SYMPOSIUM

Actions Necessary to Prevent Childhood Obesity: Creating the Climate for Change

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A Very Real Need for Social Change

After years of near total neglect, the problem of childhood obesity is now in the limelight. Terms like "epidemic," "crisis," and "emergency" are used frequently when describing the trend. Progress is defined with strong language (e.g., the need for a "war" on obesity) and fueled by statistics such as the observation that this generation of children will be the first to live shorter lives than their parents.[1] Multi-disciplinary journals such as the *Journal of Law, Medicine & Ethics* have dedicated symposiums to the issue,[2] and conferences have been convened not only by health professionals but by government agencies,[3] the food industry, and even professionals who market to children.[4] The seriousness of childhood obesity is no longer in doubt, and finally attention has turned to the more complex question – what must be done?

Dozens of possible remedies have been proposed, with various solutions aimed at individuals, parents, government, and institutions such as schools, media, and the food industry, as well as at broad social forces, including the economics of food and physical activity.[5] Research must progress far beyond its current state to evaluate both the general effectiveness and cost-effectiveness of specific interventions.

Often ignored in this discussion of tactics are the factors necessary for the uptake and implementation of approaches that have the *potential* to change public health. The potential is only realized when change is implemented on a broad scale, requiring certain conditions be in place. For instance, taxing cigarettes is a powerful means of curbing tobacco use, but for this potential to be exploited, there must be public and political will to institute these taxes.[6] The political will is weak at the federal level, and states vary widely – Rhode Island has the highest state tax in the nation ($2.46 per pack) and South Carolina the lowest (seven cents per pack).[7] Studies to identify how to generate support for higher and more uniform taxes could be extremely valuable.

Awareness and will of the general public as well as in federal and state governments must increase to permit the changes necessary to prevent childhood obesity. This requires full understanding of barriers to change and an analysis of the factors that will promote change. Both barriers and facilitating factors vary region by region and country by country, but there are common

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threads that can be identified and harnessed. Scholars are beginning the necessary analyses, as exemplified by the political analysis of Rogan Kersh and James Morone, who identify the historical triggers to government taking action on health.[8] Changing conditions will be more challenging than understanding them, and may require an entire social movement.[9] Certainly there must be reasoned and well-funded efforts to change both social norms and political action. It is our belief that legislative and regulatory action will be needed if substantial progress is to be made on the childhood obesity problem.

The aim of our paper is to discuss the factors that must be considered if broad-scale public health action to curb childhood obesity is to take place. We seek to understand the presence or absence of social action in light of key social values. Using the example of the United States, we discuss how concepts of individualism, freedom, free will, personal responsibility, freedom of speech, and the principles of the marketplace are central to the dialogue.

Framing the Issue: Personal Responsibility vs. a Toxic Environment

How the obesity issue is framed is of the utmost importance to how it is addressed. Who or what is perceived as responsible for the genesis of obesity is a prime determinant of how obese individuals are received by society and what actions are considered appropriate for both treatment and prevention. A disconnect between the real cause and perceived cause, or between what might truly prevent obesity and perceptions of best approaches can lead to inequities, such as weight bias, and diversion from actions that could improve public health.[10] We risk investing time, money, and effort into interventions based on the belief that obesity is a matter of personal responsibility, and risk missing the opportunity to make environmental changes that will have a greater impact.

Historically, obesity has been blamed on the individual. It is still the case today that a failure of "personal responsibility" is evoked as obesity's cause, and imploring individuals to change is often the implicit and explicit solution. A key struggle is occurring between public health experts and the food industry and its political supporters. Public health experts want to focus on changing environmental factors that promote better health.[11] The food industry and our current government want to focus on encouraging individuals to think about "calories in and calories out" and taking "small steps" to change.[12]

According to cognitive scientist George Lakoff, no message is neutral because words chosen to describe an idea convey meaning beyond the facts.[13] For example, the abortion debate has "pro-life" and "pro-choice" sides. These phrases represent a battle over the frame – neither side recognizes the other's frame (i.e., no one wishes to be anti-life or anti-choice.) One position affirms life, and the other affirms choice, which are both appealing public values.

The frame we propose for the discussion of obesity is the "toxic environment."[14] "Toxic" is a strong word, but defensible in that modern food and activity conditions contribute heavily to the occurrence of illness. The recent increase in obesity and its associated diseases is well documented.[15] We believe that this epidemic is the predictable consequence of environmental changes that have occurred over the last thirty years.[16]

What is the Toxic Environment?

When we use the term "toxic environment," we are referring to several layers of the world around us that interact with key elements of our biology. Human biology appears completely at odds with our current need to decrease food intake. The following findings suggest that the human race evolved in order to survive famine, not to stay thin when there is too much food. Humans are innately predisposed to prefer sweet foods, and infants quickly learn to prefer the flavor of high fat and high salt foods.[17] Humans will eat more when there are a variety of flavors available (when we eat large amounts of one flavor we experience what Barbara Rolls calls "sensory specific satiety").[18] Children and adults will eat more when larger portions are served. Brian Wansink has done a series of studies that document that people will eat more of a food (e.g., candy) when they can see it clearly (e.g., in a clear versus opaque jar) and when it is close to them (e.g., on their desk versus a few feet away).[19] Taken together, the key drivers of human over-consumption are flavor, variety, large portions, visibility, and proximity.

These factors interact with the current environment in several ways. Driving down the highway, we see dozens of drive through windows at fast food restaurants, billboards with advertisements for inexpensive snacks, and soft drinks at drugstores, and when we stop for gas, shelf after shelf of high-fat and high-sugar snacks at gas station mini marts. It is no wonder American spending on fast food has increased eighteen-fold since 1970.[20] A variety of good tasting snacks and meals are now highly visible and accessible for most Americans, and there is also evidence that since the 1970's, portion sizes have gotten larger, and far exceed federal guidelines.[21] These foods are also extremely convenient compared with home made meals, fast food and packaged foods are easier to obtain and ready to eat immediately, as they require little preparation.

Americans have responded by eating at home less frequently and eating out more. According to fact sheets on the website of the National Restaurant Association, there are currently 925,000 restaurants in the United States. Average daily restaurant sales in 2006 were $1.4 billion.[22] Research studies that have examined the health impact of eating out instead of eating at home have consistently found that when adults and children eat restaurant foods, they consume more calories, more fat, more fried foods, more soft drinks, fewer fruits and vegetables, and less fiber.[23] Clearly, the increase in eating away from home is hurting the American diet.

In addition to the omnipresence of unhealthful foods in our current environment, these foods are also less expensive than healthful choices. One factor that contributes to the cost disparity is that processed foods are less expensive to produce and less perishable than more healthful fresh foods such as produce, dairy products, and lean meats. There are powerful economic forces that promote the consumption of unhealthful foods in our current environment.[24]

Another layer of the toxic environment that promotes the consumption of unhealthful foods is their heavy promotion by the food industry. The food industry is massive; in 2000 it generated nearly $900 billion in sales. As Marion Nestle points out, the fundamental paradox facing the food industry at this time is the need to sell more food to a population that needs to be eating less.[25] One industry tactic is focusing on increasing market share by gaining brand loyal customers, which explains their focused and relentless efforts to market their brands to children.[26]

Another contributor to the toxic environment are government agriculture subsidies for specific crops in many parts of the world, including the United States. These subsidies guide production, which in turn influences the behavior of the food industry.[27] For example, in the United States, corn production is heavily subsidized, which makes the production of high fructose corn syrup extremely inexpensive, leading to its common use in processed foods. This has been hypothesized as a contributor to the obesity epidemic because the use of HFCS in our food has essentially replaced sugar and is now found in thousands of food products.[28]

Finally, while the current food environment promotes over-consumption of calorie-dense, nutrient-poor foods, the physical activity environment creates sedentary behavior in the majority of the population. Over the last few decades, more adults have transitioned to sedentary jobs as machines have been created to replace physical labor, and technology has allowed us to process information without ever leaving our chairs.[29] Children are also far less active than they were thirty years ago. Most children spend less time walking to school and playing outside; instead they spend more time working and communicating on the computer, playing video games, and watching television.[30] These behavior changes are considered to be the result of a cultural, technological shift, and living in communities that require travel by car instead of by foot or other forms of transportation.[31]

All of the factors described above converge to create an environment that produces the following "balance sheet" for healthful and unhealthful foods.

Table 1

Balance Sheet of Healthful vs. Unhealthful Foods

UNHEALTHFUL FOODS	HEALTHFUL FOODS
Better Tasting (i.e., higher in sugar, fat, and salt)	Worse Tasting (i.e., lower in sugar, fat, and salt)
Highly Accessible	Less Accessible
More Convenient	Less Convenient
More Convenient	Less Promoted
Less Expensive	More Expensive

Evidence for the Toxic Environment as the Prime Causal Agent

Several lines of research support the argument that one's environment is the key factor driving body weight. One example is found with the Pima Indians, who divided when one group migrated to Arizona and the other stayed in Mexico. The Arizona Pimas weigh significantly more than their Mexican counterparts and have rates of Type II diabetes among the highest in the world (38%), while the rate is only 6.9% among the Mexican Pima.[32]

The phenomenon of weight gain as a result of moving to a new environment has also been demonstrated in studies that examine siblings where one remains in a native, eastern country, and the other migrates to a western culture. In one study of people from Punjab, India, the siblings who remained in India had average BMIs of 22.9 for men and 22.7 for women, while the siblings who migrated to West London had average BMIs of 26.8 for men and 27.4 for women.[33]

A number of animal studies confirm the obesegenic impact of exposure to what researchers call a "supermarket" or "cafeteria" diet, which is a highly varied diet high in sugar, fat, and sodium.[34] Anthony Sclafani found that when rats are given unlimited access to a nutritious diet, they appear to be able to self-regulate their food intake and remain at a steady weight. However, when they are given access to a cafeteria diet high

in sugar, fat, and salt, they triple their body weight.[35] These studies suggest that our internal self-regulation mechanism that keeps us from eating too many calories for our bodies can become dysfunctional when we are exposed to these highly palatable foods.

More evidence for the influential role of the environment is the rapid rise in the prevalence of obesity in the United States. The gene pool did not change between 1970 and 2000, yet the overall rate of being above the 85th percentile in BMI for children doubled in these years (from 15% to 30%), and the rates of being above the 95th percentile tripled (5% to 15%).[36] Evidence reviewed above supports the hypothesis that the environment is driving the changes in obesity rates.[37]

Moving the Frame

Reversing the obesity-generating environment presents considerable challenge because it is woven into economics, politics, and fundamental ways of life. Consider several unfortunate facts: a) it costs more in the U.S. to eat a healthy than unhealthy diet; b) poor neighborhoods have fewer healthy foods available; and c) foods in poor areas cost more than the same foods elsewhere.[38] A strong link between poverty and obesity comes as no surprise.[39]

Scientific support for the existence of a toxic environment does not mean the concept will be embraced, or that the policy changes it suggests will be supported. This makes shift of the frame essential and gives considerable power to those who control the frame. While most individuals agree that the environment has changed and remember childhood consisting of playing outside, having few food choices at schools (and no vending machines), eating out less often, and having more family meals, many still believe obesity is the consequence of personal failing, even obese people themselves.[40]

Two features are prominent in this struggle for the frame. Foremost is the "truth." As reviewed above, there is evidence of environmental changes which are plausible causes in the rising prevalence of obesity. In contrast, there is no evidence documenting an epidemic of decreased personal responsibility over the last thirty years. When it comes to health behavior, however, the evidence supports the position that people have become more, not less, responsible in recent years. An examination of the surveillance data collected by the Centers for Disease Control on the health risk behaviors of American adolescents suggests that between 1991 and 2005 there were significant decreases in the percentage of students who reported a number of dangerous health behaviors. For example, fewer adolescents reported that they "never" or "rarely" wore a seat belt, they "never" or "rarely" wore a motorcycle helmet, or they rode with a driver who had been drinking alcohol. Further, there was also a decrease in the number of adolescents reporting that they drove when they had been drinking, that they had smoked cigarettes, used alcohol, or had unprotected sexual intercourse.[41]

The frame we believe most constructive to advancing public health embraces the concept of personal responsibility, but also asks what has eroded the sense of responsibility to such an extent and how can we as a society change to promote greater responsibility? In other words, how can healthy behavior become the default?

The Damaging Consequences of Weight Bias

The prevailing emphasis on personal responsibility for obesity can divert attention from needed public health interventions, and also leads to widespread stigma directed at overweight individuals. Studies with both adults[42] and children[43] have shown that overweight individuals are subject to bias, teasing, and ridicule and the resulting discriminatory actions of others.[44] As a consequence, obese individuals generally earn lower wages (with equivalent qualifications),[45] and are also at a distinct disadvantage in health care[46] and educational settings.[47]

Those rationalizing the bias and discrimination, believing that negative treatment is deserved, may also believe that stigma should not be changed because it motivates people to lose weight. However, current research suggests that the opposite is true; weight bias may exacerbate obesity through depression and binge eating.[48]

The American philosophy of individualism is at play in this context of bias. The notion that obesity is controllable becomes easier to accept in a climate of individualism. Christopher Crandall and colleagues conducted a number of studies examining attributions of and attitudes towards obesity. They have found that the stronger the belief that obesity is controllable, and that obese people are responsible for their weight, the higher the level of prejudice.[49] These investigators found that people in traditionally individualistic countries (the United States, Australia, and Poland) exhibited greater prejudice against obese people than those in traditionally collectivist cultures (Venezuela, India, and Turkey).[50]

Erasing weight bias is an important goal and may go hand in hand with establishing realistic societal views about what is causing obesity. Social justice is at issue, but in addition, bias may be one of the factors that link obesity with negative health consequences and hence health care costs. Figure 1 presents a hypothetical series of associations that could potentially occur. The necessary work has not been done to establish these links, but work on race bias and issues such as blood pressure reactivity suggest the issue is worth pursuing.[51]

Transitioning from Medical vs. the Public Health Approaches

One benefit of an environmental frame is that it shifts focus from medical to public health approaches. The medical model frames childhood obesity as a disease or illness that strikes individuals due to internal and external causes, while the other frames it as a disease that strikes a population as a consequence of individual vulnerability combined with exposure to environmental elements. As listed in Table 1, the model chosen has implications for determining the extent of the problem, its etiology, and deciding who is responsible for responding to the problem and what that response should include.

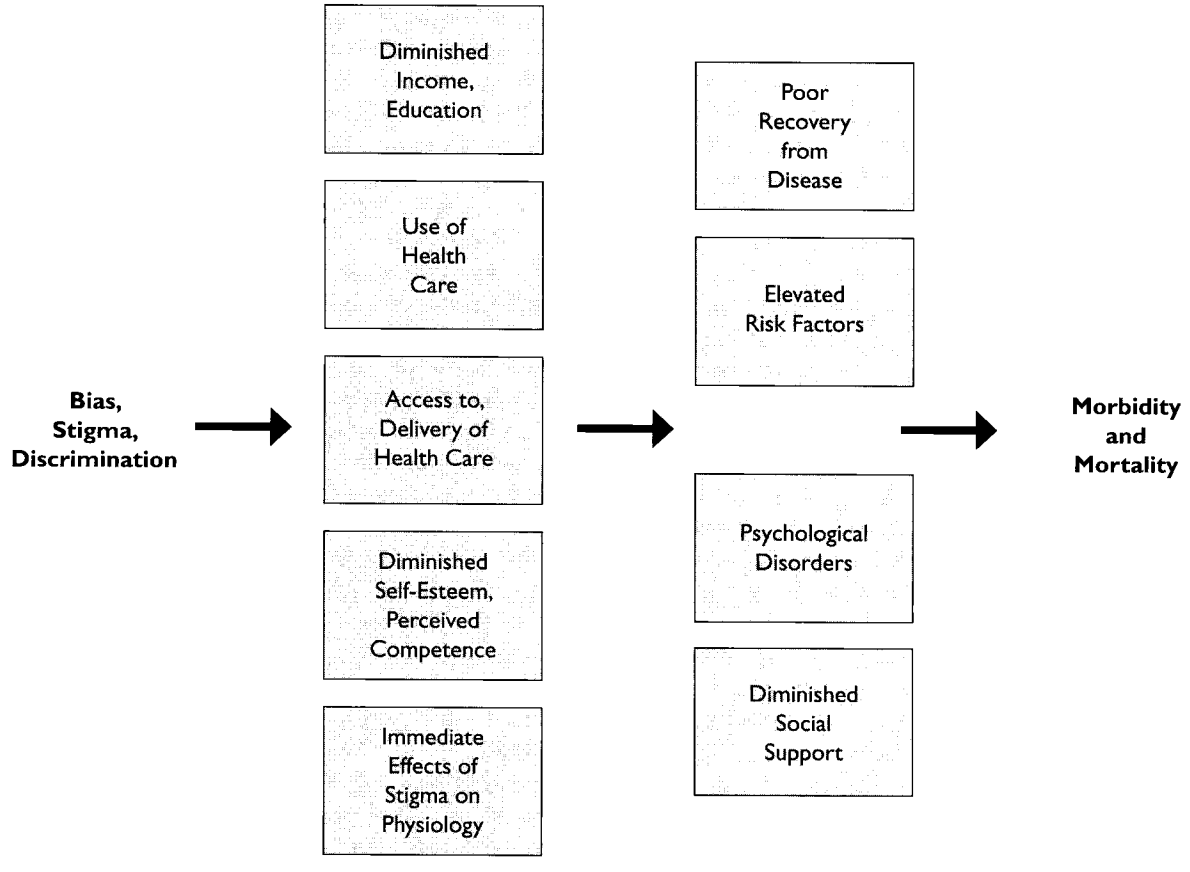
Medical Model

When viewed within the medical model, childhood obesity is an individual child's physical problem identified by a health professional and requiring individual treatment. The severity of the problem for each individual is assessed, and treatments are used to meet the needs of the individual. Resources are allocated to improve identification and treatment of the problem, particularly research on improving the success of clinical services.

Historically, the medical model approach has been used to address childhood obesity. Researchers and clinicians have developed individual and family treatments for childhood obesity. The treatment has been essentially a child version of adult cognitive-behavioral treatments. The latter is designed to teach individuals how to change their eating and exercise behaviors through self-monitoring, identifying and challenging dysfunctional thought patterns, learning problem solving skills, and addressing interpersonal stressors that lead to overeating.[52] Even many interventions that are delivered to large numbers of children, for example through schools, involve education on how one can take responsibility for making healthier food choices and increasing physical activity.[53] People are encouraged

Figure 1

A hypothetical scheme representing possible ways that the experience of bias and discrimination may be linked to important health outcomes.



to change their own personal and home environments (known as "stimulus control" in the cognitive-behavioral literature), but the responsibility for making that change falls to the child and his or her family. Inability to change is viewed as evidence of irresponsibility, not inadequacies of intervention or recognition that the environment exerts too powerful a force.

Public Health Model

When childhood obesity is viewed as a public health problem, an entirely different strategy is suggested. Studies address epidemiologic questions (e.g., how many people are affected), identify causal factors for the population, and seek broad changes that are feasible and will have real impact on prevalence. Public health organizations are responsible for ensuring the safety of the public, and environmental changes, such as regulating the sale or use of a product, are made by the government or other authorities. The public benefits from these changes automatically as the environment improves. Change may involve work to change behavior (e.g., anti-smoking campaigns combined with high tobacco taxes), but may not require the involvement or even awareness of the individual (e.g., safe drinking water).

The difference between these two models can be illustrated by approaches to reduction of dental cavities. When society is faced with widespread problems of childhood dental caries, a medical approach would have identified children with cavities, treated the problem, and perhaps passed along encouragement to floss and brush. The public health approach was to put fluoride in our tap water. Government-enhanced drinking water became the vehicle through which the intervention occurred. This is one example of a silent but powerful public health intervention that did not require individual behavior change yet led to a profound change in public health.

Stealth Health

Repairing the toxic environment will require both overt and subtle approaches. Some actions might include reformulation of foods by the food industry. Many food companies have introduced healthier products over the last few years. It is rare that a company not offer at least a few better options. Changing existing foods might also be a powerful means of improving public health. Two examples of reformulation are the move in 2003 by Frito Lay, the world's largest snack food manufacturer, to remove trans fats from all products, and the 2004 General Mills pledge to use whole grains in their cereals. Both companies have used these changes as evidence of a commitment to improving nutrition.

Time and research will determine whether these changes are meaningful and whether there is a health impact. While the Frito Lay and General Mills reformulations described above did not change calorie amount, people who do eat the products should be getting somewhat better nutrition. The "wild card" is how humans respond to the reformulation of their favorite products. If a consumer maintains consistent consumption of a healthier version of a product, some benefit should occur. But if a person believes the revised formulation gives permission to eat more of the product, the impact might be negative. While this "Snackwell phenomenon" has been discussed extensively in the popular press,[54] to our knowledge there have been no scientific studies assessing the overall public nutrition impact of reformulating foods in this way.

A related issue is that calling a product healthy may have an unintended negative effect if consumers believe its flavor has suffered.[55] In addition, consumers underestimate their caloric

Table 2

Framing Obesity with the Medical Model vs. the Public Health Model

	MEDICAL MODEL	PUBLIC HEALTH MODEL
Assessment	Individual Severity	Population Severity
	Who Is Affected	How Many Are Affected
Etiology	Individual Causes	Population Causes
	Biology or Personal Choice Drive Weight	Environment is a Major Driver of Prevention
Response	Treatment	Prevention
	Personal Responsibility	Public/Social Responsibility
	Individualism	Collectivism
	Right to Privacy	Right to Safety and Health
	Medical System Intervenes	Government and the Private Sector Intervene
	Fundamental Attribution Error	Empathy and Altruism

consumption significantly more when considering foods labeled "healthy."[56] This raises an important and testable question: Under what circumstances should silent public changes be made?

The phrase "stealth nutrition" has been used to describe efforts by parents or food service directors to work more nutritious ingredients into children's meals.[57] The next step may be for large companies to coordinate efforts to reformulate their products so that gradual healthy changes may be made over time, resulting in better nutrition without a dramatic change in taste. For example, if every company decreased the sodium in their products two percent a year for the next ten years, the shift may not be perceptible to consumers, but the positive impact on public health could be significant with relatively little effort and expense incurred by industry and no willful behavior change needed by the public. Research comparing strategies such as this to the cost and outcome of an education program designed to teach consumers how to achieve a twenty percent decrease in sodium intake should be undertaken in the near future.

The Free Market and the Role of the Food Industry

A key element of American capitalism is the right of individuals and groups to trade in a free market, driven by supply and consumer demand. This argument emerges frequently when food companies are criticized for marketing unhealthful foods and respond by claiming they react to demand, or further, that their responsibility is to offer choices to consumers. Arguments that their right to create and market foods be curtailed in any way evoke cries that freedom is being usurped and that the basic tenets of free enterprise are being compromised.

The idea of food reformulation mentioned earlier raises a number of key issues. Reformulation of all foods to decrease fat, sugar, or sodium content *could* be mandated by government, but, is not – the hope being that consumers will demand these choices, and the free market will respond and act in the public's best interest because consumer's preferences for healthy choices will maximize those factors that are important to them. In this vein, if enough consumers value a healthy lifestyle, a market for reformulated foods will thrive and adept companies will meet the new demand for healthy foods. Currently, there is a subset of people who are demanding healthier foods to which the industry is responding; the problem is that these "healthy" foods are presumed to taste worse by many consumers,[58] therefore, companies continue to make the higher calorie or higher fat versions as well. If public health were the driving force behind the creation of healthy food alternatives, actions would be taken to that ensure comprehensive reformulation would occur rapidly across the span of food companies, rather than as a specialty item for consumers who consider themselves "dieters."

While there is no proof that broad-scale reformulation would have sufficient benefit to justify taking action, the fact that the issue is not discussed in government circles is a sign that the U.S. defaults to individualistic rather than collectivistic philosophies, and that public health is seldom the primary concern. This is a key challenge for the field of public health, making the task of persuading both the public and policy makers of the appropriateness and importance of interventions one of the most important steps in this process. There is a need for research on how to frame the obesity issue in order to gain support for public health interventions.

In his paper on how Americans have historically assigned responsibility for health, Howard Lighter states,

> The timelessness and persistence of holding the individual person responsible for his or her own health status has its genesis in one the of the most distinguishing historical features of American culture and politics, namely the extraordinary emphasis on individuals rights and responsibilities.[59]

We believe the path to progress is not disputing the fundamental belief in responsibility, but embracing it and developing public health intervention in its service. Maximizing responsibility is possible only when the environment supports it.

This case is more easily made when the focus is children rather than adults. American culture readily supports the protection of children by restricting the marketing of tobacco and alcohol and by mandating immunizations, the use of safety restraints in automobiles, and more. Successfully framing the childhood obesity issue as defending children's health and basic human right to nutritious food opens the door to novel and powerful public health approaches.

Relevant Psychological Concepts

There are a number of psychological concepts relevant to understanding how the obesity problem is framed. These include the fundamental attribution bias, empathy, and altruism. First, the "fundamental attribution error" is a well-studied psychological phenomenon that helps explain why it can be difficult to persuade the public that broad, environmental intervention is necessary to prevent obesity.[60] This belief system leads individuals to attribute their own success to internal and stable strengths (e.g., if I get a good grade on a

test, it's because I am smart and studied hard), but to attribute success in others to external circumstances (e.g., you got a good grade because it was an easy test). Conversely, negative events happening to us are attributed to external forces (e.g., I am late because of bad traffic) but happening to others are a result of internal weakness (e.g., you are late because you are lazy and inconsiderate). Obesity is considered bad, so when others have the problem, they are thought to be deficient.

People who succeed in the face of adversity are revered because they have triumphed over difficult circumstances, even ones considered self-imposed. Success stories of people who have lost weight in large amounts, before and after photos in diet ads, and the wild promises of diet pills, potions, and products reinforce the belief that *personal* triumph is the answer to the obesity problem.

Two other relevant psychological concepts are those of empathy and altruism. People who are able to put themselves in another person's shoes are most likely to be altruistic and to place another's needs first. A food-related example is the decision of school districts to ban peanuts from the school environment. Here, the needs of the few allergic children are placed before those of the vast majority of children with no peanut allergies. Collective empathy for the vulnerable children allows the protective policy.[61]

The reaction is much different to obese children and their parents. Empathy is in short supply, and suggestions to protect obese children by removing junk food from schools are predictably greeted by ridicule of the parents and their children, claims that the government and the school boards should mind their own business, and parents should teach their children to be more responsible.[62]

Countering the fundamental attribution bias and evoking greater empathy and altruism will be important to mobilizing support for policies to prevent childhood obesity. Research on these topics is generally confined to the social psychology literature, and individuals designing interventions for the prevention and treatment of childhood obesity would benefit from an enhanced appreciation of the psychological factors involved. Efforts to increase communication between researchers who study persuasion and health professionals, such as joint conferences and articles in wide-reaching multi-disciplinary journals, would be useful to develop strategies to gain public support for policy changes.

Where Do We Go From Here?

A number of implications result from the discussion above. Some of these break down into broad questions about what might be done to prevent obesity and others about how potentially useful approaches can be adopted widely. Only recently has *what to do* been considered, and still relatively little has been decided. Even less has been decided about *how to make things happen*. The urgency is even greater given the powerful forces that are stopping things from happening, exemplified by the highly funded and orchestrated effort of the National Restaurant Association to block state efforts to require calorie labeling on restaurant menus.

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"Selling" the Environment as the Cause of Obesity

Public support for environmental and structural changes, such as banning soft drinks from schools, is growing. As discussed above, there are many environmental factors that contribute to childhood obesity, making it necessary for dramatic interventions to change the environment, such as banning advertising to children and changing the structure of government subsidies to support healthful foods. Support for change will rise with increased public awareness that the environment is the key causal agent in obesity.

To change public opinion rapidly and decisively will require two efforts. The first is a concerted research program on framing and persuasion to develop the most effective messages. This program would involve testing the power of different messages and frames to gain public support for the idea that the environment is responsible for the increase in obesity. Once effective messages are identified, they can be tested for their effectiveness with different subsets of the population. This information could then be used by policy makers to gain support for public policies to address obesity. The second will be a campaign to use these messages to gain support for needed programs. These two steps took place in the tobacco arena, unfolding over a period

of many years. A more systematic and compressed effort is needed in order to immediately curb childhood obesity.

"Selling" the Concept of Healthy Behavior as the Default

Once individuals orient their focus on healthy conditions as the default, a number of potential environmental changes can be considered seriously. If school is to be an environment in which children are exposed to only healthy conditions, the presence of soft drinks, vending machines, a la carte items in cafeterias, and physical education programs take on new meaning. The "health by default" concept is likely to garner considerable support for public health measures for prevention.

In selling this concept, it will be important to appeal to the cultural values of the target population. In the U.S. these will include individualism and resistance to being told what to do, particularly by government. We argue that an environment that creates ill health in children usurps an individual's liberty and interferes with the right of children to be healthy and happy. An environment that maximizes health enhances liberty.

Highlighting Programs that have Been Effective

Many trial programs in schools, communities, and other settings have been implemented with the hope of changing diets and reducing the risk of obesity.[63] A striking example of triumph is the North Karelia program undertaken by Pekka Puska and colleagues, which was launched almost simultaneously with three major community heart disease prevention programs in the U.S.[64] The Finnish and American programs included community mobilization, social marketing, school-based health education, worksite health promotion, screening and referral of those at high risk, education of health professionals, and direct education of adults.[65] The key differences were that the North Karelia program also included mandated changes such as very strong anti-smoking legislation. The American programs had limited or no effect on diet, weight, and cardiovascular disease, while the North Karelia program showed impressive changes.[66] The key lesson is that education alone has little impact while change in an environment generate better results.

Evaluation of Grass-Roots Movements

Innovation in improving food and activity environments is presently occurring at local levels, but these programs are rarely evaluated and therefore their positive effects may be limited. Farm to school programs, community supported agriculture, organic gardens in schoolyards, local biking and walking trails, rooftop gardens, and farmers markets in inner cities are a few of the local approaches that hold promise.[67]

We believe that substantial funding to evaluate these programs could greatly accelerate progress, but will require creativity from a federal agency or foundation to break the usual mode of investigator initiated research.

Empowering and Organizing Parents: The Gatekeepers Coalition

Parents are a potentially powerful voice in the fight against childhood obesity. Their passion for protecting their children and their ability to create change locally and even nationally can be harnessed, we believe, to help with preventing childhood obesity.

Parents often form groups to raise money to support research on diseases that have afflicted their children, but sometimes have organized groups to change public policy. Mothers Against Drunk Driving (MADD) is a good example. The group fundraises, educates, and lobbies for policy change and is a visible presence in the alcohol abuse domain.

To date, there have been many – although scattered – prevention efforts by parents, health professionals, and school administrators to improve the food environment in schools. Organizing these efforts into a national movement could create a new, important, and influential presence. We propose a coalition called Gatekeepers that would work to change environments inside and outside the home.

The food industry and its allies often state that parents must be the gatekeepers, implying that parents are directly responsible for their children's obesity and that the environment is not. There is benefit to considering parents as gatekeepers, but with this label must also come the power and tools to make change. A Gatekeepers coalition could generate power in numbers and potentially form an important voting block. It could work for legislative change at local, state, and national levels, interact in sophisticated ways with the press, and be funded sufficiently through grants and public support to hire communications and lobbying experts.

Gatekeepers could also work with parents to change home environments. This will require message clarity, specific education campaigns for interacting with children around food, and tools for creating generally healthier homes. Parents can be encouraged to manage their home environments as well as prevail over negative external influences that undercut their efforts.

One very important message to send clearly that now undermines progress is that of balance and moderation. This message is pervasive because of collusion, whether intended or not, between the food industry

and America's leading nutrition organization, the American Dietetic Association (ADA). The message states that any food is acceptable in moderation, that all foods can be part of a balanced diet, and that there is no such thing as a good or bad food.

While seemingly benign, this message may undermine public health because it implies that policy should keep hands off the marketing of specific foods, such as soft drinks or fast foods, and that restricting access to any food is not acceptable. It likely confuses the nutrition messages for parents because "moderation" is not defined. Is moderation going to a fast food restaurant once a week, a month, a year? Is it a half, three-quarters, or one cup of sugared cereal? Is it having candy on Halloween, Christmas, Valentine's Day, Easter and a birthday? What about every child's birthday at school? How much candy is the right amount – one piece, ten pieces, or one hundred? This ambiguity is part of our current toxic environment.

The message interferes with parents' confidence in setting strong limits on what their children can and cannot eat. A parent who doesn't allow his or her child certain foods (no sugared soda, for example) could be accused of being the "food police" and may even be told he or she is promoting eating disorders. This is myth; there is no evidence that raising children in a home that does not serve specific foods leads to eating disorders later in life.[68] From a public health perspective, it is important that a clear and consistent message be created, so parents feel empowered to maintain a healthy environment in the home and that such a message be widely conveyed in order to compete with the balance and moderation frame promoted so heavily by the food industry.

Summary

Modern conditions have created an environment, which makes unhealthy behavior the default and childhood obesity a predictable and understandable consequence. This underscores the need for changes in the environment. Public opinion has shifted in the past several years so that now a majority of people support environmental changes such as restricting food advertising to children, restricting soft drinks in schools, and requiring calorie labeling on restaurant menus. There is great opportunity at this moment, but also great challenge.

A prime challenge is to discover which interventions, policies, or programs will have the greatest impact. This will require a major research effort, one much larger than is now being funded by our government. It will involve sensitivity to global factors that affect diet and activity and take into account broad social forces such as economics and the influence of industry.

As this challenge of finding what works is being met, a simultaneous effort must be mounted to make the needed changes acceptable such that uptake and implementation are high. The task of protecting and promoting public health is not finished with the publication of a journal article. Too few people are working on this fulfillment part of the equation. This is a key gap to be filled if meaningful progress is to be made in preventing a problem as important and devastating as childhood obesity.

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