

doi: 10.1377/hlthaff.2009.0739
HEALTH AFFAIRS 29,
NO. 3 (2010): 378-386
©2010 Project HOPE—
The People-to-People Health
Foundation, Inc.

By Kelly D. Brownell, Rogan Kersh, David S. Ludwig, Robert C. Post, Rebecca M. Puhl, Marlene B. Schwartz, and Walter C. Willett

Personal Responsibility And Obesity: A Constructive Approach To A Controversial Issue

Kelly D. Brownell (kelly.brownell@yale.edu) is director of the Rudd Center for Food Policy and Obesity and a professor in the departments of psychology and of epidemiology and public health at Yale University in New Haven, Connecticut

Rogan Kersh is associate dean for academic affairs and an associate professor at the Wagner Graduate School of Public Service, New York University, in New York City.

David S. Ludwig is an associate professor in pediatrics and director of the Optimal Weight for Life program at Children's Hospital Boston and the Harvard Medical School in Boston, Massachusetts.

Robert C. Post is a professor and dean of the Yale Law School in New Haven, Connecticut.

Rebecca M. Puhl is director of research and weight stigma initiatives at the Rudd Center for Food Policy and Obesity.

Marlene B. Schwartz is deputy director of the Rudd Center for Food Policy and Obesity.

Walter C. Willett is chair and professor in the department of nutrition at the Harvard School of Public Health in Boston, Massachusetts.

ABSTRACT The concept of personal responsibility has been central to social, legal, and political approaches to obesity. It evokes language of blame, weakness, and vice and is a leading basis for inadequate government efforts, given the importance of environmental conditions in explaining high rates of obesity. These environmental conditions can override individual physical and psychological regulatory systems that might otherwise stand in the way of weight gain and obesity, hence undermining personal responsibility, narrowing choices, and eroding personal freedoms. Personal responsibility can be embraced as a value by placing priority on legislative and regulatory actions such as improving school nutrition, menu labeling, altering industry marketing practices, and even such controversial measures as the use of food taxes that create healthier defaults, thus supporting responsible behavior and bridging the divide between views based on individualistic versus collective responsibility.

Two of the most important words in the national discourse about obesity are “personal responsibility.” Much rests on how these words are interpreted and how the concept of personal responsibility affects national policy.

How Views Of Personal Responsibility Shape National Policy

The notion that obesity is caused by the irresponsibility of individuals, and hence not corporate behavior or weak or counterproductive government policies, is the centerpiece of food industry arguments against government action. Its conceptual cousin is that government intervention unfairly demonizes industry, promotes a “nanny” state, and intrudes on personal freedoms. This libertarian call for freedom was the tobacco industry’s first line of defense against regulation. It is frequently sounded today by the

food industry and its allies, often in terms of vice and virtue that are deeply rooted in American history and that cast problems like obesity, smoking, heavy drinking, and poverty as personal failures.¹

The food industry script is clear. A *Wall Street Journal* op-ed piece opposing taxes on sugared beverages by Coca-Cola’s chief executive officer stated, “Americans need to be more active and take greater responsibility for their diets.”² This position is also exemplified by a debate in the *Economist* on the role governments should play in guiding food and nutrition choices. Government intervention was opposed by the director general of the Food and Drink Federation in comments evoking totalitarian language: “Such an argument has a disturbing echo of our recent past and what our parents experienced during postwar rationing, arguably the last time that governments controlled every aspect of our food provision.”³

Industry had some early success with these

arguments. Public policy reforms such as restricting junk food in schools and menu labeling were successfully blocked for years in various U.S. jurisdictions, as critics invoked personal responsibility claims at every turn. A recent example occurred in the early Senate and House discussion of health care reform that included the possibility of a tax on sugared beverages.^{4,5} Discussion ceased after a \$24 million lobbying and advertising campaign in 2009 mounted by the beverage industry and funneled partly through an industry front group called Americans Against Food Taxes. And the personal responsibility frame was most clearly deployed in the Personal Responsibility in Food Consumption Act, created to ban lawsuits against the fast-food industry. The legislation passed in the U.S. House but failed in the Senate. Versions of it have been adopted in twenty-three states.

The election of Barack Obama as president and subsequent presidential appointments in key agencies such as the Federal Trade Commission (FTC), the Centers for Disease Control and Prevention (CDC), the U.S. Department of Health and Human Services (HHS), and the Food and Drug Administration (FDA) signaled a change away from an individual-centered to a public health model. Yet considerable tension exists between these two approaches during a time when pressure for government action has increased. Obesity has drawn attention from the White House, Congress, and leaders in all fifty states. At issue is how the nation responds to the obesity problem.

This paper addresses the social, economic, legal, and political importance of the personal responsibility concept. We propose a conceptualization in which opposing political philosophies can be reconciled to best advance public health. We describe specific public policy actions through which government can work constructively to enhance responsibility.

The Science: Is Obesity Attributable To Irresponsibility?

Obesity is caused by an imbalance in calories consumed and expended. Both have gone awry for a growing majority of Americans. The core question is whether personal failing is the simplest explanation. The issue becomes particularly important in the case of children.

ARE PEOPLE LESS RESPONSIBLE OVERALL? If irresponsibility is the cause of obesity, one might expect evidence that people are becoming less responsible overall. But studies suggest the opposite. Exhibits 1 and 2 show U.S. data for a variety of behaviors related to health in both adolescents and adults.^{6,7} These behaviors cross

a number of domains and do not support claims of declining responsibility. What might make behaviors related to diet and activity such an exception?

WHEN ENVIRONMENTS CHANGE A long history of research with laboratory animals has shown the impact of “supermarket” or “cafeteria” diets that mimic what humans eat. The amount of sugar, fat, and calories and the physical properties of these diets have been manipulated in many ways, but consistent is the finding that animals given access to food high in sugar and fat—even when healthy food is freely available—consume calorie-dense, nutrient-poor food in abundance, gain a great deal of weight, and exhibit deteriorating health.⁸ Humans are highly responsive to even subtle environmental cues,⁹ so large shifts in access, pricing, portions, marketing, and other powerful drivers of eating and activity will have major effects on weight.

Humans gain weight when their environment promotes highly palatable food. Consider the Pima Indians. Native to northern Mexico, the Mexican Pimas are physically active as subsistence farmers, eat indigenous food, and rarely suffer from obesity and diabetes. Among a related group of Pimas living in southern Arizona, researchers have found much higher average weights and the world’s highest rate of diabetes.¹⁰ Research has shown consistently that people moving from less to more obese countries gain weight, and those moving to less obese countries lose weight.

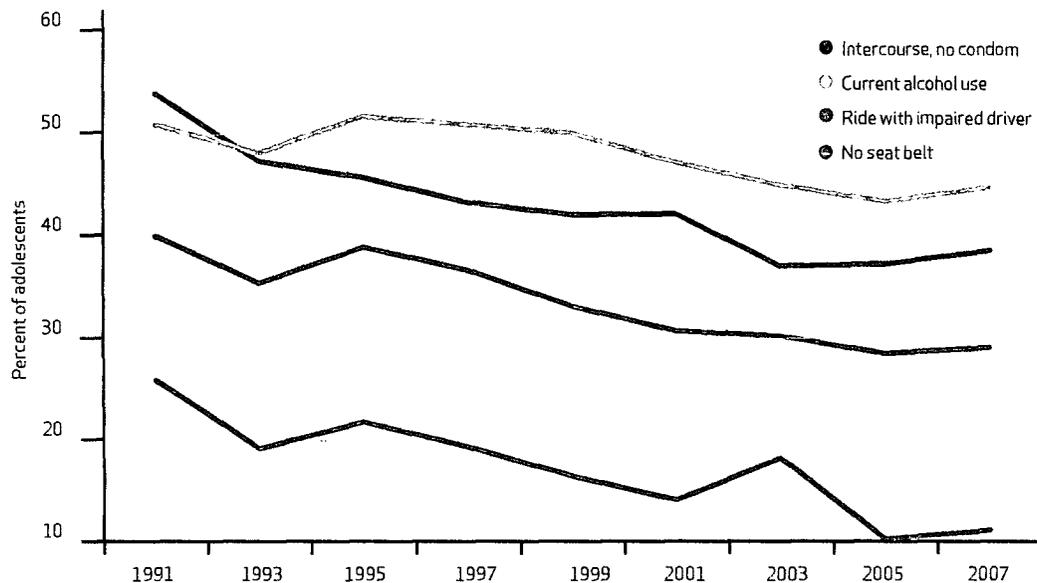
MODERN FOOD AND APPETITE REGULATION Some conditions common to the modern food environment undermine or damage the body’s delicate balance of hunger, satiety, and body weight. Rising portion sizes⁹ and increasing amounts of sugar in food¹¹ are examples of such conditions. Several additional factors are worth noting.

The portion of calories consumed in beverages has increased dramatically in recent decades. Barry Popkin and Samara Nielsen documented a 22 percent increase from caloric sweeteners in the U.S. diet during 1977–1998; 80 percent of the increase came from sugar-sweetened beverages.¹² Such beverages are the single greatest source of added sugar in the American diet. Moreover, the body has special difficulty compensating for calorie excess when the calories are delivered in liquids.¹³

A relatively new but compelling area of research examines whether some food can trigger an addictive process.^{14,15} Bartley Hoebel and colleagues have shown that animals taken on and off high-sugar diets show behavioral and neurological effects similar to those characterizing classic substances of abuse such as morphine.¹⁶ Other work has shown similarities in reward

EXHIBIT 1

Trends In Adolescent Health-Related Behaviors That Show Stable Or Improving Patterns Of Personal Responsibility, 1991-2007



SOURCE Youth Risk Behavior Surveillance System, Centers for Disease Control and Prevention.

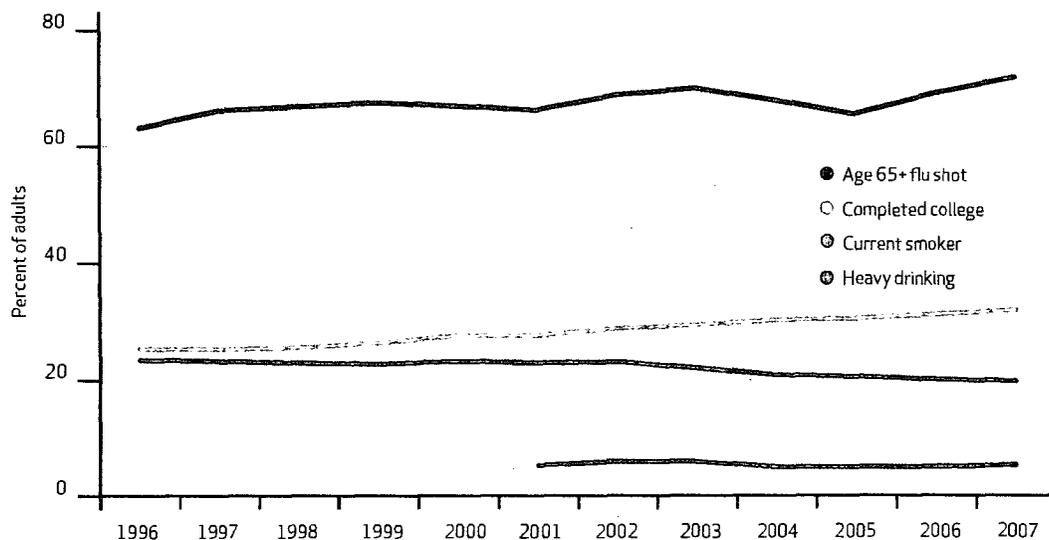
pathways for drugs and food.^{15,17}

Taken together, a great many studies have identified factors in the modern food environment that compromise or even hijack biological and psychological regulatory systems that gov-

ern eating and weight. These forces make it difficult to be "responsible." Further, simple changes in behavior will not be sufficient to close the gap between typical and desired calorie intake and spending, thus arguing for comprehen-

EXHIBIT 2

Trends In Adult Behaviors Related To Health And Education That Show Stable Or Improving Patterns Of Personal Responsibility, 1996-2007



SOURCE Behavioral Risk Factor Surveillance System, Centers for Disease Control and Prevention.

The use of collective action to support personal responsibility is central to public health.

sive measures to improve the environment affecting food and physical activity.¹⁸

Leveraging The Responsibility Concept To Address Obesity

The concept of personal responsibility is woven through the social, political, and legal roots of our culture. At first glance, it seems inconsistent with government actions to protect the public's health. But, in fact, individualistic and public health views can be reconciled.

INDIVIDUAL VERSUS COLLECTIVE APPROACHES Until recently, American approaches to diet, physical activity, and obesity have largely focused on the individual. Predominant approaches have been to educate individuals and implore them to alter their behavior. This view, emphasized in the surgeon general's 1979 *Healthy People* report¹⁹ and reaffirmed in various government reports since, is consistent with the American focus on individualism in culture and politics.²⁰

Studies demonstrate repeatedly that judgments about obesity are linked to values of individualism, self-determination, political conservatism, and secular morality. The resulting "just world" belief is that people get what they deserve, that they are responsible for their life situation, and that to behave in ways contrary to expectations is immoral.²¹ These attributions echo Max Weber's Protestant work ethic, reflecting beliefs that hard work, determination, and self-discipline create success (for example, weight loss); that failure reflects personal weakness; and that obese people are lazy, gluttonous, and undisciplined.²² Numerous weight-based stereotypes have emerged from personal responsibility attributions, making obese people frequent targets of bias, stigma, and discrimination.^{22,23}

Public health approaches, particularly those involving government action, are sometimes caricatured as forcing people to behave in certain ways. In fact, though, the public health community has long understood the need for programs

that blend a focus on individual choices and collective responsibility. Contemporary advances have resulted from such interventions as improved sanitation, control of infectious diseases, better nutrition, and reduced smoking. Some problems require a greater emphasis on one versus the other, but most often they are not clearly separable.

Many health threats require collective action because harmful exposures are shared and not under individual control (such as air or water pollution). The control of infectious diseases is the classic example, in part because vectors can range extensively and infected people can affect others. During the past century, noncommunicable diseases, particularly coronary heart disease, stroke, and cancer, became the dominant sources of morbidity and mortality in Western countries. Research on the determinants of smoking, exercising, and eating behavior reveals that these are not simply free and independent choices by individuals, but rather are influenced by powerful environmental factors.²⁴

Changes in disease prevalence are often brought about most rapidly and effectively through structural interventions that change the environment.²⁵ Elimination of adverse agents at an early and common source is almost always more effective and efficient than depending on individuals to identify and avoid exposure or to treat the consequences. A safe water system prevents waterborne illness such as cholera and is far more effective than asking each person to purify water. Mandated immunization of children is another example. A system that only educated and implored parents to have their children immunized would result in enough failure to provoke a public health catastrophe. The "upstream" approach is effective for several reasons: specific individuals can be employed to prevent or control exposure as their primary responsibility; and systems can be devised that include redundancy, monitoring, and feedback loops to optimize control.

RECONCILING OPPOSING VIEWS: OPTIMAL DEFAULTS The right to health is a fundamental and widely recognized aspect of human rights.²⁶ Around the world, poor diet and obesity threaten this right. For people to be healthy, personal behavior, safe conditions, and an environment that supports healthy choices must combine in complementary ways.

The use of collective action to support personal responsibility is central to public health. It has been discussed in a variety of political and economic contexts using language such as "asymmetric paternalism,"²⁷ "optimal defaults"²⁸ and "libertarian paternalism," and "choice architecture."²⁹ The underlying notion is that choices

must be made, but the environment affects the content of choice. Children in a school cafeteria will select food, but which choice they make is affected by the availability of some foods and not others. Cass Sunstein and Richard Thaler³⁰ note the following:

“It is both possible and legitimate for private and public institutions to affect behavior while also respecting freedom of choice. Often people’s preferences are ill formed, and default rules, framing effects, and starting points will inevitably influence their choices. In these circumstances, a form of paternalism cannot be avoided....[L]ibertarian paternalists should attempt to steer people’s choices in welfare-promoting directions without eliminating freedom of choice.”

An economic construction with similar implications is that of optimal defaults.²⁸ Changes in “defaults,” or the conditions that affect behavior, can have profound effects. For instance, Eric Johnson and Daniel Goldstein³¹ compared the percentage of people choosing to be organ donors in countries where people are not donors by default but are given the option of opting in, versus other countries where people are donors by default but have the choice of opting out. Choice is the same in both cases, but the percentage of donors averages 15 percent when the default is not to be a donor compared to 98 percent when donation is the default (Exhibit 3). It would be practically impossible, even with unlimited resources, to produce this difference through education.

The public holds nuanced views of the obesity problem that encompass personal and collective responsibility. In a nationally representative poll

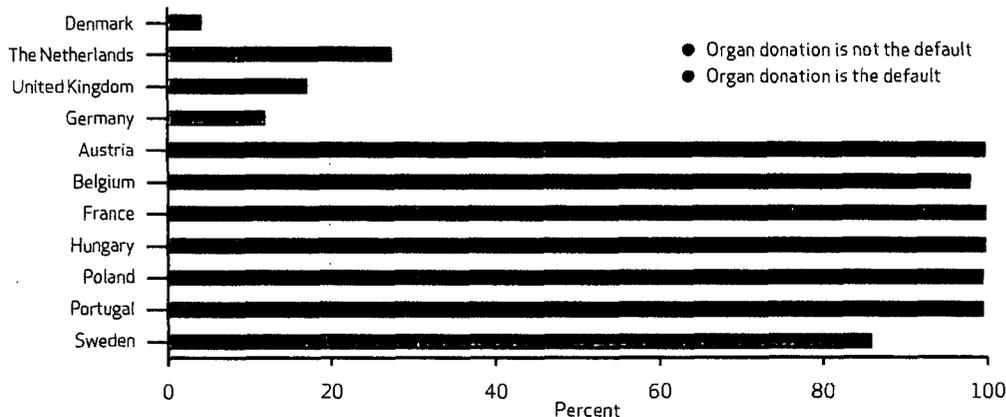
The challenge is to combine personal and collective responsibility approaches in ways that best serve the public good.

of 1,326 U.S. adults, Colleen Barry and colleagues³² asked about reasons for the high prevalence of obesity. The lowest-rated cause was personal behavior related to sloth and gluttony, while the highest was the food environment. Rated above personal behavior were “time crunch” issues, pressures such as food marketing, and addiction to certain food. In addition, the public perceived multiple causes: 66 percent of the sample chose three or more explanatory factors. There was support for a number of government actions including improving school nutrition (69 percent support) and even an outright ban on junk-food advertising (51 percent).

In a perverse way, personal responsibility for health is being undermined by what Jacob Hacker labels the “personal responsibility crusade.”³³ An overemphasis on personal responsibility and mislabeling actions that enhance

EXHIBIT 3

Percentage Of People In Eleven Countries Who Choose To Be Organ Donors Depending On Whether Or Not Donating Organs Is The Default



SOURCE Johnson EJ, Goldstein D. Medicine: do defaults save lives? Science. 2003;302(5649):1338-9.

personal choice as “government intrusion” prevents or stalls needed policy changes that can help people be responsible.

Policy makers tend to frame obesity as an individual responsibility or an environmental/collective issue, inspiring very different sets of policy recommendations. The responses are not mutually exclusive. In fact, on other issues like tobacco and drug use, they have jointly inspired government action. In today’s highly partisan political environment, however, parties often seize on one frame and dismiss the other.

The challenge is to combine personal and collective responsibility approaches in ways that best serve the public good. This begins with viewing these approaches as complementary, if not synergistic, and recognizing that conditions can be changed to create more optimal defaults that support informed and responsible decisions and hence enhance personal freedoms. Conditions that subvert responsible behavior have been identified. Attention can now turn to creating conditions that enhance responsible choices.

Specific Policy Proposals

Prior to the presidential election of 2008, the principal policy approach to obesity in Washington, D.C., grew directly from personal responsibility arguments: encouraging education. The hope was that people would understand the dangers in their lifestyle choices and behave differently. The food industry supported this conceptualization with considerable resources, as it sought to train the spotlight away from the parties producing, marketing, and selling food to those consuming it. Government’s role became that of an exhortative mentor, promoting improved health habits and publicizing the dangers of obesity but little more.

Federal, state, and local governments are now highly involved in policies meant to reduce obesity. Legislative and administrative regulation consumes less political capital when designed to work hand-in-glove with norms of personal responsibility, so as government actions expand, it will be important to acknowledge and build upon personal responsibility beliefs. We present here several promising public policy approaches and discuss in each case how personal and collective responsibility can act together.

Protecting Children

Legislative and regulatory actions become more probable if there are identifiable victims who are unavoidably harmed without their consent. Children have traditionally been seen as just such

victims.¹ Food companies formulate and market food in ways that have powerful psychological and biological effects on children, thus undermining parents’ ability to provide their children with a safe nutritional environment and making it difficult for children to develop responsible behavior.

Some of the first policy victories have been in schools.³⁴ The federal government has stopped short of requiring changes in school food, but through reauthorization of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) in 2004 it required all school districts to have wellness policies.³⁴ In addition, dozens of school districts and several states (such as Connecticut and California) have taken action to change food in schools. There is great hope that the reauthorization of the Child Nutrition Act in 2010 will help change the nutrition landscape in schools by promoting healthier food in breakfast and lunch programs and by eliminating unhealthy foods that compete with the nation’s nutrition guidelines. Congressional legislation to reduce sharply availability of “foods of minimal nutrition value” shows signs of moving toward passage, as of this writing in early 2010.³⁵

Consumers’ Right To Truthful Information

Regulations that promote the disclosure of information promote personal choice and responsibility by ameliorating information asymmetries in the marketplace. If consumers are to make better food choices, they must be armed with accurate, truthful information about what they purchase. This philosophy was the basis for the Nutrition Labeling and Education Act of 1990, which requires nutrition labels on packaged food. Menu labeling legislation is the more recent variant designed so that consumers see, at the very least, calorie information on restaurant menus and posted food options at fast-food outlets.³⁶

New York City was the first to propose labeling regulations. The restaurant industry mounted a major effort to fight this action, twice suing the city. Eventually the city prevailed in the courts, and regulations are now in place.³⁵ The industry then weakened state legislation in California by arguing successfully for exemption of drive-through windows and delayed enforcement. But when a number of other states and cities began introducing labeling legislation, the restaurant industry faced the specter of inconsistent and demanding regulations and asked for federal legislation that would set a weak national requirement and preempt states and cities from

WORSENING TRENDS, ACTION AGENDA

setting their own standards. In a sign of the changing climate in Washington, this bill did not succeed; instead, a more comprehensive bill was introduced into both House and Senate versions of health care reform.

Consumers must also be protected from inaccurate, misleading, or deceptive information, thus making enforcement of federal and state consumer protection laws a public health priority. A case in point is the "Smart Choices" program in which the food industry set its own nutrition standards and applied a Smart Choices label to products it considered healthy. Products such as mayonnaise and cereals such as Lucky Charms and Froot Loops received this designation, but the industry withdrew the program after criticism by the FDA and, perhaps most important, legal action announced by Connecticut's attorney general.

Food Marketing

Food marketing has a negative impact on the nation's diet and hence health, particularly affecting children.^{37,38} Marketing is relentless, is overwhelming in amount, is carried out in many new forms referred to by industry as "stealth" approaches (for example, when built into online video games), often occurs outside the awareness of parents, and hence erodes the nation's goal of fostering healthier eating. This adds up, as research has shown, to an effective subversion of personal responsibility, as advertising taps directly into the "limbic brain."³⁹ The vast majority of marketed products have poor nutritional quality. For example, a 2009 report on the marketing of breakfast cereals found almost perfect overlap between the cereals with the worst nutrition ratings and those marketed most aggressively to children.⁴⁰

A number of federal agencies have authority to affect food marketing, including the FTC, the FDA (labeling), and the U.S. Department of Agriculture (USDA; marketing of food in schools). Congress has the authority to set tighter standards for what can be marketed; states, particularly through the attorneys general, may be in a position to take action.

Two industry actions must be anticipated if government acts to curtail food marketing. Any change is virtually certain to be challenged in the courts using First Amendment protection of commercial speech as the basis. Second, as public scrutiny of industry intensifies, companies will continue issuing self-regulatory promises to act in the public good. The tobacco industry voluntarily withdrew its television advertising in the 1970s in exchange for the right to market in all other media. What seemed at the

There is every reason to be cautious when industry promises self-regulation.

time to be a public health victory turned out otherwise, as industry used other more cost-effective means of marketing.⁴¹ Similar traps must be avoided with food and obesity, and there is every reason to be cautious when industry promises self-regulation.^{42,43}

Regulation Of Food Ingredients

In another move to exercise collective responsibility in ways that enhance personal awareness and hence informed choice, government can set specific standards for food products and announce these standards through legislation or administrative regulation. These standards often seek to avert consumer harm. The state is widely regarded as authorized to determine the safety of food, "technical" food additives, or obscure food ingredients about which ordinary people would know little, leaving them unable to exercise reasonable action.

An example is the ban on trans fats in restaurants by the New York City Board of Health. Although not particularly relevant to obesity (fats that replace trans fats have equivalent calories), the precedent could be very important. Salt is the next most likely ingredient to be the target of regulatory authority, but fat and sugar might be possibilities at some point.

Encouraging healthier ingredients in food prompts promising dietary defaults. Consider that no restaurant patron in New York City will be eating trans fat. The ban carried little cost to restaurants and government and no cost to consumers. Attempting to accomplish this through education would be expensive and, in all likelihood, ineffective.

Taxes

Perhaps the most controversial public policy proposal, and the one to evoke greatest outcry from industry about government intrusion, is to tax food, particularly sugar-sweetened beverages as a starting point. The proposal considered most frequently would introduce a tax of a penny

per ounce on beverages with added sugar or other caloric sweeteners, with all or part of the revenue designated for obesity prevention programs or subsidies for healthy food such as fruit or vegetables.^{4,5} Such a tax would reduce consumption of sugar-sweetened beverages by 23 percent—enough to affect health care costs and generate \$150 billion nationally over ten years.^{4,5}

Changing food prices is a means of creating better defaults. Industry arguments that this would create hardship or remove one of life's simple pleasures are difficult to swallow, considering that, although a tax of a penny per ounce would reduce population consumption of sugared beverages, it would still leave the average American consuming 38.5 gallons of sugary beverages per year. Arguments that the tax is regres-

sive are countered by knowledge that obesity and diabetes are regressive diseases that affect the poor in greater numbers. Moreover, revenues from the tax could be used for programs that would specifically help the poor.

Conclusions

Creating conditions that foster and support personal responsibility is central to public health. Default conditions now contribute to obesity, a reality that no amount of education or imploring of individuals can reverse. Government has a wide variety of options at its command to address the obesity problem. Judicious use of this authority can increase responsibility, help individuals meet personal goals, and reduce the nation's health care costs. ■

The authors received external financial support for work that contributed to

this paper from the Rudd Foundation, the Robert Wood Johnson Foundation,

and the National Institutes of Health.

NOTES

- 1 Kersh R, Morone J. How the personal becomes political: prohibitions, public health, and obesity. *Stud Am Polit Dev*. 2002;16(2):162-75.
- 2 Kent M. Coke didn't make America fat: Americans need more exercise, not another tax. *Wall Street Journal*. 2009 Oct 7.
- 3 Food policy: this house believes that governments should play a stronger role in guiding food and nutrition choices [Internet]. *Economist Debates*. London (UK): Economist; 2009 Dec [cited 2010 Jan 5]. Available from: <http://www.economist.com/debate/overview/159>
- 4 Brownell KD, Farley T, Willett WC, Popkin BM, Chaloupka FJ, Thompson JW, et al. The public health and economic benefits of taxing sugar-sweetened beverages. *N Engl J Med*. 2009;361(16):1599-605.
- 5 Brownell KD, Frieden TR. Ounces of prevention—the public policy case for taxes on sugared beverages. *N Engl J Med*. 2009;360(18):1805-8.
- 6 Eaton DK, Kann L, Kinchen S, Shanklin S, Ross J, Hawkins J, et al. Youth risk behavior surveillance—United States, 2007. *MMWR*. 2008;57(SS04):1-131.
- 7 Kilmer G, Roberts H, Hughes E, Li Y, Valluru B, Fan A, et al. Surveillance of certain health behaviors and conditions among states and selected local areas—Behavioral Risk Factor Surveillance System (BRFSS), United States, 2006. *MMWR*. 2008;57(S07):1-188.
- 8 Tordoff MG. Obesity by choice: the powerful influence of nutrient availability on nutrient intake. *Am J Physiol Regul Integr Comp Physiol*. 2002;282(5):R1536-9.
- 9 Wansink B. *Mindless eating: why we eat more than we think*. New York (NY): Bantam; 2006.
- 10 Schulz LO, Bennett PH, Ravussin E, Kidd JR, Kidd KK, Esparza J, et al. Effects of traditional and western environments on prevalence of type 2 diabetes in Pima Indians in Mexico and the U.S. *Diabetes Care*. 2006;29(8):1866-71.
- 11 Johnson RK, Appel LJ, Brands M, Howard BV, Lefevre M, Lustig RH, et al. Dietary sugars intake and cardiovascular health. a scientific statement from the American Heart Association. *Circulation*. 2009;120:110-20.
- 12 Popkin BM, Nielsen SJ. The sweetening of the world's diet. *Obes Res*. 2003;11(11):1325-32.
- 13 Mourao DM, Bressan J, Campbell WW, Mattes RD. Effects of food form on appetite and energy intake in lean and obese young adults. *Int J Obes (Lond)*. 2007;31(11):1688-95.
- 14 Gearhardt A, Corbin WR, Brownell KD. Food addiction: an examination of the diagnostic criteria for dependence. *J Addict Med*. 2009;3(1):1-7.
- 15 Volkow ND, Wise RA. How can drug addiction help us understand obesity? *Nat Neurosci*. 2005;8(5):555-60.
- 16 Avena NM, Rada P, Hoebel BG. Evidence for sugar addiction: behavioral and neurochemical effects of intermittent, excessive sugar intake. *Neurosci Biobehav Rev*. 2008;32(1):20-39.
- 17 Wang G-J, Volkow ND, Thanos PK, Fowler JS. Imaging of brain dopamine pathways: implications for understanding obesity. *J Addict Med*. 2009;3(1):8-18.
- 18 Katan MB, Ludwig DS. Extra calories cause weight gain—but how much? *JAMA*. 2010;303(1):65-6.
- 19 U.S. Department of Health, Education, and Welfare, Office of the Assistant Secretary for Health and Surgeon General. *Healthy people: the surgeon general's report on health promotion and disease prevention*. Washington (DC): U.S. Government Printing Office; 1979.
- 20 Leichter HM. "Evil habits" and "personal choices": assigning responsibility for health in the 20th century. *Milbank Q*. 2003;81(4):603-26.
- 21 Crandall CS, Schiffhauer KL. Anti-fat prejudice: beliefs, values, and American culture. *Obes Res*. 1998;6(6):458-60.
- 22 Puhl RM, Heuer CA. The stigma of obesity: a review and update. *Obesity (Silver Spring)*. 2009;17(5):941-64.
- 23 Puhl RM, Andreyeva T, Brownell KD. Perceptions of weight discrimination: prevalence and comparison to race and gender discrimination in America. *Int J Obes (Lond)*. 2008;32(6):992-1000.
- 24 Koplan JP, Dietz WH. Caloric imbalance and public health policy. *JAMA*. 1999;282(16):1579-81.
- 25 Katz MH. Structural interventions for addressing chronic health problems. *JAMA*. 2009;302(6):683-5.
- 26 United Nations. Substantive issues arising in the implementation of the International Covenant on Economic, Social, and Cultural Rights. Article 12 of the International Covenant on Economic, Social, and Cultural Rights. New York (NY):

- UN; 2000.
- 27 Loewenstein G, Brennan T, Volpp KG. Asymmetric paternalism to improve health behaviors. *JAMA*. 2007;298(20):2415-7.
 - 28 Choi JJ, Laibson D, Madrian BC, Metrick A. Optimal defaults. *Amer Econ Rev*. 2003;93(2):180-5.
 - 29 Thaler RH, Sunstein CR. Libertarian paternalism. *Amer Econ Rev*. 2003; 93(2):175-9.
 - 30 Sunstein CR, Thaler RH. Libertarian paternalism is not an oxymoron. *University of Chicago Law Review*. 2003;70:1179-209.
 - 31 Johnson EJ, Goldstein D. Medicine: do defaults save lives? *Science*. 2003;302(5649):1338-9.
 - 32 Barry CL, Brescoll VL, Brownell KD, Schlesinger M. Obesity metaphors: how beliefs about the causes of obesity affect support for public policy. *Milbank Q*. 2009;87(1):7-47.
 - 33 Hacker JS. The great risk shift: the assault on American jobs, families, health care, and retirement—and how you can fight back. New York (NY): Oxford University Press; 2006.
 - 34 Story M, Nannery MS, Schwartz MB. Schools and obesity prevention: creating school environments and policies to promote healthy eating and physical activity. *Milbank Q*. 2009;87(1):71-100.
 - 35 Kersh R. The politics of obesity: a current assessment and look ahead. *Milbank Q*. 2009;87(1):295-316.
 - 36 Roberto CA, Schwartz MB, Brownell KD. Rationale and evidence for menu-labeling legislation. *Am J Prev Med*. 2009;37(6):546-51.
 - 37 Harris JL, Pomeranz JL, Lobstein T, Brownell KD. A crisis in the marketplace: how food marketing contributes to childhood obesity and what can be done. *Annu Rev Public Health*. 2009;30:211-25.
 - 38 Institute of Medicine. Food marketing to children and youth: threat or opportunity? Washington (DC): National Academies Press; 2006.
 - 39 Walter H, Abler B, Ciaramidaro A, Erk S. Motivating forces of human actions. *Neuroimaging reward and social interaction*. *Brain Res Bull*. 2005;67(5):368-81.
 - 40 Yale University, Rudd Center for Food Policy and Obesity. Cereal f.a.c.t.s: food advertising to children and teens [home page on the Internet]. New Haven (CT): Rudd Center; 2009 [cited 2010 Jan 19]. Available from: <http://cerealfacts.org/>
 - 41 Brandt AM. The cigarette century: the rise, fall, and deadly persistence of the product that defined America. New York (NY): Basic Books; 2007.
 - 42 Sharma LL, Teret SP, Brownell KD. The food industry and self-regulation: standards to promote success and avoid public health failures. *Am J Public Health*. Forthcoming.
 - 43 Brownell KD, Warner KE. The perils of ignoring history: Big Tobacco played dirty and millions died. How similar is Big Food? *Milbank Q*. 2009;87(1):259-94.

ABOUT THE AUTHOR: KELLY D. BROWNELL



Kelly D. Brownell

Kelly D. Brownell is founding director of the Rudd Center for Obesity and Food Policy at Yale University. Although his primary focus today is prevention of obesity, he started his academic career more focused on obesity treatment. As a graduate student in clinical psychology at Rutgers University, he studied under G. Terence Wilson, a specialist in the treatment of weight and eating disorders and psychological mechanisms of behavioral change. Brownell's

dissertation dealt with a study that he had conducted demonstrating that dieters were more likely to succeed if their spouses were involved in their weight-loss program. He continued to pursue treatment studies at the University of Pennsylvania, where Albert Stunkard, a leader in obesity research, hired him in 1977.

But the ongoing disappointing results of treatment, and one particular case he encountered, eventually led Brownell to change his focus. In a Penn study of severely restricted diets, in which participants consumed just 800 calories a day, one, a woman, wasn't losing weight. She insisted she had stuck to the diet. Brownell says the usual explanation is that the alleged dieter "is lying or has truly forgotten" what she ate. "But I believed her, and it got me interested in how this could be."

Brownell thought that repeated dieting might have created "this energy-efficient person whose body would defend itself against losing weight." So he turned to two animal researchers at Penn to test the theory in rats. When repeated gains and losses actually prompted the rats to lose weight more slowly, Brownell and his colleagues turned to humans stuck in the same cycle. He says that the signature phrase "yo-yo dieting" emerged during one of their research meetings and migrated into the lexicon with his name attached.

From there, Brownell wanted to examine the health effects of chronic dieting and sought another collaboration, this time with investigators in the renowned Framingham Heart Study. The collaboration allowed scientists to examine weight fluctuation

in a large group of people over time. It found significant relationships between weight variability and risk for both coronary heart disease and all-cause mortality. Brownell concluded that since treatments were ineffective, obesity was "a problem that screamed out to be prevented."

"Public Health 101 is to find the most upstream causes of a problem and try to correct them," he says. Hence, his focus on what he describes as the "toxic food environment" that makes obesity inevitable. Eating badly is society's new "default" setting, he says. "and what we're doing is working with policymakers to change the defaults." He's thus become a crusader for a penny-an-ounce soda tax. He also supports menu calorie labeling and is an outspoken critic of advertising by Big Food.

It's no surprise that Brownell has attracted the wrath of leading food industry groups, including the National Restaurant Association, the American Beverage Association, and the Grocery Manufacturers of America. "They call me one of the 'food police' and consider me part of the nanny state," he says.

Brownell brushes off the criticism and says that his side is simply outgunned by industry spending to protect its interests. He points out that the largest nongovernmental contributor to obesity research, the Robert Wood Johnson Foundation, spends \$100 million a year on the problem—"a lot of money. But if you pick the day of the year by which the food industry has spent the same amount marketing food to kids, it's January 4. It's got to be stopped."