HEALTH & MEDICINE

MARKET TEST OR GOVERNMENT GUESS?

Are government efforts to "nudge" us to lose weight really based on science?

BY MICHAEL L. MARLOW

Rising obesity prevalence in the United States has led public health experts to propose solutions to what is frequently called an "obesity epidemic." Obesity prevalence has doubled over the past three decades and, as of 2009, more than one-third of adults were obese. A recent study in the *American Journal of Preventive Medicine* by Eric Finkelstein et al. predicts that by 2030 42 percent of Americans will be obese and 11 percent will be severely obese, which is 100 or more pounds overweight. Obesity is a major health concern given its association with chronic conditions that include diabetes, hypertension, high cholesterol, stroke, heart disease, certain cancers, and arthritis.

Traditionally, economists propose controlling population weight through taxing "bad" foods, subsidizing "good" foods, and implementing other policies that change the economic incentives of rational individuals. However, many behavioral economists believe that undesired weight gain is the result of unconscious and irrational decisions that result from psychological, social, cognitive, and emotional factors. In their 2008 book *Nudge*, Richard Thaler and Cass Sunstein espouse the behavioral economics view that well-designed "nudges" devised by "choice architects" can steer individuals toward wiser decisions that enhance their welfare. Thaler and Sunstein argue that the most important applications of "nudge theory" often lie with governments rather than markets.

But are nudges designed to steer us toward better food and beverage consumption behaviors an effective means of lowering population weight? This article discusses our state of knowledge on obesity causes and prevention. It presents the basics of nudge theory, followed by criticisms of that theory. It then discusses various imperfections that all choice architects—whether in government or the market—must face that suggest that nudges are a blunt instrument for reducing population weight. It also discusses how nudging by government differs from nudging by markets. Through this discussion, it becomes apparent that market nudging is the more promising avenue for helping citizens to lose weight.

MICHAEL L. MARLOW is a professor of economics at California Polytechnic State University and an affiliated senior scholar of the Mercatus Center at George Mason University.

This article is based on his paper, "Weight Loss Nudges: Market Test or Government Guess?" Mercatus working paper, September 2014.

OBESITY CAUSES AND PREVENTION

Historical body mass index (BMI) data show that Americans started gaining weight in the 1920s, but only in the 1980s did a large number of Americans begin crossing the BMI threshold of 30 that usually defines obesity. To calculate BMI, individuals divide their weight by the square of their height, with values given in units of kilograms per meter-squared. A six-foot-tall male, for example, is obese if he weighs at least 221 pounds.

Despite decades of research, a clear understanding of obesity has proven elusive because of problems in defining obesity, lax application of scientific standards, tenuous assumption-making, flawed measurement, and limited examination of alternative explanations of cause. Krista Casazza et al. argue in a 2013 *New England Journal of Medicine* paper that scientifically unsupported beliefs about obesity are pervasive in both the scientific literature and the popular press. The authors identify myths, presumptions, and facts based on the current state of scientific knowledge. They consider propositions to be true only when supported by confirmatory randomized studies. Below are some examples from each category, all of which are especially relevant to this article.

Among the myths (e.g., common beliefs that are contradicted by the scientific evidence) are:

- Small, sustained changes in energy intake or expenditure will produce large, long-term weight changes.
- Setting realistic goals in obesity treatment is important because otherwise patients will become frustrated and lose less weight.
- Large, rapid weight loss is associated with poorer long-term weight outcomes than is slow, gradual weight loss.

ISTOCK

The presumptions (i.e., beliefs that persist in the absence of supporting scientific evidence) include:

- Regularly eating (vs. skipping) breakfast protects against obesity.
- Eating more fruits and vegetables will result in weight loss or less weight gain regardless of whether one intentionally makes any other behavioral or environmental changes.
- Snacking contributes to weight gain and obesity.

Finally, legitimate facts (i.e., beliefs that are consistent with the scientific evidence) include:

- Diets very effectively reduce weight, but trying to go on a diet or recommending that someone go on a diet generally does not work well in the long term.
- Exercise helps mitigate the health-damaging effects of obesity, even without weight loss.
- Physical activity in a sufficient dose aids long-term weight maintenance.
- Involving parents promotes greater weight loss or maintenance in overweight children.
- Provision of meals and use of meal-replacement products promotes greater weight loss.

A recent study by Kathryn Kaiser et al. and published in the *American Journal of Clinical Nutrition* discusses some of the popular myths regarding obesity. The study found no support for the commonly made recommendation that eating more fruits and vegetables promotes weight loss. Such recommendations are common, exemplified by the U.S. Department of Agriculture's "Choose My Plate" informational campaign, for example. What is often viewed as a commonsense prescription apparently only works to lower weight when it is combined with reduced intake of other energy sources. Fruit and vegetable consumption has demonstrable health benefits, but apparently weight loss is not one of them so long as individuals do not also reduce their intake of other foods.

'NUDGE' THEORY

According to behavioral economists, individuals are not always rational. Poorly informed individuals who follow perceived norms and exercise poor judgment make unconscious and irrational decisions. Irrational decisions contribute to undesired weight gain when individuals do not realize how much food they actually eat. A study by Brian Wansink and Jeffery Sobal, published in *Environment and Behavior,* concludes that test subjects underestimated the number of daily food-related

decisions they make by an average of more than 221 decisions in what the authors refer to as "mindless eating."

Sunstein and Thaler, in a 2003 *Chicago Law Review* paper, argue there is no clear difference between choice and coercion because those states represent two ends of a continuum. They argue that someone—a choice architect—is always deciding the default choice by providing the quantity and quality of information that frame people's choices. Sunstein and Thaler argue that choice architects should change default choices and provide information when people make irrational choices.

In their 2008 book, Thaler and Sunstein define a nudge as

> any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting fruit at eye level counts as a nudge. Banning junk food does not.

Often described as "libertarian paternalism," these nudges are intended to steer people toward decisions that they would choose if they were not subject to various decisionmaking flaws.

Systematic biases in behavior fall into two broad categories. First, "bounded willpower" problems arise when individuals suffer from persistent self-control problems associated with "hyperbolic discounting." Individuals are said to exhibit time inconsistency about discounting future tradeoffs between the present self and the future self. For example, an overweight person finds it hard to quit eating desserts but still wants to lose weight because his long-term welfare rises when he loses weight today. Education has been proposed to help overweight people better understand these tradeoffs and perhaps foster lower discount rates. Calorie labels are nudges based on the assumption that more informed consumers will make healthier choices.

A second category focuses on "cognitive biases" that prevent individuals from pursuing actions that improve their welfare. For example, a "status-quo bias" might lead individuals to stick with what they have rather than search for better alternatives.

Behavioral economists frequently propose setting default options that nudge people toward healthier eating. Plate shapes and sizes, lighting, color, and convenience are a few of the hidden environmental factors believed to increase consumption norms and decrease consumption monitoring. Wansink, in a 2004 *Annual Review of Nutrition* paper, offers the following default option changes aimed at lessening temptations to overeat:

- Store tempting foods in less-convenient locations (such as basements or the tops of cupboards).
- Do not leave serving bowls and platters on the dinner table.
- Reduce the convenience of stockpiled foods by boxing them up or freezing them.
- Replace short, wide glasses with tall, narrow ones.
- Reduce serving sizes and consumption by using smaller bowls and plates.
- Use smaller spoons rather than larger ones.

The following passage from *Nudge* shows the influence that Wansink's experimental research on "mindless eating" has had on nudge theory:

> In another Wansink (2006) masterpiece, people sat down to a large bowl of Campbell's tomato soup and were told to eat as much as they wanted. Unbeknownst to them, the soup bowls were designed to refill themselves (with empty bottoms connected to machinery beneath the table). No matter how much soup subjects ate, the bowl never emptied. Many people just kept eating, not paying attention to the fact that they were really eating a great deal of soup, until the experiment was (mercifully) ended. Large plates and large packages mean more eating; they are a form of choice architecture, and they work as major nudges. (Hint: if you would like to lose weight, get smaller plates, buy little packages of what you like, and don't keep tempting food in the refrigerator.)

Other experiments have also found that altering choice architecture influences eating. A 2011 *Judgment and Decision Making* paper by Paul Rozin et al. found that slight changes in the accessibility of foods in a cafeteria salad bar reduced intake by 8–16 percent. Making food slightly more difficult to reach (varying proximity by 10 inches) and changing sizes and accessibility of serving utensils were two such changes. Likewise, a 2012 *Journal of Public Health* paper by Andrew Hanks et al. found that, in a high school lunchroom, moving healthier foods to the "convenience line," where unhealthy foods were usually placed, increased sales of healthy foods by 18 percent and decreased sales of unhealthy foods by 28 percent.

"Loss aversion," another cognitive bias, is when people are disproportionately sensitive to the prospects of losing something compared with the prospects of gaining something. Getting people to pre-commit to healthy goals (e.g., exercising three days a week or skipping desserts) coupled with the risk of losing money are nudges that might help people honor their health goals.

CRITICISMS OF NUDGE THEORY

Empirical evidence indicates that nudges do not always work as planned. A 2007 *Appetite* paper by Barbara Rolls et al. found that altering plate sizes had no significant effect on energy intake for meals eaten in three laboratory experiments. For instance, participants made significantly more trips to the buffet when they were given the smallest plate in one of those experiments.

Adding "healthy" options to "unhealthy" meals is also problematic. A 2007 *Journal of Consumer Research* paper by Karen Wilcox et al. found that the mere presence of a healthy food option appeared to vicariously fulfill nutrition goals and provide consumers with a license to indulge, thus exerting ambiguous effects on overall diets. Psychologists also report "negative calorie illusion,"

whereby adding a healthy option to weight-conscious individuals' unhealthy meals decreases their perception of the meals' calorie content. According to a 2007 *Journal of Consumer Psychology* paper by Alexander Chernex, for example, weight-conscious participants estimated that a hamburger alone contains 734 calories but only 619 calories when accompanied by celery sticks.

Labeling requirements are designed to help individuals who routinely underestimate calories, fats, and other attributes of foods. But evidence so far does not clearly demonstrate that required labels result in healthier eating. A 2009 *Health Affairs* study by Brian Elbel et al. of New York City's 2008 law requiring restaurant chains to post calorie counts found no change in calories purchased after the law. The 2011 Finkelstein et al. *American Journal of Preventive Medicine* paper reached a similar conclusion in a study of menu-labeling regulation in King County, Wash. A 2011 *American Economic Journal: Economic Policy* study by Brian Bollinger et al. of mandatory calorie posting on purchase decisions at Starbucks found virtually no change in purchases of beverage calories. A 2013 *American Journal of Public Health* study by Julie Downs et al. examined the effects of providing daily, per-meal, or no calorie recommendations to randomized subsets of adult customers entering two McDonald's restaurants. They found no effect on purchases. A 2014 *Current Obesity Reports* paper by Sarah Rendell and Charles Swencionis found that calorie labeling did not influence what patrons of a large chain bakery/café ordered for lunch. Studies also suggest that restaurants claiming to serve "healthy" foods may steer customers to underestimate the caloric density of their foods and that customers are more likely to purchase higher-calorie side dishes at restaurants that claim "healthy" foods when compared with those not making such claims.

Conflicting evidence on nudge efficacy may stem from the fact that nudges are often based on laboratory experiments. There are well-known problems in extrapolating results from laboratory experiments to the real world. Participants' choices in experiments are influenced by factors that include financial incentives, how choices are framed, the nature of others' scrutiny, and participant selection. Real-world decisions are made under circumstances not so easily mimicked in laboratories. A 2013 *Obesity Reviews* literature review by L. R. Skov et al. of 12 studies altering choice architecture found that the studies were generally of short duration, had questionable methodology, and were not conducted in naturally occurring environments.

Conflicting evidence on nudge efficacy may stem from the fact that nudges are often based on laboratory experiments. There are well-known problems in extrapolating results from laboratory experiments to the real world.

Fallible architects / Overconfidence in nudge efficacy probably explains some rather ambitious claims. The 2011 Rozin et al. study claims that very small but cumulative decreases in food intake from modest changes in accessibility and sizes of serving utensils may be sufficient to "erase obesity" over a period of years. Likewise, Wansink's 2004 *Annual Review of Nutrition* study argues that small changes in choice architecture allow people to "effortlessly control their consumption and lose weight in a way that does not necessitate the discipline of dieting."

Nudge theory often assumes that choice architects exhibit superhuman traits. Choice architects, for example, supposedly escape much of the irrational decisionmaking that behavioral economists believe affects so many individuals, and they know all relevant information about individuals' true preferences. Behavioral economists rarely question why choice architects themselves would not be subject to the same decisionmaking flaws that other people are. Nicklas Berggren's 2012 *Review of Austrian Economics* study examined behavioral economics articles in 10 highly ranked economics journals from 2000 through 2009 to determine whether the authors had addressed the rationality or cognitive ability of policymakers. The main finding was that 20.7 percent of all articles contained a policy recommendation and that 95.5 percent of those did not contain any analysis of the rationality or cognitive ability of policymakers.

Choice architects are also implicitly assumed to not fall victim to the many presumptions and myths surrounding obesity, as previously discussed. These are:

- Small, sustained changes in energy intake or expenditure will produce large, long-term weight changes.
- Setting realistic goals in obesity treatment is important because otherwise patients will become frustrated and lose less weight.
- Large, rapid weight loss is associated with poorer long-term weight outcomes than is slow, gradual weight loss.

Previous discussion indicated various examples of overstated promises that a few small nudges can significantly dent population weight. These would appear to be based more on myths regarding "small changes" than on factual evidence.

MARKET NUDGING THEORY

It is no secret that many of us are concerned with our weight. A recent Gallup poll found that 51 percent of adult Americans want to lose weight, although only 25 percent are seriously working toward that goal. People were undoubtedly eating on smaller plates,

avoiding buffets, and skipping desserts for many years before behavioral economics came to light. Apparently, Americans are lowering caloric intakes; the U.S. Department of Agriculture reports that average daily caloric intake declined by 118 calories (about 5 percent) between 2006 and 2009 among working-age adults.

Markets nudge all the time. Thaler and Sunstein acknowledge that in their 2008 book, though they appear to strongly favor government nudges rather than market nudges when they argue, "Markets provide strong incentives for firms to cater to the demands of consumers, and firms will compete to meet those demands, whether or not those demands represent the wisest choices." Moreover, they state, "The key point here is that for all their virtues, markets often give companies a strong incentive to cater to (and profit from) human frailties, rather than to try to eradicate them or to minimize their effects."

This view suggests that sellers offering "unhealthy" products are the most profitable. An alternative view is that sellers can systematically profit when marketing "healthier" products to customers interested in controlling their weight. The finding that 51 percent of adult Americans want to lose weight indicates that many potential customers are looking for products that will help them to lose weight. Food and restaurant businesses have been increasingly experimenting with smaller plates and packages to meet growing consumer demand for products that help them control their weight. Research indicates that the number of small-plate and smaller-portion items at restaurants has grown 32 percent since 2009. Of course, few customers would single out calories as the only attribute of interest. Calories are one attribute, along with price, taste, convenience, appearance, size, storage, and others.

"Stealth health" is the tactic that food and restaurant businesses employ to make products healthier when they do not want to directly inform customers they are cutting fat or salt. A concern is that customers sometimes connect "healthy" with "less taste"—especially when foods are considered indulgences, such as mashed potatoes, gravy, stuffing, and other items typically loaded with sodium and fat. Otherwise, companies are quick to tout nutritional improvements for foods aimed at health-conscious consumers.

Evidence / A widely reported study by Shu Ng and Barry Popkin concludes that 16 of the nation's leading food and beverage companies sold 6.4 trillion fewer calories in 2012 than they did in 2007. Those companies had pledged to lower calories and have so far exceeded their 2015 goal by more than 400 percent. However, it remains unclear what effect this reduction in calories exerts on population weight. Consumers may substitute other products and alter their behaviors in other ways that make predictions ambiguous at best.

Clearer evidence comes from a 2013 U.S. Department of Agriculture study by Steve Martinez showing rapid growth of new products appealing to weight-conscious consumers. Health- and nutrition-related claims per product increased from 2.2 in 2001 to 2.6 in 2010, which Martinez interprets as competition fostering a more complete representation of products' health and nutritional attributes. The study suggests that growing demand for food products that contribute to overall health beyond basic nutrition provided incentives to manufacturers to supply and promote those products. Again, there is no direct evidence that population weight has changed as a result.

A 2011 Hudson Institute study of Nielsen sales data from 2007 through 2011 reports similar results. Food products from 15 of the largest food and beverage manufacturers were classified into "traditional" and "better-for-you" (BFY) categories. BFY products included those designated as "diet," "lite," "fewer calories," or "zero calories" (e.g., Lean Cuisine, Coke Zero, Trop50), as well as "good" foods including whole-grain products and healthier traditional product formulations, such as Cheerios, Dannon yogurt, and Nabisco Wheat Thins. Traditional products (e.g., Pepsi, Kellogg's Frosted Flakes, and Hellmann's Mayonnaise) accounted for 61.4 percent of sales, while "diet" and "good" products each accounted for 19.3 percent of sales. Combined, BFY products accounted for less than 40 percent of sales but more than 70 percent of sales growth. Again, there is no direct evidence that population weight has changed as a result.

Growing demand for food products that contribute to overall health beyond basic nutrition provided incentives to manufacturers to supply those products. There is no evidence that population weight has changed as a result.

Weight loss products / A survey of more than 6,000 people in six countries (Australia, Canada, India, South Africa, the United Kingdom, and the United States) found that more than half of consumers are interested in buying wearable technologies such as fitness monitors for tracking physical activity and managing their personal health. One report finds more than 200 mobile health care apps co-branded with health care organizations.

There are more than 40,000 health, fitness, and medical apps currently available. An estimated 8,786 disease prevention and healthy living apps are also widely available. Those apps focus on factors associated with overall wellness, such as healthy eating, weight management, fitness, healthy living, smoking cessation, stress management, and sleep. They display information, show

preloaded instructions for diet and fitness, record and display user-entered data, and track weight measurements over time.

One market test of apps is whether they encroach on the turf of more traditional weight-loss businesses. Falling share prices of several widely recognized diet companies suggest their businesses are being undermined by mobile technology. Jenny Craig has performed poorly with its plan of prepackaged meals with nutritional counseling. Nutrisystem has struggled with its model that provides home-delivered meal plans and nutritional counseling. Weight Watchers, too, has struggled with attracting new customers. Weight Watchers in 2012 added a mobile app for tracking food and activity, but the feature was an add-on to its paid subscription. Many apps, however, are free and do not require monthly payments for a base subscription bundled with services such as menus and counseling.

In sum, rapid expansion of weight-loss and health apps is strong evidence that consumers are sampling the growing number of nudges offered by markets for weight loss and health apps. Markets are, in effect, the choice architects of these nudges and businesses have financial incentives to meet this growing demand. However, the evidence on whether these nudges are effective is more promising than certain at this point.

MARKET AND GOVERNMENT NUDGING

Nudge theory can play a role in helping us to lose weight, despite the reality that all choice architects—government or market—are imperfect. Experimentation is the key to overcoming choice architects' imperfections, including flawed decisionmaking, basing nudges on pervasive myths regarding weight loss, and the inability to know individual preferences. Any of those imperfections could derail people's weight loss efforts, but market choice architects hold significant advantages over those in governments.

Businesses face "market tests" in a world where consumers may reject products that fail to deliver value. Consumers eventually understand whether marketing claims are real or not, with poorly designed products being improved or simply removed from markets. So far, the evidence is imperfect on whether currently available products result in weight loss, but ongoing feedback from consumers helps to weed out poor designs. All product attributes—including calories, size, packaging, taste, simplicity, and pricing—receive market scrutiny.

Government choice architects do not face comparable "market tests" and thus face greater problems overcoming their imperfections. Poor products do not directly jeopardize the financial solvency of governments because they do not face profit constraints. Businesses that provide nudges that do not enhance consumer welfare are not profitable for long in competitive environments such as those aimed at weight-conscious consumers.

Thaler and Sunstein argue that we should not be too concerned about imperfect or ineffective nudges. They argue that the noncoercive nature of nudges allows easy exiting by those wishing to avoid them—including nudges that are poorly designed. This view suggests there is little harm in designing numerous nudges because some might help people to meet their weight-loss goals. This is not an approach, however, that allows researchers to easily parse out effective from ineffective nudges or discern what interrelationships might exist among the many nudges. It is also possible that nudges that turn out to be harmful might never be discarded.

This view that ineffective but easily avoided nudges are not harmful fails to recognize the superiority of markets in helping choice architects overcome their various imperfections. Consumers directly signal to market choice architects which products are ineffective or detrimental. They simply stop buying them, thus leaving little doubt that product attributes do not meet their approval. Harmful products might even yield costly lawsuits directly aimed at businesses. Businesses read these signals routinely because they threaten their financial health.

Government nudging has fewer feedback mechanisms to help get the nudges "right." Government revenues do not rise or fall to signal the good from the bad. Government employees typically are not fearful that failed products will put their jobs in jeopardy. Effective feedback becomes even more problematic when governments supply many nudges based on the view that they pose little harm because citizens can easily avoid them. Feedback is limited at best for government choice architects in an environment where ineffective nudges do not directly jeopardize their jobs or financial viability.

Markets are also superior at being true to the noncoercive spirit of nudging theory. Businesses do not have incentives to keep nudging people who are unwilling to change their behavior. Businesses may try to educate customers unwilling to buy their products, but financial incentives are a clear limit facing businesses that continue nudging consumers toward products they do not purchase. Low-calorie cookies, for example, may sit on the shelves no matter where the grocer locates them or how many advertising dollars are invested. Markets will eventually get the message and either alter product attributes or drop products altogether.

Governments have considerably more latitude to nudge people repeatedly toward behavior that choice architects believe improves their lives. It can be difficult to determine when changes in choice architecture cross the line into coercion, especially when government choice architects believe people exhibit decisionmaking flaws or are resistant to educational nudges. A slippery slope problem may arise. Noncoercive but ineffective nudges may engender subtle, but perhaps coercive, policies (e.g., taxes and subsidies) as government choice architects remain convinced that people's behavior should change. Government choice architects therefore must exercise considerable restraint in resisting urges to "ramp up" the pressure on citizens who resist government nudges.

Role for government / An appropriate role for government is to facilitate market correction of fraudulent practices and claims. For instance, the Federal Trade Commission recently fined sev-

eral weight-loss businesses $34 million after it concluded that they made deceptive advertising claims that their products would help people lose weight with little effort. The $34 million included a $26.5 million settlement against Sensa Products, which markets a dietary supplement called Sensa. A Sensa advertisement stated that "whether you need to lose 10 pounds, 50 pounds, or more, now you can without dieting. Simply sprinkle Sensa on, eat all the foods you love, and watch the pounds come off." Policies that penalize or remove fraudulent claims help nudge weight-conscious consumers toward effective products designed by choice architects in markets.

Another potential role for government is to experiment with market-based nudges on its own workforce or perhaps to experiment with social programs whose costs are influenced by obesity. However, government may be resistant to utilizing nudges that yield cost savings because government does not face profit motives and thus may be uninterested in raising profit. Government choice architects may also prefer designing their own nudges, even though they face higher hurdles in designing effective nudges than market choice architects do.

CONCLUSION

Obesity remains a serious health problem and it is no secret that many people want to lose weight. Behavioral economists typically argue that nudges help individuals with various decisionmaking flaws to live longer, healthier, and better lives. Even if the obese are not subject to those flaws, many are still interested in products that help them lose weight.

Nudges remain well-intentioned but blunt tools for lowering population weight. This conclusion is not surprising given the current state of knowledge. Researchers have yet to reach a consensus on what specific causes for excessive weight gain are most important in explaining rising obesity prevalence. There are also relatively few facts about how to lose weight successfully, and the evidence does not support many widely held beliefs about effective weight loss. The empirical evidence also indicates that nudges do not always work as planned.

Nonetheless, market nudges play a potentially important role in helping citizens to control their weight. The evolving markets in dieting apps, weight-loss programs, and "healthy" products indicate that many consumers are willing to purchase products that help them with their weight-loss goals. However, the evidence so far is more promising than conclusive that markets have been effective in nudging people to lose weight.

Experimentation is the key to overcoming choice architects' imperfections, including flawed decisionmaking, basing nudges on various myths regarding weight loss, and the inability to know individual preferences. Choice architects in markets hold significant advantages over those in government in their efforts to overcome these shortcomings. Unlike government, businesses face "market tests" in a world where consumers reject products that fail to deliver value. Markets also hold an advantage in sticking to the noncoercive spirit of nudging theory. *R*

READINGS

- "Better-for-You Foods: It's Just Good Business," published by the Hudson Institute. October 2011.
- "Calorie Labeling and Food Choices: A First Look at the Effects on Low-Income People in New York City," by Brian Elbel, Rogan Kersh, Victoria L. Brescoll, et al. *Health Affairs*, Vol. 28, No. 6 (2009).
- "Calorie Posting in Chain Restaurants," by Brian Bollinger, Phillip Leslie, and Alan Sorensen. *American Economic Journal: Economic Policy*, Vol. 3, No. 11 (2011).
- "Choice Architecture as a Means to Change Eating Behaviour in Self-Service Settings: A Systematic Review," L. R. Skov, S. Lourenço, G. L. Hansen, et al. *Obesity Reviews*, Vol. 14, No. 3 (2013).
- "Environmental Factors that Increase the Food Intake and Consumption Volume of Unknowing Consumers," by Brian Wansink. *Annual Review of Nutrition*, Vol. 24 (2004).
- "Healthy Convenience: Nudging Students toward Healthier Choices in the Lunchroom," by Andrew S. Hanks, David R. Just, Laura E. Smith, et al. *Journal of Public Health*, Vol. 34, No. 3 (2012).
- "Increased Fruit and Vegetable Intake Has No Discernible Effect on Weight Loss: A Systematic Review and Meta-analysis," by Kathryn A. Kaiser, Andrew W. Brown, Michelle M. Brown, et al. *American Journal of Clinical Nutrition*, June 25, 2014 (online).
- "Introduction of New Food Products with Voluntary Health- and Nutrition-Related Claims, 1989–2010," EIB-108, by Steve W. Martinez. Economic Research Service, U.S. Department of Agriculture, February 2013.
- "Libertarian Paternalism Is Not an Oxymoron," by Cass R. Sunstein and Richard H. Thaler. *University of Chicago Law Review*, Vol. 70, No. 4 (2003).
- "Mandatory Menu Labeling in One Fast-Food Chain in King County, Washington," by Eric A. Finkelstein, Kiersten L. Strombotne, Nadine L. Chan, et al. *American Journal of Preventive Medicine*, Vol. 40, No. 2 (2011).
- "Mindless Eating: The 200 Daily Food Decisions We Overlook," by Brian Wansink and Jeffery Sobal. *Environment and Behavior*, Vol. 39, No. 1 (2007).
- "Myths, Presumptions, and Facts about Obesity," by Krista Casazza, Kevin R. Fontaine, Arne Astrup, et al. *New England Journal of Medicine*, Vol. 368, No. 13 (2013).
- *Nudge: Improving Decisions about Health, Wealth, and Happiness*, by Richard H. Thaler and Cass R. Sunstein. Penguin Books, 2008.
- "Nudge to Nobesity I: Minor Changes in Accessibility Decrease Food Intake," by Paul Rozin, Sydney Scott, Megan Dingley, et al. *Judgment and Decision Making*, Vol. 6 (2011).
- "Point-of-Purchase Calorie Labeling Has Little Influence on Calories Ordered Regardless of Body Mass Index," by Sarah L. Rendell and Charles Swencionis. *Current Obesity Reports*, June 26, 2014 (online).
- "Supplementing Menu Labeling with Calorie Recommendations to Test for Facilitation Effects," by Julie S. Downs, Jessica Wisdom, Brian Wansink, et al. *American Journal of Public Health*, Vol. 103, No. 9 (2013).
- "The Biasing Health Halos of Fast-Food Restaurant Health Claims: Lower Calorie Estimates and Higher Side-Dish Consumption Intentions," by Pierre Chandon and Brian Wansink. *Journal of Consumer Research*, Vol. 34, No. 3 (2007).
- "The Dieter's Paradox," by Alexander Chernev. *Journal of Consumer Psychology*, Vol. 21, No. 2 (2011).
- "The Healthy Weight Commitment Foundation Pledge. Calories Purchased by U.S. Households with Children, 2000–2012," by Shu Wen Ng and Barry M. Popkin. *American Journal of Preventative Medicine*, Vol. 47, No. 4 (2014).
- "Time for Behavioral Political Economy? An Analysis of Articles in Behavioral Economics," by Niclas Berggren. *Review of Austrian Economics*, Vol. 25, No. 3 (2012).
- "Using a Smaller Plate Did Not Reduce Energy Intake at Meals," by Barbara J. Rolls, Liane S. Roe, Kitti H. Halverson, et al. *Appetite*, Vol. 49 (2007).
- "Vicarious Goal Fulfillment: When the Mere Presence of a Healthy Option Leads to an Ironically Indulgent Decision," by Karen Wilcox, Beth Vallen, Lauren Block, et al. *Journal of Consumer Research*, Vol. 36, No. 3 (2009).