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## Promoting Public Health in the Context of the “Obesity Epidemic”: False Starts and Promising New Directions

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### Abstract

In the battle to combat obesity rates in the United States, several misconceptions have dominated policy initiatives. We address those misconceptions, including the notion that restrictive diets lead to long-term weight loss, that stigmatizing obesity is an effective strategy for promoting weight reduction, and that weight and physical health should be considered synonymous with one another. In offering correctives to each of these points, we draw on psychological science to suggest new policies that could be enacted at both the local and national levels. Instead of policies that rely solely on individual willpower, which is susceptible to failure, we recommend those that make use of environmental changes to reduce the amount of willpower necessary to achieve healthy behavior. Ultimately, the most effective policies will promote health rather than any arbitrary level of weight.

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Misconceptions about obesity have hindered policy efforts to promote health. Here, we provide three major corrections and suggest policies based on psychological science that offer promising new directions for improving health (summarized in Table 1).

### 1. Restrictive Diets Do Not Work

Obesity levels have increased dramatically over the last 35 years, and the most commonly recommended treatment, dieting, is practiced by over 100 million people in the United States. However, regardless of the particular type of restrictive diet that people follow, weight that is lost in the short term is rarely kept off in the long term (Franz et al., 2007; Tomiyama, Ahlstrom, & Mann, 2013). Individuals typically cannot maintain weight loss through restrictive dieting because deprivation ultimately triggers a biological starvation response in which neurological changes render food especially attention-grabbing, difficult to stop thinking about, and more rewarding to consume (Adam & Epel, 2007).

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#### Author Contributions

All authors made equal contributions.

Simultaneously, hormonal changes increase feelings of hunger and reduce one's sense of fullness (Sumithran et al., 2011), and metabolic changes allow the body to sustain itself on fewer calories, resulting in greater fat storage (Leibel, Rosenbaum, & Hirsch, 1995). Moreover, general self-control ability, or willpower, is reduced (Page et al., 2011). Even under optimal circumstances, willpower is surprisingly fragile (Hagger, Wood, Stiff, & Chatzisarantis, 2010) and susceptible to failure in response to regular daily experiences involving simple cognitive distraction (Ward & Mann, 2000) or negative emotional states (Greeno & Wing, 1994).

### Policy Implications

It is clear to us that restrictive diets should no longer be recommended or promoted. Instead, the enormous quantity of financial resources currently devoted toward discovering the ideal restrictive diet should be redirected toward evidence-based, scientifically grounded strategies for improving health.

Psychological science has highlighted the capacity for basic manipulations of one's immediate surroundings to increase health-promoting behaviors without relying primarily on individual willpower. For example, research has found that healthier eating in school cafeterias can be facilitated by a modification as simple as placing photographs of vegetables in compartmentalized food trays (Reicks, Redden, Mann, Mykerezi, & Vickers, 2012), or making other small changes, such as using larger serving utensils for healthy foods or placing healthier foods near checkout areas (Wansink, 2014). Indeed, just providing children carrots at their lunch table before the rest of their meal is made available has been shown to more than quadruple the grams of carrots consumed (Redden et al., in press). These types of changes do not damage commercial profits and may increase them (Wansink, 2014).

Lab studies have also shown that slightly increasing the inconvenience of obtaining unhealthy foods (by placing them just out of reach) leads to reduced consumption of those foods (Maas, de Ridder, de Vet, & de Wit, 2012). Policies restricting the sale of large-size sugar-sweetened soft drinks, which make consuming extra soda marginally more inconvenient, may therefore constitute an effective means for reducing individuals' sugar intake. However, these simple strategies have been tested primarily in short-term studies, and we recommend that longer-term tests of them be prioritized.

Targeted policies can also make use of the stress and distraction that typically precipitate failures in willpower as well as characterize much of modern life. Research has shown that stress and distraction narrow attention to the most prominent cues in one's immediate surroundings (Mann & Ward, 2007). In the current "toxic food environment" (Brownell & Horgen, 2004), unhealthy eating cues tend to be the most attention grabbing, but if cues in the environment promoting healthy eating were rendered more noticeable (e.g., through public service ads), our research suggests that stress or distraction could actually foster healthy behavioral choices instead of preventing them. In particular, we found that dieters experiencing attentional distraction consumed 45% less of a high-fat milkshake when the unhealthy consequences of drinking it were highlighted (Mann & Ward, 2004). Much like the "equal time" rule for opposing political candidates required by the Communications Act

of 1934, policies could mandate that broadcasters allow equal time for both healthy and unhealthy food advertisements, rather than saturating the airwaves with the latter.

## 2. Weight Stigma Does Not Reduce Obesity

Some health policy scholars have conjectured that stigmatizing obese people will motivate such individuals to lose weight (e.g., Callahan, 2013). In fact, public health campaigns, most notably the Strong4Life campaign aimed at children, have already begun to incorporate these stigmatizing messages. Psychological research finds, however, that such an approach will likely backfire (Vartanian & Smyth, 2013). Being exposed to weight stigma causes increased eating, predicts exercise avoidance, depletes the very mental resources needed to control one's behavior, and is linked to an increased, not decreased, risk of becoming obese over time (Hunger & Tomiyama, 2014). Furthermore, weight stigma results in increases in psychological and physiological indices of stress, a state that is harmful to health and can lead to weight gain (for a review, see Tomiyama, 2014). Accordingly, campaigns that make use of stigma to motivate weight loss are likely to fail.

### Policy Implications

Public service announcements and anti-obesity campaigns should be scientifically tested to ensure they are not stigmatizing. Furthermore, rather than simply being anti-obesity focused, such campaigns should be psychologically informed and provide concrete, actionable steps that individuals can take to be healthier.

Policies that classify weight as a protected class, similar to race, gender, or sexual orientation, may help to reduce the stigma of obesity (Pomeranz, 2008), thereby preventing unhealthy behaviors that arise from weight stigma. Of course, classifying weight as a protected class may primarily serve to protect obese individuals from *discrimination* rather than weight stigma more broadly, making it a necessary but not sufficient step. However, evidence from similar protections of sexual minorities indicates this step may constitute an effective counter to stigma (Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010) and may even positively impact physical and mental health (Hatzenbuehler, Keyes, & Hasin, 2009; Oldenburg et al., 2014). Again drawing on evidence gathered with regard to LGB individuals (Hatzenbuehler, 2011), school-based policies may help reduce the negative consequences of bullying experienced by overweight and obese children. Being the victim of bullying in childhood predicts poor health in adulthood, as well as greater crime, relationship violence, and less wealth (Wolke, Copeland, Angold, & Costello, 2013), and therefore represents an important intervention target.

## 3. Weight Health

Weight is an imperfect measure of health (Tomiyama et al., 2013). Except among the most obese (Body Mass Index [BMI]  $\geq 40$ ; 6.3% of the population), obesity does not appear to shorten lifespan (Flegal, Kit, Orpana, & Graubard, 2013), and nationally representative data indicate fully 19.5 million (31.7%) obese adults are metabolically healthy (Wildman et al., 2008). Commonly cited linkages between obesity and poor health may be partly explained by other factors that are known to be strongly related to health problems, including the fact

that obese people are more likely to be sedentary, of lower socioeconomic status, and not receiving preventive medical care (Bacon & Aphramor, 2011). Importantly, regardless of the strength of the association between weight and health, evidence abounds that health can be improved through physical activity, maintaining proper nutrition, and reducing stress, even in the absence of weight loss (e.g., Heran et al., 2011).

### Policy Implications

We suggest that weight and BMI be retired as measures of health and be replaced with more valid indicators, such as blood pressure and heart rate, as well as levels of cholesterol and blood glucose. Future research might investigate the efficacy of devising a simple composite measure that incorporates these various markers into a simple, easy-to-comprehend “health score” for individuals to track. At present, for health purposes, individuals would typically be better advised to track their blood pressure than their weight. Indeed, in many ways, blood pressure constitutes a simpler metric than BMI, as the healthy cutoff (120/80) is essentially the same for all individuals, whereas BMI requires a mathematical computation of weight and height (with healthy levels varying depending on such factors as muscle mass). To facilitate this practice, we propose the creation of programs designed to educate people both on healthy blood pressure levels and how to use a blood pressure monitor. A more creative suggestion would be to allow individuals to trade in their household scales for blood pressure monitors, a practice similar to gun buyback programs. In short, once the focus is shifted to more appropriate health measures, it becomes clear that the goal should be to work to improve peoples’ health regardless of their weight.

A clear path toward achieving that goal involves increasing physical activity. Exercise and other forms of physical activity have been found to reduce depression and anxiety (Salmon, 2001), prevent disease (Kuehn, 2014), and increase longevity (Samitz, Egger, & Zwahlen, 2011; Williamson & Pahor, 2010). Over the last half century, there has been a steady decrease in the amount of physical activity individuals experience while performing their jobs, doing housework, or using modes of transportation (Brownson, Boehmer, & Luke, 2005), and these activities provide an ideal focus for interventions that do not rely primarily on willpower. Incidental activity can be enhanced through alterations to the physical environment, whether these changes involve moving parking spaces farther from building entrances or constructing buildings that feature convenient and accessible stairways to reduce elevator use (see Lopez & Hynes, 2006). One study found that slowing elevator doors by a mere six seconds cut elevator use in half (Houten, Nau, & Merrigan, 1981). Clearly, additional research is needed to investigate whether multiple small changes in activity might compound over time and translate into health benefits.

Normative pressures should be considered as well. In our own research on perceptions of eating and physical activity, we have found that societal standards support consuming food in an enormous range of environments, whereas engaging in almost any kind of physical movement in many of those same environments (e.g., running in place while waiting in line at the post office) is perceived to be highly unusual. The efficacy of changing normative standards for physical activity in non-traditional environments (e.g., outside of a gym or park) should be investigated.

One example of promoting norms for physical activity and improving health in the workplace can be seen in Instant Recess, a scientifically-based (and fun) 10-minute movement break designed to be incorporated into workplace meetings (see [www.instantrecess.com](http://www.instantrecess.com)). Businesses could be provided with incentives to offer opportunities in terms of both time and space in which simple physical activity can occur. Indeed, interventions that incorporate workplace physical activity have resulted in increased worker productivity (Cancelliere, Cassidy, Ammendolia, & Côté, 2011). At the same time, our nation should reverse the trend of limiting physical education in schools and instead mandate it for all school-age children, with enhanced goals for physical activity incorporated into existing educational standards.

## Conclusion

In this article, we have provided suggestions for implementing promising scientifically based policies to improve the health of Americans (see Table 1 for a summary). By turning away from primarily willpower-based strategies, we can move toward policies that harness the power of environmental changes to foster healthy behavior for all, regardless of the number on the scale.

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**Table 1**

Correcting three common misconceptions about obesity and suggested policies derived from scientific evidence.

Evidence-based finding	Example Policy Recommendations
Restrictive diets do not work	<ul style="list-style-type: none"> <li>• Deemphasize funding research on restrictive/willpower-based diets</li> <li>• Regulate cafeteria design to visually highlight vegetables</li> <li>• Mandate serving vegetables in schools before other food is present</li> <li>• Restrict sales of large sizes of sugar-sweetened drinks</li> <li>• Implement “equal time” legislation regulating unhealthy and healthy food advertisements</li> <li>• Fund research to test long-term effects of these types of environmental changes</li> </ul>
Weight stigma will not reduce obesity	<ul style="list-style-type: none"> <li>• Require pre-testing of public service announcements and anti-obesity campaigns to ensure they are not stigmatizing</li> <li>• Make weight a protected class</li> </ul>
Weight does not equal health	<ul style="list-style-type: none"> <li>• Retire weight and BMI as a measure of health; emphasize validated measures such as blood pressure, cholesterol, glucose, and heart rate</li> <li>• Implement education programs aimed at measuring and interpreting blood pressure levels</li> <li>• Institute scale buyback programs to permit trade-ins for blood pressure monitors</li> <li>• Decrease maximum allowable elevator speeds, especially in low-rise buildings</li> <li>• Introduce physical activity in environments not usually associated with such behaviors</li> <li>• Incentivize workplace physical activity using programs such as Instant Recess</li> <li>• Fund research testing long-term effects of these types of policies.</li> </ul>