These assumptions are influenced by prevailing societal frames and influence how people interact with

overweight individuals and the degree to which policies to change the environment will be supported.

Changing the frames may be one necessary step in changing social policy. Shifting from causative models centered on personal responsibility to more public health models, based in concepts of population risk and environmental determinants of diet and activity, may be necessary to change defaults. An ecological framework has been used to make this point about the framing of causative models [7,8].

The words chosen to describe an issue “frame” it, and as Lakoff [9] notes, add meaning and values to a message and determine how key parties respond. Beliefs about how government resources should be invested, how health professionals should respond to obese individuals, and support for actions to address obesity are influenced by beliefs about culpability for obesity, the role government should play in addressing health problems, and issues as fundamental as whether eating behavior is a private matter [10,11]. Who controls the frame is a matter of great importance.

There has been a struggle to control the framing of obesity, pitting the food industry and its allies against public health professionals. Two somewhat contradictory frames are promoted by the food industry and its political allies: (a) obesity has many causes, and hence, no food, food category (e.g., soft drinks, cereals), company, or industry is to blame, and hence calls for them to change are unfair and represent finger pointing; and (b) obesity is a matter of personal responsibility, and attributable more to physical inactivity than to food [12]. The solution that follows is to educate consumers about the importance of nutrition and physical activity and to implore them to try harder. With exceptions such as innovative work done by the Centers for Disease Control and Prevention (e.g., organize state health departments, address the built environment, explore the role of law in improving nutrition, bring together policy leaders), government’s response has been to develop unimaginative programs such as “Small Steps” [13], provide trivial funding for them, and thus lock in the status quo.

This personal responsibility frame blames obese individuals for what is a predictable response to toxic environmental conditions [14]. Even the staunchest proponents of the personal responsibility frame must admit it has been a failure at addressing the obesity problem. The United States has defaulted to this frame from the time obesity became recognized as a national problem in the 1970s, and prevalence has only increased. Pressing people to lose weight has not stemmed the tide, nor is it likely that any education campaign, no matter the resources invested, will have appreciable effect because it will be dwarfed by what industry spends to promote its products.

Recent empirical work on how American adults conceptualize obesity indicates that a substantial majority (78%) endorse the explanation that a toxic environment (poor food and activity conditions) is responsible for current levels of obesity [10]. This study found that most people hold more than one belief to explain obesity, including ideas that food is

addictive, obesity is a type of eating disorder, and that the lack of time to exercise and eat well contributes to the problem. An individual's support for different types of public policies (e.g., junk food taxes, improving school lunch, menu calorie labeling) is dependent on how that person views cause; stronger beliefs that obesity was due to environmental rather than personal causes predicts stronger support for policy change [10].

In some ways, it is much less important to ascribe blame for the obesity problem than to find solutions to it [15]. We agree that this would be ideal, but the ability to find solutions (e.g., government funding for obesity research), how policies are crafted, how litigation might be used, and what actions are expected of the food industry are highly influenced by perceptions of cause. Changing these perceptions to be consistent with scientific knowledge on the issue is a key imperative.

The question now becomes how to most effectively frame the obesity issue. Further empirical tests will be needed to develop and refine a core message, but a start is for the health professions to conceptualize *treatment* as a medical issue but *reducing incidence* as a public health matter. Table 1 describes fundamental differences between medical and public health models. An example of this frame is the characterization by Silver and Bassett [16] that the current food supply is unsafe by virtue of being “too salty, too fatty, too sugary, and too rich in calories, and there is simply too much of such food easily available” (p. 959). Efforts such as those in New York City to improve nutritional defaults (e.g., banning trans fats in restaurants, requiring calories to be listed on restaurant menus), make foods safer, make nutrition information available to the public, and represent the policy execution of a public health, policy-oriented frame.

Treatment versus prevention of obesity in youth

Treatment has been the prevailing default to dealing with obesity, in both adults and youth. With adults, cognitive-behavioral therapy, medication, and surgery are the empirically validated treatments [17,18] with cognitive behavior therapy the foundation for most programs. This approach teaches individuals to self-monitor, identify, and challenge dysfunctional thoughts, use problem solving skills, and address interpersonal stressors that lead to overeating. The approach had been refined over the past thirty years and has been combined with other approaches such as very low-calorie diets, medication, and intervention in primary care, but the trajectory of weight loss and regain is “remarkably consistent” with a rapid initial weight loss, typically reaching a plateau around 6 months, followed by gradual but continuous weight gain until reaching a stable weight “somewhat below baseline levels” [17,18]. Only bariatric surgery has emerged as a powerful, long-term weight loss treatment for obese adults [19].

Cognitive-behavioral treatment for obesity has been adapted for children and adolescents and is often delivered

Table 1

Framing and conceptualizing obesity with the medical model versus the public health model

	Medical model	Public health model
Basic frame	Personal responsibility	Public, government, and corporate responsibility
Assessment	Individual severity Who is affected	Population severity How many are affected
Etiology	Individual causes Biology or personal choice drive weight	Population causes Environment is a major driver
Response	Treatment Individualism Right to medical care Medical system intervenes	Prevention Collectivism Right to safe/healthy conditions Government and the private sector intervene

within the family context [20]. Whether treatment is provided to the family as a group, or involves parallel treatments for the child and parents, the involvement of the family has been associated with greater success in both the short and long term [21]. A meta-analysis of lifestyle interventions for the treatment of overweight children (typically between 6 and 12 years old) concluded that children are able to lose and maintain a modest amount of weight and that these approaches are superior to either no treatment or nutrition education [22]. Further, a randomized controlled trial of a family-based exercise, nutrition, and behavior modification program for children aged 8 to 16 years old succeeded in improving physical fitness, metabolic parameters, and modestly lowering the body mass index (BMI) [23].

There are compelling reasons to have compassionate, affordable, and effective treatments for obese adolescents and children, notably significant medical issues [24]. At the same time, treatment can have limited public health impact because intensive treatments are available to few and are expensive. It leaves defaults untouched for the vast majority of youth. The latter point is emphasized by Savoye and colleagues [23], who reported the results of an effective program but noted that “the expense incurred in operating such a program is substantial” (p. 2704). In light of these facts, prevention of obesity is the clear public health priority.

Schools as an important starting point

Schools can be an important piece of the obesity prevention picture, and can be instrumental in supporting parents in their efforts to raise healthy children by setting exemplary nutrition and physical activity standards, educating children and families, and shifting social norms. However, schools often create a negative food and activity environment, which at the very least sets poor defaults for parts of a child's diet but also fails to realize the opportunity schools provide. National survey data indicate that the school nutrition landscape is grim [25–28]. For example, in 2006, 98% of secondary schools sold soda, 78% sold cookies, and 69% sold potato chips [27]. Further, opportunities for physical

activity through the school day have been eroded for fear of taking time away from core academic subjects [29].

Schools offer an opportunity for addressing diet and obesity in youth because there is regulatory authority by national, state, and local officials. School-based food policies do make a difference. Students who participate in school lunch programs have better nutrition overall [29]. Policies prohibiting parents or students from bringing fast food into the cafeteria predict increased school lunch participation, whereas soft drink advertisements located near the cafeteria predict lower school lunch participation [30]. High school policies that limit student access to unhealthy food and ability to eat and drink outside of mealtimes are associated with lower student BMI [31]. Scheduling lunch periods too early in the day predicts higher a la carte sales [30] and a policy to prompt younger students to take fruit with lunch (rather than leaving them to help themselves) significantly increases fruit consumption [32].

Reviews of school-based randomized trials to address obesity have yielded mixed results: some interventions show positive effects, whereas others have found no effect [33–36]. Behavioral changes have been achieved more frequently than changes in student BMI. The most promising target behaviors are reducing television watching and limiting sugar-sweetened beverages. The strongest programs are designed to change both student behavior and the school environment [37].

In 2006, most school districts were required to write wellness policies addressing nutrition and physical activity to comply with the Child Nutrition and WIC Reauthorization Act of 2004. Early examinations of these policies are encouraging [38,39]. Many districts have taken the mandate seriously, but there remains significant room for improvement in both the quality of the policies and their implementation. In addition to local district efforts, many states and cities have passed school-based legislation to address the obesity crisis [40]. These most frequently limit the sale of competitive foods and beverages, but some also address other issues such as open campus policies. Studies are needed to understand which policies are most effective in producing change [41] and are most likely to receive political support [42].

A number of concerns have been voiced with respect to obesity prevention programs in schools. The first is that schools will lose money if they restrict or eliminate the sale of competitive foods. Research on the cost effectiveness of various interventions has begun to appear [43–46]. Most food service programs meet their operation costs through the sale of competitive foods. These items are lucrative because they are not offered at low cost (as are federal meal programs) and contracts negotiated with corporations (e.g., “pouring rights” contracts with beverage companies) often involve bonus payments for exclusivity. School boards are legitimately concerned about loss of revenue when curtailing the sale of these products. Although conclusive data are not yet available, existing research suggests that schools that decrease or eliminate competitive food offerings

do not lose money because of increased NSLP participation [29,47]. Because most of the cost of running a food service is in overhead and labor, increasing sales produces nearly pure profit.

A second concern is that restrictions at school increase the allure of restricted foods. Data from the child feeding literature have been used to suggest that restriction of desirable food leads to increased consumption when those foods become available, and this leads to eating disordered behaviors and overweight in children [48,49]. One alternative interpretation of this research is that parents of children who have difficulty self-regulating understandably respond by stepping in to help their children regulate, and thus appear to be “restrictive.” A study by Schwartz and Brody [50] showed that children increase their intake of a forbidden desirable food only when seeing it in a transparent container, suggesting that not having the food present could be a beneficial strategy. Other research has shown that decreasing the availability of unhealthy foods in middle school students did not produce compensatory increased intake of these foods at home [51]. There is currently no evidence that compensatory overeating occurs in response to limiting access to unhealthy foods at school.

A third concern is that emphasizing childhood obesity will prompt children and adolescents to engage in unhealthy weight control behaviors, leading to eating disorders. This is not supported by empirical evidence. First, in recent times of strong attention to youth obesity in the media and in schools, rates of eating disordered behaviors have remained stable. Second, recent genetic research has demonstrated significant heritability of anorexia nervosa and to some degree, bulimia nervosa [52,53]; thus, environmental factors are not the sole cause. Third, many aspects of treatment for eating disorders are consistent with recommendations for maintaining healthy weight. These include following a structured and healthy meal plan, reasonably monitoring one’s weight, and engaging in moderate and enjoyable physical activity [54,55]. Fourth, childhood overweight is a risk factor for eating disorders, so preventing overweight may prevent eating disorders. Two studies have provided convincing evidence that broad-based obesity prevention programs in fact decrease eating pathology [56,57], whereas another recent study indicates that decreasing competitive food offerings did not increase eating and weight concerns in students [51]. A review focused on this question concluded that childhood obesity prevention programs do not appear to have a negative impact on eating pathology [58]. The evidence to date supports the position that eating disorder and obesity prevention efforts need not be inimical, rather offer the opportunity to work toward a common goal.

BMI reporting in particular has come under fire in the media for its possible connection to eating disorders. It is important to distinguish between collection of BMI data and reporting of that data to parents or guardians. Collecting BMI data in schools is critical for tracking trends in child weight and for the long-term evaluation of obesity prevention

programs. In fact, many schools in the United States already collect these data as part of routine health screenings.

BMI reporting involves communicating information to parents, and has been initiated in a handful of districts and states. Legitimate concerns have been raised about how communication might take place, privacy and weight stigma issues, and helpfulness of the information. Research is needed to test the effectiveness of communication strategies (e.g., mail results home vs. give to students to take home) and different kinds of information (e.g., referral to a pediatrician vs. including advice in the report on modifying lifestyle factors). Sensitivity is paramount. However, BMI reporting has the potential to be a useful tool. There is evidence that BMI screenings can be done discreetly [59], and, contrary to media coverage, one study found significant parent support for the measure [60]. The issue must also be considered in light of the need to focus on behaviors rather than weight because: (a) all children, regardless of weight status, will have their health affected by nutrition; (b) it is important to not place more emphasis on physical appearance; and (c) it is essential to not contribute to issues of weight bias.

Food marketing to youth

A key environmental contributor to obesity among youth, perhaps one of the most suboptimal defaults, is food marketing [14,61]. Children and adolescents are exposed to massive amounts of marketing that promotes consumption of calorie-dense, nutrient-poor foods [61–63]. Compared to the research on children, however, far fewer studies have examined adolescent exposure to food advertising or the effects of that exposure [61,62]. Perhaps as a result, most proposed curbs on food marketing to youth, both self-regulatory and government imposed, attempt to reduce the amount of unhealthy food marketing seen only by children under age 12 [64,65]. Evidence suggests, however, that exposure to food marketing may also significantly influence adolescents, and do so at the time they are establishing life-long consumer and eating behavior patterns.

Young people, ages 15 to 18, watch over 2.5 hours of television per day [66]. Food advertising comprises 26% of all product advertising they see on television; 62% of this is for fast food restaurants and sweets and beverages, which are nearly all products of low nutritional value [67]. Whereas children's exposure to food advertising on television has declined, overall adolescent exposure to food advertising remained flat from 2003 to 2007, and their exposure to fast food restaurant advertising increased by 12% [68].

Youth exposure to other media increases as adolescents spend more time with the Internet, radio, music (e.g., CDs and MP3s), and video games [66]. Far less reliable methods are available to measure exposure to advertising in these media. A recent study by the Federal Trade Commission, however, documents food company expenditures on all forms of marketing based on subpoenaed marketing records [69]. In 2006, food marketers spent more (\$1.05 billion)

marketing to adolescents (ages 12–17) than to children ages 2 to 11 (\$870 million). Television advertising represented slightly over one-third of marketing expenditures on adolescent-targeted programs, followed by marketing in schools and stores, events marketing, and radio advertising. Almost one-half of the \$1.05 billion was spent to promote carbonated beverages, followed by restaurants (including fast foods), noncarbonated beverages, and candy/frozen desserts. Recent content analyses also document the prevalence of unhealthy food advertising on the Internet, through food company-owned Websites and advertising on other sites [70,71], as well as in other digital media [71].

It is good business for food advertisers to create adolescent consumers. Adolescents have the means and the opportunity to establish their own consumer behavior patterns, and therefore, represent a strategic opportunity to increase product sales and create brand loyalty. U.S. teens spent an estimated \$159 billion in 2005 [72], and the items they purchased most often included candy, soft drinks, and salty snacks [73]. Adolescents also influence their families' food purchases. Parents spend 60% more in the supermarket when shopping with their teenagers than when shopping alone [74].

Why then have proposed policies focused only on marketing that targets children? Television advertising is highly visible and easy to measure, and the concentration of unhealthy food advertising is higher on children's television than other forms of programming. In addition, concerns about the effects of children's exposure are based largely on consumer development literature that concludes that young children (under age 7 or 8) are unable to defend against advertising influence [75,76], supporting the argument that advertising to young children is inherently unfair. This ignores the reality that older children and adolescents continue to be susceptible to influence [77–79]. In addition, adolescents do exhibit greater understanding of advertising intent and more skepticism than do children [75,80], but many newer forms of marketing, including product placements, viral marketing and event sponsorships, are designed specifically to deactivate skepticism and other defenses against advertising that develop with age [81].

Additionally, in comparison to other media messages to which adolescents are exposed (e.g., tobacco and alcohol use, sexual permissiveness, and violence) [82,83], junk food advertising may appear relatively benign. The public health literature on alcohol and tobacco advertising, however, consistently demonstrates that adolescents are more susceptible than adults to influence and provides insights into the vulnerability of adolescents to food advertising [84]. The same developmental factors highlighted in this literature are also likely to increase vulnerability to food advertising, including reduced ability to inhibit impulsive behaviors and to forgo immediate gratification for longer term rewards, greater responsiveness to peer influence and image advertising, and an elevated risk of addiction.

Little research has been done on how best to protect adolescents from food marketing, and what has been done

often compares them to children and suggests less vulnerability [61,62]. Less vulnerable does not mean invulnerable, so the better comparison may be with adults (i.e., the question most often asked in the tobacco and alcohol advertising literature). Research agendas must be expanded to examine the impact of continuous exposure to messages that emphasize immediate rewards without concern for the longer term detrimental effects. Current models of marketing suggest that food advertising could also operate through mechanisms that even adults find difficult to defend against, for example, by creating brand imagery that associates unhealthy products with key motivations (e.g., happiness, affiliation, or achievement), or even acting as environmental cues to trigger impulsive purchase and consumption [85].

Food advertisers would not spend over \$1 billion marketing to adolescents if that investment did not pay out. Policy leaders and health authorities must consider adolescent exposure to unhealthy food marketing in *all* forms, consequences of that exposure, and potential solutions. Children are persuaded by marketing, and because unhealthy foods are marketed almost exclusively, the powerful educational milieu established by the food industry is highly suboptimal. Changing the marketing landscape offers the hope of improving message defaults.

Weight stigma

A key to changing the environment to better encourage healthy behavior is support for such changes among the public and those who establish policy. Weight bias, stigma, and discrimination erode support for policy changes when individuals are blamed for their weight and felt to “get what they deserve.” Addressing weight stigma could be an important part of the puzzle for changing defaults, but one must also consider the very real impact it has on the everyday life of those affected.

Weight stigma presents significant challenges for obese youth, affects how obesity is addressed in medical settings, and is one driver of social attitudes, which in turn, help shape public policies. Adolescents face weight stigma in multiple forms, including verbal comments, physical aggression, and relational victimization. Negative stereotypes toward obese peers begin early in childhood, as young as age 3 [86,87]. By adolescence, weight-based victimization is common [88]. Among adolescents, 30% of girls and 24% of boys report weight-based teasing from peers [89]. Among the heaviest students, prevalence rates increase to 63% of girls and 58% of boys. Unfortunately, peer victimization increases with body weight [90], leaving adolescents at the highest levels of obesity most vulnerable to stigma and its consequences. Longitudinal research with youths shows that weight category significantly predicts future victimization [91].

Weight bias leads to a range of negative consequences. A number of studies have demonstrated heightened psychological distress among youth who experience weight stigma, including vulnerability to depression [92–94],

anxiety [94,95], lower self-esteem [92,94], and poor body image [93,96–99]. Of note, body weight is not related to most outcomes after controlling for teasing, indicating that teasing more than weight itself leads to negative emotional consequences. Some research also shows that obese youth victimized by peers are two to three times more likely to engage in suicidal thoughts than overweight youth who are not victimized [88,92].

Weight bias may also impair social relationships in adolescence, leading to low peer acceptance and social isolation [100,101]. In a study of over 90,000 adolescents from the National Longitudinal Study of Adolescent Health, overweight adolescents were more socially isolated and nominated less as friends by their peers compared to average weight adolescents [102]. As BMI increased, students received fewer friendship nominations from peers. Another study found that obese adolescents spend less time with friends than thinner peers, and obese boys more often report that their friends do not care about them, even after controlling for grade level, socioeconomic status (SES), and race [103].

Finally, there are concerning implications of weight bias for physical health of adolescents. Overweight adolescents who experience weight-based teasing are more likely to engage in unhealthy weight control and binge-eating behaviors compared to overweight peers who are not teased about their weight, even after controlling for BMI and SES [104,105]. Prospective research with adolescents found that weight-based teasing predicted binge-eating and extreme weight-control behaviors at a 5-year follow-up, after controlling for age, race, and SES. These findings parallel a number of other studies documenting a positive relationship between weight-based teasing and eating disorder symptoms such as binge eating and bulimia [94,105–109]. More severe levels of binge eating behaviors are found among adolescents who report being upset by weight-based teasing [94].

There is some evidence that obese youth are less likely to be physically active because of weight stigma. Peer victimization among overweight youths has been linked to lower levels of physical activity [110], and weight criticism during physical activities is associated with negative attitudes about sports and lower participation in physical activity among overweight students [111]. Weight bias may even influence cardiovascular outcomes in adolescents. One study found that adolescents who reported unfair treatment because of their physical appearance (but not race) had elevated ambulatory blood pressure, even after controlling for factors like BMI, gender, race, physical activity, posture, consumption, and mood [112]. The health implications of weight bias on these and other cardiovascular indices are clearly important, and require additional research.

The pervasiveness of weight stigma and its consequences for obese youth pose serious threats to their quality of life. Efforts to prevent adolescent obesity must protect youth in the face of stigmatization, and ensure that interventions promoting healthy lifestyle behaviors do not perpetuate weight stigma through negatively focused health messages

[113,114]. Increasingly, researchers are calling for intervention efforts to address weight-related teasing and improve social support for obese adolescents [89]. Some have cautioned that obesity prevention messages targeting youth should avoid “individual” focused approaches that tend to blame the victim, which may heighten emotional distress [113]. The 2005 *Preventing Childhood Obesity* report, issued by the Institute of Medicine, also stated the importance of addressing stigma and suggested shifting the focus of prevention strategies to emphasize lifestyle behaviors that can be modified rather than on individuals and their physical appearance [1]. Encouraging healthy behaviors for all youth, regardless of body size, may be especially important in these efforts.

Schools also have an important role to play. Although many schools have policies to prohibit teasing and harassment, there is some evidence to suggest that overweight students feel that school policies are not being enforced [115]. Efforts to increase education and awareness of the nature and extent of weight bias in school settings may be needed to ensure that school-based policies recognize the prevalence and harm of weight bias, and that these policies are implemented effectively.

Parents can also be important advocates in efforts to promote bias reduction. Research suggests that bullying is rated as a top health concern by parents of youth who are overweight and obese [116]. Parents can help reduce weight bias by emphasizing the importance of improving health rather than thinness to their children, modeling appropriate language about body weight, challenging weight-based stereotypes, communicating tolerance of size diversity, and intervening when they become aware of weight-based teasing towards, or by their child.

It is unlikely that obese youth will be spared the negative consequences of prejudice without changes to the larger societal factors that reinforce weight stigma. The media is an especially powerful source of weight bias. Content analyses of children’s media show that overweight characters in television and film are depicted as unattractive, unintelligent, unhappy, evil, unfriendly, cruel, eating junk food, having no friends, and engaging in physical aggression in contrast to thinner characters to who are ascribed a range of positive attributes [117–120]. Several studies additionally show that media consumption among youth is associated with negative weight-related attitudes toward obese peers and increased likelihood of stereotyping an overweight target [121,122]. Given the amount of media consumed by today’s youth, it will be imperative to replace existing negative depictions of overweight characters with more positive portrayals of individuals who challenge weight-based stereotypes and communicate health promoting messages at diverse body weights.

Conclusions

Adolescents are exposed to conditions that exploit their developmental vulnerabilities, promote excess food intake, and discourage physical activity. These conditions are the

default for most Americans, but adolescents may be especially susceptible. Counting on discipline, personal responsibility, and restraint to hold up under such powerful conditions is wishful thinking, thus making it imperative for the nation to change default conditions.

Suboptimal defaults begin with social attitudes about the causes of obesity and perceptions of those afflicted. As a consequence, government, particularly at the federal level, has been slow to react. Officials too often speak about change but take actions to block it, and are prone to emphasize the personal responsibility frame that leads down a well-traveled but unproductive path. Furthermore, strong bias aimed at overweight individuals discredits those needing help and adds an additional layer of bias and discrimination to racial and social groups that are already marginalized.

Changing the social, economic, and political conditions that cause obesity will not be easy; it will take courage and determination from government leaders, nongovernment organizations, and scientists. Making schools an optimal (or at least safe) nutrition and activity environment, making drastic reductions in the marketing of calorie-dense, nutrient-poor foods, and taking steps to reduce weight bias are discussed in this article as examples of changing defaults. Other important defaults exist such as the economics of food, affected by policies such as agriculture subsidies, that makes healthy food more expensive than high-calorie alternatives.

Health professionals and scientists can be a constructive and powerful force in this picture. They can carry out strategic research that addresses key policy issues and urge with their persuasive and credible voices that social, political, and economic conditions must change prevent to obesity. Thus, bold and decisive actions become more possible.

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