The number of obese Americans has increased dramatically over the last 40 years, and in 2001 the nation’s surgeon general went so far as to call obesity an epidemic. Since that landmark declaration, efforts to combat obesity have slowly grown, and although no one knows exactly why, the obesity rate among children and adolescents has leveled off. It is still, however, alarmingly high. One-third of children and two-thirds of adults are overweight or obese, posing a daunting public-health challenge. Those adults are more likely to develop serious illnesses like heart disease, diabetes and hypertension. While diet programs emphasize personal responsibility, public-health experts blame a multitude of factors — many beyond individuals’ control — for the societywide epidemic. Prominent among those factors are low consumption of fruits and vegetables and America’s “obesogenic” environment, which promotes increased portion size, non-healthful foods and physical inactivity.
PREVENTING OBESITY

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**The Issues**

A nnie has struggled with her weight since her 20s, when she would frequently cycle between dieting and binging. Back then, her highest weight was 150 pounds on her 5-foot-7-inch frame. She would be “thrilled” to see that number on her scale today, but she has not been able to lose weight at all since her second pregnancy 20 years ago. Now, at age 61, she is over 200 pounds.

She exercises frequently, but she eats even more. “Food is like a drug for me,” says Annie, who lives in restaurant-dense New York City. “People think I’m a laid-back, confident person, but underneath I’m very anxious, and food helps me calm down.”

This time around, Annie is trying something new. In addition to going to Weight Watchers — again — she is seeing a therapist who specializes in food issues so she can “develop a new groove in my brain. Now I keep a food diary,” she says, “and when I need to vent, I write it there. It’s become my lifeboat.” Annie has gradually lost 35 pounds since January.

“Obesity is common, serious and costly,” according to the latest study from the Centers for Disease Control and Prevention (CDC). Health officials report that in 2009, nine states had adult obesity rates of 30 percent or more, compared with only three states in 2005 and none in 2000. The highest rate — 34.4 percent of the adult population — was in Mississippi. Nationwide, 72.5 million adults are obese, or 26.7 percent of the adult population.

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Seventeen-year-old Marissa Hamilton checks her progress at California’s Wellspring Academy, which combines a weight-loss program and academic courses. More than a third of the nation’s children and two-thirds of the adults are either overweight or obese. Excessive weight has been linked to diabetes, heart disease, stroke and increased risk of certain types of cancer.

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“We need intensive, comprehensive and ongoing efforts to address obesity,” said CDC Director Thomas Frieden. “If we don’t, more people will get sick and die from obesity-related conditions such as heart disease, stroke, type 2 diabetes and certain types of cancer.” Obesity and overweight have been clearly linked to increased risk of kidney cancer, endometrial cancer and postmenopausal breast cancer. Growing evidence suggests a link to increased risk of colorectal and gall bladder cancer as well.

The Congressional Budget Office (CBO) reports that health care spending for all adults increased substantially over the last two decades, but that the growth rate was far faster among the obese. “Spending per capita for obese adults exceeded spending for adults of normal weight by about 8 percent in 1987 and by about 38 percent in 2007,” according to the CBO. The growing gap reflects changes in the health status of the obese population as well as new, costly treatments for conditions particularly common to obese people, the CBO said.

By definition, an obese person has a body mass index (BMI) of 30 or more, calculated by multiplying a person’s weight in pounds by 703 and then dividing by the square of their height in inches. For example, a 5-foot-4-inch woman is obese at 174 pounds, and a 5-foot-10-inch man at 209 pounds or more.

BMI scores are interpreted differently for children because the amount of body fat changes with age and differs between girls and boys. So a 10-year-old boy with a BMI score of just over 22 would be considered obese; a 10-year-old girl would be obese with a score of 23.

The prevalence of obesity has more than tripled among children and teens since the mid-1970s, rising from 5 percent to 17 percent, with the most rapid increase occurring in the first two decades and a leveling off during the past 10 years. Though childhood obesity rates seem to have plateaued,
they remain stubbornly high. In response, President Obama formed a special White House Task Force on Childhood Obesity, and first lady Michelle Obama launched her “Let’s Move” campaign with the ambitious goal of ending childhood obesity in a generation.

“Most experts no longer see obesity as a matter determined solely by personal responsibility,” according to the journal Health Affairs. Health experts point to an array of familiar factors behind the epidemic:

- More desk jobs;
- Communities designed for driving;
- More time spent in front of electronic screens;
- Declining physical education and recess in schools;
- Vending machines in schools;
- Increasing caloric intake;
- Increasing portion sizes at home and in restaurants;
- Less home-cooking and more eating out;
- More advertising of unhealthy foods, especially directed at children;
- Price declines for low-nutrient, high-calorie foods like soda, fast food; and
- Price increases for more nutritious foods, like fruits, vegetables, lean meats, low-fat dairy products.

While it may seem counterintuitive, several studies show that low-income people have among the highest obesity rates. It’s not exactly clear why, but several anti-hunger groups say limited access to healthy food in neighborhoods dense with convenience stores and fast food outlets is part of the problem. Fewer opportunities for physical exercise may be another.

Low-income women are particularly vulnerable. “If there is limited food in the house, a low-income mother may give her children priority for certain foods, like fruits and vegetables, and take whatever is left for herself,” says Heather Hartline-Grafton, senior nutrition policy analyst at the Food Research and Action Center, a national anti-hunger organization in Washington, D.C. “Those foods may be cheap foods that can fill stomachs. And when food does become available, she may overeat.”

Government farm policy doesn’t help, say many public health experts, but not because it has kept the price of the ingredients in sugary cereals and sodas low. Those costs represent a small proportion of those foods’ retail price. Rather, the bigger problem with farm policy, say some analysts, is the lack of incentive for farmers to grow fruits and vegetables. “If a corn farmer were to put part of his land into vegetables, he would disqualify himself from being able to get direct payments or subsidies from the government,” says David Wallinga, director of the Food and Health Program at the Minneapolis-based Institute for Agriculture and Trade Policy. “That’s why we don’t produce enough fruits and vegetables.” And that has kept prices high, Wallinga says.

Whether it’s because of the expense or other reasons, Americans aren’t eating nearly enough vegetables, according to the CDC, which issued a comprehensive nationwide behavioral study in September of fruit and vegetable consumption. It concluded that only 26 percent of adults eat vegetables three or more times a day, which is far below the health objectives set by the federal government a decade ago.

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One-Quarter of U.S. Adults Are Obese

More than a quarter of the adults in the United States — 26.7 percent — are obese. Between 25 percent and 29 percent are obese in 33 states, and more than 30 percent are obese in nine, mostly Southern states. Colorado and the District of Columbia are the healthiest, with rates under 20 percent. No states, however, have met the government’s “Healthy People” goal of reducing obesity prevalence to 15 percent.

Self-reported Prevalence of Obesity Among Adults, 2009

(defined as a body mass index* of 30 or higher)

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* BMI is calculated by dividing a person’s weight in pounds times 703 by the square of their height in inches

Best-Educated Americans Have Lowest Obesity

Obesity goes down as household income rises (left). About a quarter of the adults in households that earn $50,000 or more are considered obese, compared with more than a third of those in households earning less than $15,000. Similarly, obesity declines as education levels rise (right).

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<th>Percentage of Obese Adults by Household Income, 2007-2009</th>
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<td>Less than $15,000</td>
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<th>Percentage of Obese Adults by Educational Level, 2007-2009</th>
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<td>Did not graduate high school</td>
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<td>Attended college or technical school</td>
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<td>Graduated college or technical school</td>
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Source: “F As In Fat: How Obesity Threatens America’s Future,” Trust for America’s Health, June 2010

But the evidence is mixed on whether eating more fruits and vegetables will help Americans reverse the obesity trend. “There are studies that show higher fruit and vegetable consumption is associated with lower body weight, no difference in body weight or, in fact, higher body weight,” says Richard Mattes, a professor of foods and nutrition at Purdue University. For one thing, increasing healthy eating without cutting back on unhealthy food just adds more calories.

Mattes thinks blaming lack of access to healthy foods or higher costs of fruits and vegetables may be too easy. “Skim milk and regular milk cost about the same. Diet soda and regular soda cost about the same,” says Mattes. “But affluent people consume more skim milk and diet soda, and low-income people consume more regular milk and regular soda, so it’s not just a question of economics.” He says education about healthy eating may be more important.

As the first lady travels the country raising awareness about obesity, debate continues on the best way to address it. Here are some of the key policy questions being considered by public-health experts, physicians, food producers, government regulators and politicians:

**Should cities and states impose excise taxes on sugar-sweetened beverages?**

Over the past 30 years, the average American has doubled the amount of calories consumed each day from sugar-sweetened beverages. 12 Taking inspiration from the impact that stiff cigarette taxes have had on smoking, organizations like the American Academy of Pediatrics, the Institute of Medicine and the American Public Health Association are calling for higher taxes on sugary sodas, energy drinks, fruit drinks and sweetened teas. Their goal is to cut consumption and reduce the number of Americans who are overweight and obese, while at the same time raising revenue that could be used for public-health initiatives to combat obesity.

“It’s a bad idea,” says Kevin Keane, senior vice president for public affairs at the American Beverage Association. “Sugar-sweetened beverages account for only 7 percent of the calories in the American diet, so how can you say it’s a driving force behind obesity? It just defies logic.”

“The bottom line is that it is a lot of calories — about 175 calories per person per day,” says Kelly Brownell, director of the Yale Rudd Center for Food Policy & Obesity, “and the industry can’t trivialize it by saying that it is a small percentage.” In fact, adding that many calories to someone’s daily diet could cause them to gain about 18 pounds in a year, says Brownell.

However, that weight gain would be self-limiting as calories are used to repair, replace and carry that extra body tissue. 13

There is “a growing but mixed body of research” indicating that sugar-sweetened beverage consumption is associated with “increases in calorie intake, weight gain, obesity and a variety of other negative health consequences,” according to the Robert Wood Johnson Foundation, which funds health-care research. 14 Exactly what mechanisms are at work are not entirely clear. It could be that people don’t find soda filling and so don’t cut back on eating to compensate for the added liquid calories, although studies are mixed on whether a soda is any less filling than a calorie-equivalent cookie. 15 Or people, especially children, who habitually drink sugary beverages, may find more filling but less sweet foods, like fruits and vegetables, unpalatable. 16

Currently, 33 states apply an average 5.2 percent sales tax on soft drinks, compared to the 1 percent sales tax on foods and beverages averaged across all states. 17 States have used these soft-drink taxes primarily to raise revenue, and several studies have found that they are too small to have much, if any, impact on consumption or weight.

David Frisvold, an economist at Emory University, examined soft-drink consumption and weight of children and adolescents in states where soda tax rates rose over the years. 18 “We
found there was a modest decrease in consumption,” says Frisvold. A 1 percentage point increase in the soft drink tax reduced soda calories consumed by about 8 calories. But children and teenagers just substituted whole milk, trading one set of calories, albeit more nutritious, for another. “The net effect was no change in obesity.”

A similar study of children by other researchers found that soda taxes “are unlikely to have measurable effects on soda consumption or obesity overall.” To have a noticeable impact, they concluded, taxes would need to be much larger. 19

That’s just what “some 20 states and cities, from New Mexico to Baltimore, contemplated . . . this spring,” but the reaction against new excise taxes on sweetened beverages was “swift and fierce.” New Yorkers Against Unfair Taxes, set up by the beverage industry, successfully campaigned against a penny per ounce tax on sweetened drinks proposed by the governor that quickly was dubbed “the fat tax.” In Philadelphia, industry opposition helped prevent a proposed 2-cents-an-ounce tax from reaching a vote. 20

In Kansas, soda-company employees “swarmed” the state Senate to object to a tax that would have increased the price of a 12-ounce soda by about 10 cents, and the proposal never made it out of committee. But Republican state Sen. John Vratil isn’t giving up. “I figured it wouldn’t pass in the first year,” he said. “It normally takes two or three years to educate legislators.” 21

He will have to convince voters, too. “I don’t think people are looking for more taxes on their groceries,” says Keane. “People recognize that once government goes into the grocery cart to grab more revenue, where will they stop?” he says. Several independent
— not just access to healthy food — factors like people's knowledge about using healthy foods. 22

While bringing supermarkets to low-income communities may be a long-term solution, Gittelsohn says it makes sense in the short term to work with what's already there. “If you go to Baltimore city, there may be 30 or 40 supermarkets, but there may be as many as 1,000 corner stores and as many carry-out restaurants, and then there are fast-food restaurants,” he says.

The Food Trust and the Philadelphia health department have such a program, called the Healthy Corner Store Initiative. So far about 40 corner stores have signed up, with a goal of 1,000 by the end of 2011. Stores agree to carry water and 100 percent fruit juice, baked chips and fruit salad. “We know anecdotally that the fruit salad is selling,” says Weidman. “Kids tend to buy what is in front of them, and when you combine that with our nutrition education in the schools, you can really have an impact.”

Gittelsohn has conducted several corner-store studies to try and assess more scientifically whether these programs lead to healthier eating. Like the Philadelphia program's nutrition-education component, Gittelsohn’s interventions also tried to increase demand for healthy foods as well as supply, using strategies like in-store promotions. The majority of his studies show an impact on healthy-food purchases, and where diet has been assessed, “less fatty food consumption and more fruit and vegetable consumption.”

But Gittelsohn’s studies did not show an improvement in weight and health. “I’ve looked at it, but I didn’t see an impact,” he says. One problem may be that his studies were small; another is that it can take years to reduce obesity and diabetes rates. Or it could be that shoppers are compensating by purchasing less healthy foods from other stores. The USDA is currently accepting applications for a much larger, longer-term study.

— Barbara Mantel

3 Treuhaft and Karpyn, op. cit.

Eating healthy foods like fresh fruit and vegetables instead of high-calorie junk food is a challenge in low-income neighborhoods, which have far fewer chain supermarkets and more convenience stores than upscale neighborhoods.

— Barbara Mantel

3 Treuhaft and Karpyn, op. cit.

Eating healthy foods like fresh fruit and vegetables instead of high-calorie junk food is a challenge in low-income neighborhoods, which have far fewer chain supermarkets and more convenience stores than upscale neighborhoods.
Will menu labeling help reduce obesity?

Four years ago, aching joints sent 42-year-old Kim Hendren to a rheumatologist, who said the cause was her weight. So she went on a doctor-supervised diet and dramatically ramped up her exercise. After gaining more than 100 pounds over 20 years, she lost it all in just one. But one of the biggest challenges that year was eating out, says Hendren, who lives in Indianapolis. “It’s hard to judge if that chicken salad has mayonnaise and is high in fat, and it’s really embarrassing to have to ask for that kind of information,” says Hendren. “But I had to, and I always felt like I was putting people out.”

Americans now consume an estimated one-third of their total calories on foods prepared outside the home, and most of the time, customers, like Hendren, have trouble accurately estimating the calorie count. That is going to change soon, at least at some restaurants. Tucked inside the health care reform bill signed into law last February was a little-noticed requirement mandating calorie posting at restaurant chains with 20 or more locations and for vending machine operators with 20 or more machines.

The guidelines require calorie counts on menus, menu boards and drive-thru boards in the same size type as the menu item or its price, whichever is larger. The calorie count must be accurate within 10 calories, and on vending machines the information must be clear and conspicuous.

The federal law follows action at the local level. By 2009, 13 cities, counties and states had passed legislation requiring menu labeling, including California, Oregon and Maine, but not without vigorous opposition from the restaurant industry. New York City was the first jurisdiction to require it, in 2008, but only after the city successfully defended itself against a lawsuit filed by the New York State Restaurant Association, which said the labeling requirements would be too costly, impractical and a violation of restaurateurs’ free speech. The association, however, supported passage of the federal law because it provides uniformity, says Vice President Melissa Fleishut.

Whether it will help to reduce obesity is less clear. “There are over 30 studies showing a link between eating out and obesity,” says Margo Wootan, director of nutrition policy at the Center for Science in the Public Interest, a consumer advocacy organization that has lobbied for menu labeling for years. “We don’t expect menu labeling to cure obesity,” says Wootan. “It is just one part of the solution, but it is an important one.”

 Marion Nestle, a sociology professor at New York University and the author of Food Politics: How the Food Industry Influences Nutrition and Health, supports menu labeling but sees its purpose more narrowly. Nestle calls it “a great experiment” and a “terrific opportunity to educate people about calories,” so they can then apply that knowledge elsewhere. But she doesn’t expect it to have a direct impact on obesity. “Probably not,” she says. “It will help some people, but I doubt it will help very many. It’s just too early to say.”

While there have been some studies examining menu labeling’s impact...
on caloric intake, most have been experimental or in classrooms, and the results have been mixed. Recently, however, researchers have conducted a few real-world studies in New York City of how people ate before and after menu labeling.

“We did not see any change in the total number of calories purchased,” says Brian Elbel, a professor of medicine and health policy at New York University. Two weeks before New York City’s law went into effect, Elbel’s group collected receipts and survey responses from adults at 14 fast-food restaurants in low-income, minority communities and then again four weeks after calorie posting became mandatory. As a control, the researchers also monitored five restaurants in Newark, N.J., which does not require menu labeling.

The percentage of adults who said they noticed calorie information increased sharply in New York City, and a quarter of those also said it influenced their choices. But on average, calorie posting did not make a difference. In fact, the average number of calories purchased actually went up very slightly.

Julie Downs, a research professor of social and decision science at Carnegie Mellon University, suggests several reasons why menu labeling might not work: Consumers, especially at fast-food restaurants, may care more about price and taste than calories, and it’s time consuming to count up calories at every meal. In addition, “It might be hard to make sense of those numbers without a pretty good understanding of how many calories you should have in a day and what you should be eating at each meal,” says Downs.

But Elbel doesn’t want to draw too strong a conclusion from his team’s work. “I don’t think we can say that labeling is not effective from just one study. We need more research.”

One other published, controlled study of the New York City experience that was much larger showed calorie labeling did have an impact, albeit a small one. Stanford University researchers convinced Starbucks to provide them with details of every transaction at its stores in New York City for three months prior to mandatory calorie posting and 11 months after it began. Boston and Philadelphia stores were the study’s controls.

In New York, average calories per transaction did drop after mandatory menu labeling took effect, but by only 15 calories, or 6 percent. Even if that drop were seen at every chain restaurant in the country, the researchers roughly calculate that Americans would cut their average calorie intake each day by 30 calories, still not enough to have a major impact on obesity, according to the Stanford team.

But Wootan of the Center for Science in the Public Interest was “ecstatic” when she saw the Starbucks results. Some experts estimate that cutting back energy intake by only 100 calories per day could prevent weight gain in over 90 percent of the population. “So in that sense, if people cut 30 calories a day, that’s a good step towards addressing obesity,” she says.

Conceivably, the impact of menu labeling on obesity could actually be larger. By anonymously tracking customers who used Starbucks debit cards, the Stanford team found that a subgroup — the customers who had previously been consuming the most calories — cut their calorie count by 26 percent. Still, there’s no way of knowing if they were overweight.

If menu labeling’s direct impact on consumers’ choices is uncertain, perhaps it will have a direct impact on restaurants themselves, inducing them to reformulate their products or offer healthier options, making it easier for consumers to cut calories. There is anecdotal evidence of changes here and there in advance of the national rules, but plenty of high-caloric options remain, like Applebee’s New England fish and chips (1,910 calories), Chili’s Big Mouth Bites (1,930 calories) and Chipotle’s chicken burrito (1,750 calories). The government recommends consuming 2,000 calories in an entire day.

Even if restaurants do put healthier items on the menu, it doesn’t mean people will order them, or if they do that they will lose weight. “There are studies that show people do compensate for eating healthier earlier in the day,” says Elbel. “They may eat more later on.”

Should the government restrict food marketing to children?

Children and teenagers watch, on average, about 3.5 hours of television every day. For the youngest viewers, food products dominate the advertising they see, and the vast majority of those ads are for products high in sugar, fat or sodium.

As any parent knows, advertising and marketing campaigns go far beyond television. Children can play Sudoku with Lucky Charms pieces on “Millsberry,” the General Mills’s website, download a Big Mac screensaver from the McDonalds Facebook page and follow Pepsi on Twitter.

In 2006, an Institute of Medicine report concluded that children’s diet and health were suffering as a result and called on the food, beverage and restaurant industries to shift their marketing toward healthier products.

In response, a coalition of major U.S. food companies partnered with the Council of Better Business Bureaus in 2006 to launch the Children’s Food and Beverage Advertising Initiative (CFBAI) and promised to devote more advertising to products of higher nutritional quality. Sixteen companies are now members, accounting for more than two-thirds of the money spent on children’s food and beverage advertising on television.

Four of the companies — Cadbury, Coca-Cola, Hershey and Mars — pledge...
not to advertise any food and beverage products on programming for children younger than 12, and the remaining firms pledge that 100 percent of their children's advertising would be for self-designated "better-for-you" products. Covered media include television, radio, print, the Internet, and since January, cell-phone marketing. 35 Marketing on packaging or in stores is not covered.

"The food industry and the advertising industry have spent billions on reformulating food, changing advertising and putting together public-service announcements," says Dan Jaffe, executive vice president for government relations at the Association of National Advertisers. "There is more to be done, but the critics are never going to be satisfied."

Perhaps the most favorable assessment of the industry initiative comes from researchers at the University of Illinois, Chicago, who compared TV advertisements before and after the initiative was launched. They found that exposure to ads for sweets fell 41 percent for 2-to-5-year-olds, 29 percent for 6-to-11-year-olds and 12 percent for teenagers. Beverage ads dropped by about 27-30 percent across the three age groups, but exposure to fast-food ads rose, about 5 percent, 12 percent and 20 percent, respectively. 36

Calling the changes “positive,” the authors nevertheless said “the bar was set so low” prior to 2006, with more than 90 percent of ads seen by children for products high in fat, sugar or sodium, that the industry’s voluntary initiative “is likely to be inadequate.” 37

More critical still are researchers from the University of Arizona, who used the U.S. Department of Health and Human Services’ “Go-Slow-Whoa” food-rating system. According to the system, Whoa products should be consumed only on special occasions, Slow products at most several times a week and Go products, like fruits and vegetables, anytime.

The study found that in 2005, 84 percent of foods marketed to children on television were for Whoa products; in 2009, that decreased “only to 72.5 percent.” At that pace, the study said, “it would take until 2017 for nutritionally poor Whoa products to decline to only half of all foods marketed to children and until 2033 for them to disappear entirely.” 38

But Elaine Kolish, director of the advertising initiative, objects to the “Go-Slow-Whoa rating system. “Cheerios is a Whoa food, and yet it has only 1 gram of sugar [per 1 cup serving],” says Kolish. “In what universe should Cheerios be in the Whoa category?”

Several public-health organizations say the biggest problem with the food and beverage industry initiative is the lack of a uniform nutrition standard. Instead, each company decides the standards it will use, subject to GFBAI approval. “They are cleverly crafted to allow in products that shouldn’t be marketed to kids,” says Wootan of the Center for Science in the Public Interest. “McDonalds, for instance, has a pretty good sugar standard but no sodium standard, so that lets in more salty burgers and fries. Cereal companies have pretty good sodium standards but pretty weak sugar standards, which lets in a lot of sugary cereals.” Cocoa Puffs, Lucky Charms, Trix and Fruit Loops are all “better-for-you” foods.

According to Yale’s Rudd Center, “not one cereal marketed directly to children in the United States would be allowed to advertise to children on television in the United Kingdom,” where the rules are much stricter. The center also said company efforts to reformulate cereals are inadequate, “in most cases, the equivalent of reducing sugar content from 3 1/2 tsp to 3 tsp per serving.” 39

“The criticism is overblown,” says Kolish. General Mills, for instance, has announced that it will reduce grams of sugar per serving into the single digits over the next few years. “We are working toward gradual improvement,” she says, “because you can’t change foods instantaneously and have consumers accept them.” Companies need flexibility to make these adjustments, says Kolish, and a uniform standard would make it difficult for companies to comply.

But that’s what the food and beverage industry is about to get. Congress directed the Federal Trade Commission (FTC) to work with the CDC, the Food and Drug Administration and the Department of Agriculture to develop model nutrition standards for marketing to children ages 2-17. The interagency working group issued draft standards in December 2009, and food and beverage companies did not like what they saw. 40

“They are overly stringent and overly restrictive, and they will kill all the advertising that exists,” says Jaffe. “We think they are extreme, and there are virtually no foods, whether it is a kid’s food or an adult food, that would meet these tentative guidelines,” says Kolish.

The Center for Science in the Public Interest created a chart showing which food products could be marketed to children under the draft guidelines. Fat-free milk makes the cut, and so does apple juice, some peanut butters, some crackers, several low-fat and non-fat yogurts, whole grain Pop-Tarts, low-fat Fudgsicles, and one or two cereals. And of course fruits and vegetables. “It would get rid of the junk, which it should. I mean that’s the point,” says Wootan.

Jennifer Harris, director of marketing initiatives at Yale’s Rudd Center and a fan of the guidelines, estimates that 5 percent or fewer of foods currently marketed to children would meet them. “I believe that food companies would need to come up with brand-new products, and that is why they are so opposed,” she says. Or they could not advertise to children, but that’s unlikely. “Advertising

Continued on p. 808
**1800s** Obesity and its complications raise concern.

1835
Belgian statistician Adolphe Quetelet develops body mass index.

1863

1866
Sleep apnea is recognized as a complication of obesity.

**1900-1960s** Diabetes treatment advances; drugs and surgery are tried on the obese.

1901
New York Life Insurance Co. reports higher mortality rates for fat men.

1921
Insulin is used to treat diabetes, a disease common among the obese.

1927
The industrial chemical dinitrophenol is used to treat obesity, but side effects cause it to be banned in 1933.

1947
Amphetamine is approved to treat obesity, soon shown to be addictive.

1962
American geneticist James Neel hypothesizes a “thrifty” gene helped ancient hunter-gatherers store fat in times of famine but causes obesity in modern times of plenty.

1963
Overweight New York housewife Jean Nidetch founds Weight Watchers.

1967
Behavioral therapy is used to treat obesity.

1968
University of Iowa’s Edward Mason performs first gastric bypass operations to treat obesity.

**1970s-1990s** Global obesity epidemic is declared.

1972
Dr. Atkins’ Diet Revolution advocates a low carbohydrate diet.

1974
Five percent of U.S. children are obese.

1980
Fifteen percent of U.S. adults are obese.

1986
International Association for the Study of Obesity is founded.

1990
Packaged food labels are required to list nutrition information.

1994
Ten percent of U.S. children are obese; American molecular geneticist Jeffrey Friedman discovers leptin, a hormone made by fat tissue that helps regulate weight.

1997
Anti-obesity drug Fen-Phen is banned after significant side effects are documented, including several deaths.

1998
World Health Organization identifies a global obesity epidemic.

**2000-Present** Adult obesity continues to climb; childhood obesity stabilizes.

2000
Centers for Disease Control and Prevention (CDC) estimates 19.8 percent of adults are obese; government sets goal of reducing childhood obesity to 5 percent by 2010.

2004
U.S. childhood obesity rate is 17.1 percent; American Cancer Society study links excess body weight to increased risk of death from cancer.

2006
Swedish study demonstrates that bariatric, or weight-loss, surgery prolongs life; beverage industry starts removing full-calorie soft drinks from schools; U.S. food companies shift food advertising aimed at children towards healthier products.

2007
British researchers discover gene variant that may explain why only some people become overweight.

May 2010
White House Task Force sets goal of eliminating childhood obesity in a generation; menu nutrition labeling at chain restaurants becomes law, effective in 2011.

August 2010
CDC reports 26.7 percent of American adults were obese in 2009; Mississippi has highest obesity rate (34.4 percent); childhood obesity rates are stable.

September 2010
Food and Drug Administration advisory panel recommends against approval of lorcaserin, a new diet pill, and evenly splits on whether the diet drug Meridia should be banned.
Is Food Addictive?

It’s a “real phenomenon,” says addiction expert Mark Gold.

Dr. Mark Gold, chief of addiction medicine at the McKnight Brain Institute of the University of Florida and chair of the psychiatry department at the university’s College of Medicine, has written several papers supporting the notion that food addiction is a real phenomenon. CQ Researcher author Barbara Mantel talked with Gold about the status of food-addiction research, still in its early stages.

CQ: How do you define addiction?

MG: If you think about alcohol or drug addiction or cigarettes, there is not much debate about what addiction is. It would be continued, compulsive use of a substance, even in the presence of severe and life-threatening consequences, coupled with repeated efforts to cut down and quit that fail. 1

CQ: How would that apply to someone addicted to food?

MG: They eat more then they intend, they eat faster than they should and they are thinking about dinner right after lunch. The fact that they are going to get diabetes doesn’t help them stop at all, and if you say you are concerned about their eating, they are angered about that. At the same time, they often vow to eat better and are guilty about their eating. They might buy a book, they might buy exercise equipment, but in the long term, none of those things helps them.

CQ: Is the idea of food addiction readily accepted in the medical community? It’s not in the Diagnostic and Statistical Manual, or DSM, the way substance abuse is.

MG: Gambling addiction has been accepted for decades, and it is just now entering the DSM-5 [to be published in May 2013]. I’d say that food addiction is more accepted than when our group proposed it 20 years ago. In internal medicine, food addiction is probably not very well accepted, in psychiatry it’s becoming a topic for discussion and among people who work full time in addiction, it would be more accepted. They’ve seen the evidence for gambling and sex as an addiction and wouldn’t think it’s much of a leap to put food in the same category.

CQ: So what does the basic science show? Are there foods or food constituents that seem to be addictive?

MG: The basic science is very compelling. In animal studies, animals will self-administer glucose, also fructose, like a drug. If you feed rat chow to a rat, they eat a little and don’t gain any weight. But if you allow them to self-administer glucose, they lose control. You can even give anti-narcotics to animals self-administering glucose and fructose, and they will exhibit withdrawal symptoms as if they were self-administering opiates like heroin and morphine.

Background

Dieting Takes Hold

By the early 1900s, society had firmly turned against its obese members,” write Kathleen Wolin, a surgeon, and Jennifer Petrelli, a nutritionist, authors of Biographies of Disease: Obesity, and “synonyms for overweight emerged: porky, tubby, sod-packer, jumbo, and butterball.” 42

Technology made it easier for the public to fixate on weight after the Fairbanks Scale Co. designed a portable ‘penny scale’ in 1891 that started showing up in hotels, drug stores, train stations and banks, as well as restaurants and grocery stores. The first bathroom scale for the home, called the Health-O-Meter, went on sale in 1919. 43

While physicians knew that obesity was associated with diseases such as diabetes, it was the insurance industry that drew attention to obesity’s link to premature death. “As early as 1901, actuarial data showed that excess weight, especially around the abdomen, was associated with a shortened life expectancy,” wrote George Bray, a leading obesity researcher. More than a century later, “cut-off values of waist circumference that indicate increased cardiovascular risk and premature death have been...
proposed and these appear to be more powerfully predictive than BMI.” 44

It wasn’t until the mid-1880s that dieting as most Americans now know it became popular. “The first of the modern exponents of a ‘scientific’ diet rather than a moral or psychological treatment for obesity was William Banting, an English undertaker,” according to Sander Gilman, a cultural and literary historian. Banting’s best-selling pamphlet, *Letter on Corpulence Addressed to the Public*, recounted “how a successful, middle class undertaker and coffin maker . . . overcame his fat.” 45

Banting’s method: reduce carbohydrates and eat lots of lean meat at breakfast, lunch and dinner accompanied by several glasses of sherry, plus a whiskey before bed. Other popular diets soon followed, including a low-fat, high-protein program and a high-fat, low-carbohydrate plan. “The basis for popular modern diets like Atkins and South Beach can be seen in these early works.” according to Wolin and Petrelli. 46

In the early 1900s, Americans began to count calories prodded by physician Lulu Hunt Peters. She was the first to promote that approach in what became America’s first best-selling diet book, *Dieting and Health, With Key to the Calories*, published in 1918. Primarily targeting women, Peters tried to remove the stigma of being overweight. “Peters dismissed the notion that fat people were overindulgent or lazy; rather she divided the world into those whose metabolism quickly or slowly burned fat,” writes Gilman. 47

But going it alone is hard, and groups focused on diet and support began forming in the late 1940s, with “TOPS (Take Off Pounds Sensibly) followed in the 1960s by Overeaters Anonymous, Weight Watchers, and Diet Workshop.” By 2002, Americans were spending nearly $35 billion a year on weight-loss products and services. 49

“Unfortunately for advocates of the most popular modern approaches, the best research we have to date suggests that each diet works about the same in helping individuals achieve long-term (at least one year) weight loss,” write Wolin and Petrelli. Approaches that have shown the most promise, they write, are those that focus on monitoring behavior rather than advocating a specific diet. “Individuals who write down what they eat and what activities they do tend to eat less and do more because the process of journaling makes them more aware of their consumption and energy expenditure.” 50

**CQ: Do human studies support the idea of food addiction?**

*MG:* Dr. Gene-Jack Wang [chair of the medical department at the U.S. Department of Energy’s Brookhaven National Laboratory] and other researchers have shown that humans who are obese have the same changes in the drug-responsive brain areas as alcoholics and drug addicts. It’s virtually impossible to tell the difference between a PET image of an alcoholic and an obese person.

**CQ: Can food addiction explain some part of the increase in obesity?**

*MG:* It would explain it in part because you have discontinuation of smoking addiction, which would be associated with overeating all by itself. And then there is an increase in the most reinforcing food available, foods that are the most compelling as if they were a drug. I’m talking about high-fat foods like French fries, milkshakes, gourmet foods, fast foods. While food addiction might not explain the majority of all obesity cases, it will explain some of the obesity epidemic.

**CQ: If certain kinds of foods, like sugars, can work in the same ways as addictive drugs, what does that mean for treatment of obesity?**

*MG:* The basic science and brain imaging are going well in supporting the similarities between food and drug addiction. But if they are similar, then you should be able to treat food addiction with medicines used to treat alcohol or tobacco addiction. Many of the treatments that are in phase III clinical trials are treatment combinations that are used in other addictions, like smoking and alcohol. I do think that even if there is debate about whether food addiction is like alcohol addiction, the idea that you could use that hypothesis to develop novel treatments to help people gain control over their eating is going to be very compelling.

Throughout history, therapies for obesity have been promoted by physicians, scientists and entrepreneurs, ranging from hydrotherapy, laxatives and thyroid extract to testicular gland extract, aniline and amphetamines, according to Wolin and Petrelli. The industrial chemical dinitrophenol was even tried. Workers who handled the chemical, used to make fabric dye, lost large amounts of weight, prompting the use of dinitrophenol to treat obesity in the 1930s. But the FDA banned it because it caused cataracts and nerve damage.

The United States has a long history of sanctioned obesity drugs falling out of favor. Amphetamine was another product of the organic-chemical industry that the FDA approved, in 1947. "But [it] was soon shown to be addictive, and its use declined markedly during the 1970s," according to Bray. In 1997, the FDA banned Fen-Phen, a combination of fenfluramine and phentermine, because of significant side effects, including several deaths.

Just two drugs currently are approved in the United States for long-term treatment of obese patients who have had no success with exercise and diet. Sibutramine, sold as the prescription Meridia, speeds up the feeling of fullness when eating; orlistat, available over-the-counter as Alli, decreases the body's absorption of fat.

The two drugs produce modest benefits. They lead to an average weight loss of about 10 pounds more than what might be achieved with diet and exercise, according to the National Institutes of Health. But the side effects can be significant. In mid-September, an advisory panel to the FDA split 8-to-8 on whether Meridia should be taken off the market after a study showed increased risk of heart attack and stroke in some patients. It has already been banned in Europe. The panel also recommended against approval of a new diet drug called lorcaserin, "the latest setback in efforts to develop treatments for the nation's obesity epidemic," said The New York Times.

But those who want drugs can find plenty of options on the Internet.

Both amphetamines and dinitrophenol supplements are advertised online to fight obesity. So are “herbal, homeopathic and traditional remedies with no hard evidence of efficacy; diuretics and laxatives; and powerful endocrine agents such as anabolic steroids,” writes Bray.

Norwegian surgeon performed the first bariatric surgery in the mid-1950s by removing a large section of small intestine to reduce absorption of calories. But this irreversible operation caused “intractable losses of nutrients and electrolytes” and was soon replaced by other approaches, including the sleeve gastrectomy, gastric banding, gastric bypass, and biliopancreatic diversion with a duodenal switch, the most extreme. Some surgeons now perform...
bariatric surgery laparoscopically, or through a small incision. 57

“In striking contrast to the poor outcomes of the early bariatric procedures, those in current use have proved effective, and the substantial weight loss that results can often improve or even reverse established type 2 diabetes,” writes Bray. 58 But about 10 percent of patients may not reach their weight loss goal or may gain back much of the weight they lost. Snacking, lack of exercise or technical problems with the operation can be the cause. 59

New York City resident Bob Bowers was normal weight until he hit 30 back in 1981. That was when he gained sobriety after years of alcohol and drug abuse. He began eating compulsively, however. “I just switched seats on the Titanic and changed my drug of choice to food,” he says. Decades of yo-yo dieting followed until he weighed more than 450 pounds.

“I couldn’t walk anymore because the pain in my lower back was so intense,” says Bowers, “but the worst thing was really the sleep apnea.” The last five years before he finally had bariatric surgery, Bowers slept sitting up in a chair so he could breathe.

Bowers lost 200 pounds after his surgery and ranged between 250 and 260 for about four years. After that, he started gaining again and has stabilized at around 290 pounds. Still, he’s mobile, and his sleep apnea completely disappeared.

But bariatric surgery can have complications, including hernias and malnutrition, which has been a problem for Bowers. “I’ve tried virtually all forms of calcium and iron and D, and I’m still very deficient in those areas, so I’ve probably had some bone loss over the years,” he says. “I’ve been fighting this battle for 10 years.”

Like D.C., 19 states have passed laws mandating nutritional standards for school breakfasts, lunches and snacks that are stricter than U.S. Department of Agriculture requirements. 61

Those federal requirements govern the National School Lunch Program — serving low-cost or free meals to more than 30 million children — and the School Breakfast Program — serving more than 10 million. The requirements have not been updated since 1995. 62

Public-health experts say that needs to change. After a comprehensive survey of U.S. elementary schools in 2007-2008, the Robert Wood Johnson Foundation found that schools “are not making the grade when it comes to providing students a healthy environment.”

For instance, many schools often made available “higher-fat products like pizza, French fries and 2 percent or whole milk.” Only one-fifth of public elementary schools offered a salad bar or whole grains on most days. Only 7 percent of the students attended a school that participated in a farm-to-school program. 63

But the nutritional professionals who work in school cafeterias say the report is “incomplete and misleading.” The School Nutrition Association, which represents food service directors nationwide, criticized the survey for failing to ask schools about prepackaged salads, which many schools offer in place of salad bars, and for not accounting for changes in how foods are prepared. Many schools now bake French fries, and pizza is often prepared with whole grain crusts, low-fat

**CURRENT SITUATION**

**What’s for Lunch?**

Here’s what a school breakfast in Washington, D.C., used to look like: Apple Jacks cereal topped with strawberry flavored milk, a Pop-Tart, a pack of Goldfish, and a carton of orange juice, according to food blogger and former *Washington Post* reporter Ed Bruske. “Altogether, children as young as 5 routinely were consuming the equivalent of 15 teaspoons of sugar before classes even started,” wrote Bruske, who helps introduce local produce into D.C. schools.

Now, following Washington’s passage of the Healthy Schools Act earlier this year, children’s breakfast trays in the District contain such healthy choices as organic yogurt, cottage cheese and low-sugar cereal. 60

Calories are listed next to menu items at a Chipotle Mexican Grill in New York City, which in 2008 became the first U.S. jurisdiction to require menu nutrition labeling. The new federal health care reform bill signed into law last February mandates calorie posting at nationwide restaurant chains with 20 or more locations.

**Getty Images/Chris Hondros**
cheese and low-sodium salt, the association said. 64

Nevertheless, the association supports the study’s policy recommendations, which call on the U.S. Department of Agriculture (USDA) to update its nutrition requirements to meet proposed new standards from the Institute of Medicine.

The IOM is recommending more whole grains, twice as much fruit, limits on starchy vegetables, weekly requirements for dark green and orange vegetables and elimination of whole and 2 percent milk from the school diet. It’s also recommending that the USDA lower the number of required calories at each meal to make it easier for schools to serve up healthier, less-fattening foods. 65

Changing children’s palates and lifelong eating habits is one of the goals. It may take time, but with multiple exposures to healthier foods, students “can be more receptive to greater variety in the diet,” said Helen Jensen, a professor of economics at Iowa State University and a member of the committee that wrote the report. 66

### Congressional Action

In early August, the Senate passed sweeping legislation that would extend and expand the school nutrition programs, which were set to expire on Sept. 30. The Healthy, Hunger-Free Kids Act would also require the USDA to update its standards for school meals and nutrition within three years. 67

But serving more fruits, vegetables and whole grains, relying less on ready-to-serve entrees that are high in fat and sodium, installing new kitchen equipment and training cafeteria workers costs money. “I think this is certainly a challenge to schools,” said Jensen. 68

Washington’s Healthy Schools Act gave schools 10 cents extra to spend on each school lunch and another 10 cents for breakfast. “Few local jurisdictions have been so generous,” blogged Bruske. 69

The Senate is certainly not. Its bill authorizes an extra six cents for school lunches. Still, that would be the first real increase, aside from inflation adjustments, since 1973. 70

“The six-cent increase will help,” said Dora Rivas, director of meal programs for the Dallas Independent School District and president of the School Nutrition Association. But Rivas said the association “will encourage legislators to find additional funds to ensure these programs can meet Institute of Medicine goals and increase availability of fresh fruits, vegetables, low-fat dairy products and whole grains.” 71

The additional funding is certainly less than what the Obama administration wants and what some members of Congress think is necessary. “We have a long way to go from six cents to the 70 cents we need,” said Sen. Kirsten Gillibrand, D-N.Y., when the bill emerged from the Senate Agriculture Committee last spring. But the amount did not budge before full Senate passage. 72

In addition to raising the reimbursement rate as well as nutrition standards, the Senate legislation expands nutrition programs. For instance, it:

• Expands the Afterschool Meal Program to all states from the current 13 states;
• Allows schools in high-poverty areas to offer free meals to all students without collecting paper applications from each family to verify income; and
• Makes foster children automatically eligible for free meals. 73

Those are just a few of the dozens of provisions in the Senate legislation, which provide an additional $4.5 billion over 10 years for nutrition programs. That money would be offset by cuts in other agricultural programs, including the food stamp program, which has some anti-poverty groups up in arms.

But with the school meal program expiring, and the House yet to act, the future is uncertain. Its version of the legislation is more ambitious than the Senate’s bill and would cost about $7.5 billion over 10 years, with more pilot programs, funding for transportation to summer lunch programs and a “nutrition corps” that would help schools and communities become healthier. 74

An open letter to House and Senate leaders from 100 retired generals and admirals urged passage of a bill, expressing their concern that an estimated 9 million young adults, or 27 percent of Americans ages 17 to 24, are too overweight to join the military. 75 Wootan of the Center for Science in the Public Interest warned that the legislation could fall apart if it does not pass before lawmakers adjourn for the midterm elections.

“If there’s a changeover in the House or Senate, then Republican leadership could produce legislation that looks very different,” said Wootan, calling the proposals the best child nutrition bills she has seen. 76

### ‘Competitive’ Foods Standards

Students at Mason High School in Ohio recently were faced with a brand-new vending machine, one that did not dispense soda and candy but 50-cent bags of baby carrots. Bolt-house Farms in Bakersfield, Calif., installed the machine at Mason and at another school in Syracuse, N.Y., as part of its “Eat ‘Em Like Junk Food” marketing campaign.

The machines will remain in place for two months, and the schools get to keep any profits. “It hadn’t been an hour after they filled the machines that we had students coming in purchasing baby carrots,” said Assistant Principal George Coates. 77

Both the House and the Senate child nutrition proposals require that the USDA establish scientifically based national

Continued on p. 814
Should soda be excluded from foods food-stamp users can buy?

The nation’s Food Stamp Program, renamed the Supplemental Nutrition Assistance Program (SNAP) in 2008, is administered by the U.S. Department of Agriculture (USDA). The intent of SNAP is to help low-income people buy the food they need for good health, similar to the USDA-supervised school meals and WIC (women, infants, children) programs. SNAP was not created to provide a family’s total diet, but rather to supplement the food budget to an extent determined by family income. SNAP excludes non-food items, along with alcohol as well as restaurant meals. Those exclusions should be expanded to include soda.

SNAP is expected to provide $69 billion in benefits to 43 million people in 2011. Based on a recent analysis of purchases by SNAP beneficiaries, roughly $4 billion will be used to purchase carbonated soft drinks. SNAP recipients appear to purchase at least 40 percent more sugar-sweetened beverages (SSB) than other consumers. If soda was not a covered purchase, this $4 billion could be spent on healthier foods, including new incentives to purchase fresh fruits and vegetables.

There is abundant evidence that consumption of SSB increases the risk of obesity — and thus diabetes, heart disease and other illnesses — and that food stamp users have higher levels of obesity than non-food stamp users. Soda is the largest source of added sugar in our diets. Among adolescents, fruit drinks and carbonated soft drinks provide few or no essential nutrients, and their availability within SNAP clearly conflicts with the program’s stated intent: providing families with nutritious food.

For SNAP to fulfill its obligation as a public-health program, it must promote the purchase only of nutritious foods. Government nutrition programs must model best practices in nutrition that can be embodied by all.

For SNAP to fulfill its mission of providing nutritious foods, it is imperative that the program be restructured. Because of political complexities in Washington, Congress should fund the Institute of Medicine to conduct a careful analysis of SNAP and recommend how the program could be remodeled to encourage families to eat diets that will improve their health and fend off disease.

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nutrition standards for all foods sold at schools outside of its meal programs, including vending machines, snack bars, school stores and á la carte lines in the cafeteria. There is, however, an exemption for bake sales to raise funds, if they don’t occur too often.

The Senate and House are following the lead of 27 states that already have standards for “competitive” foods and beverages, so-called because they compete with the school breakfast and lunch programs for students’ stomachs. Five years ago, only six states had such standards. 78

Research shows that nearly one-fifth of all elementary schools, one-third of middle schools and half of all high schools have a school store, canteen or snack bar where students can buy snacks and drinks. Vending machines are even more common, installed at 62 percent of middle schools and 86 percent of high schools, and not very many are dispensing carrots. 79

However, fewer of them are dispensing high-calorie soft drinks. In 2006, the American Beverage Association implemented a program to remove full-calorie soft drinks from schools by the start of the 2009-2010 school year and replace them with water, 100 percent juice, and lower-calorie sport drinks in smaller sizes. “That’s a pretty bold move,” says Kevin Keane of the association, “and over a three-year period we cut beverage calories in schools by 88 percent.”

Not surprisingly, researchers have found that decreasing unhealthy food options leads to healthier diets at school. One study also found that students did not make up for the improvement during the school day by eating more junk food at home. 80

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Pet owners get workouts along with their pooches at a doggie fitness program in Alexandria, Va. Experts attribute growing pet obesity and related health issues to the same problems faced by humans: sedentary lifestyles and poor diets. Children and adolescents should get at least an hour of physical activity daily, health experts say.

OUTLOOK

Genetic Research

There is a good reason why public-health officials blame the changing environment for much of the recent obesity epidemic: Blaming the individual hasn’t worked so well. That’s why they are pushing for soda taxes, changes in food marketing, increased food labeling, better access to healthy foods and more and better playgrounds. 81

Relying on diets and willpower does not take into account “the enormous biological differences among individuals that make weight loss a snap for some and a near impossibility for others,” according to Bernadine Healy, a former head of the National Institutes of Health. It’s the interplay between genes and the changing environment, while poorly understood, that “must account for the huge rise in obesity in both adults and children over the past 30 years,” she writes. 82

In fact, research has shown that “measures of fatness are among the most heritable of human traits,” according to one report. Studies of families and adopted twins have confirmed that heredity is probably responsible for between 45 and 75 percent of the variation between individuals in body mass index. 83

“I’m sure that this biological predisposition is a continuum,” says Claude Bouchard, director of the human genomics laboratory at the Pennington Biomedical Research Center in Baton Rouge, La. People who are most vulnerable have probably inherited several genes that put them at risk, while those at the other end of the continuum may have inherited very few of those genes, he says.

Scientists are getting closer to identifying those genes. In the past five years, they have discovered 17 single-nucleotide polymorphisms, or SNPs, associated with obesity, although each one has just a small effect. An SNP is a slight variation in a DNA fragment that can occur inside or outside a gene. But a whole generation of research is needed, says Bouchard, before scientists can identify the gene that each SNP is implicating as a possible contributor to obesity.
One gene does show promise. It’s called FTO, and according to the CDC several independent studies report it might be responsible for up to 22 percent of all cases of common obesity in the general population. Bouchard points out that several SNPs in FTO are associated with obesity. In addition, the FTO gene has been completely silenced in an animal model, and the animals are obese.

“Chemically we seem to know what it does, but what we don’t fully understand is what it does inside tissues,” says Bouchard. There are hints, however. Some studies have shown that FTO is expressed in brain regions involved in the regulation of appetite and satiety.

Scientists say we are not far away from the day when labs could sequence each individual’s entire genome for a reasonable price. “That raises the question of whether we do it at birth,” says Bouchard. If scientists could identify genes associated with obesity that early in life, he says, it could make a difference in how parents raise those children.

Note


2 Ibid., p. 3.

3 Ibid., p. 2.


15 Eva Almiron-Roig, et al., “No difference in satiety or in subsequent energy intakes between a beverage and a solid food,” Psychology & Behavior, June 2004.

16 Brownell, et al., op. cit., p. 1601.


25 Ibid.


30 Fletcher, et al., op. cit., p. 4.


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Files/Report%20Files/2005/Food-Marketing-to-
Children-and-Youth-Threat-or-Opportunity/KFM
Overviewfinal2906.pdf.
34 “Children’s Food and Beverage Advertising
Initiative,” Council of Better Business Bureaus,
www.bbb.org/us/children-food-beverage-
advertising-initiative.
35 Ibid.
Self-Regulation on the Nutritional Quality
of Foods Advertised on Television to Children,”
Children Now, December 2009, p. 4.
39 “Evaluating the Nutrition Quality and
Marketing of Children’s Cereals,” Rudd Center for
Food Policy & Obesity, October 2009, p. vi.
40 “Children’s food and Beverage advertising
in America,” executive Summary, Trust for
America’s Health, Robert wood Johnson
Foundation, July 2009, p. 4, http://healthyameri-
cans.org/reports/obesity2009/Obesity2009Sum-
mary.pdf.
41 “Bariatric Surgery for Severe
Obesity,” weight-control Information Network,
NIH, http://win.niddk.nih.gov/publications/pre-
scription.htm.
42 Kathleen Y. Wolin and Jennifer M. Petrelli,
Biographies of Disease: Obesity (2009), p. 5. For
background, see David Masci, “Dieting and Health,”
43 Ibid.
44 George A. Bray, Obesity: Science to Practice
45 Sander L. Gilman, Obesity: The Biography
46 Wolin and Petrelli, op. cit., p. 12.
47 Gilman, op. cit., p. 92.
48 Wolin and Petrelli, op. cit., p. 16.
49 “As In Fat: How Obesity Policies Are Failing
in America,” Trust for America’s Health,
51 Ibid., p. 9.
52 Bray, op. cit., p. 15.
53 “Prescription Medications for the Treatment
of Obesity,” weight-control Information Network,
NIH, http://win.niddk.nih.gov/publications/pre-
scription.htm.
54 Andrew Pollack, “FDA Panel Urges Denial
of Diet Drug,” The New York Times, Sept. 17,
drug.html.
55 Bray, op. cit., p. 16.
56 Ibid.
57 “Bariatric Surgery for Severe Obesity,” weight-
control Information Network, National Institu-
tes of Health, http://win.niddk.nih.gov/publica-
tions/gastric.htm#bypass.
58 Bray, op. cit., pp. 16-17.
59 Weight-control Information Network, op. cit.
60 Ed Bruske, “Save school lunch from snack-
happy government standards,” Grist, Sept.
13, 2010, www.grist.org/article/food-save-
school-lunch-from-snack-happy-government-
standards.
61 “As in Fat: How Obesity Policies are Failing
in America,” executive Summary, Trust
for America’s Health, Robert wood Johnson
Foundation, July 2009, p. 4, http://healthyameri-
cans.org/reports/obesity2009/Obesity2009Sum-
mary.pdf.
62 “School Meals: Building Blocks for Healthy
Children,” Report Brief, Institute of Medicine,
National Academies, October 2009, p. 1,
www.iom.edu/~media/Files/Report%20Files/
2009/School-Meals/School%20Meals%202009%20-
63 “School Policies and Practices to Improve
Health and Prevent Obesity: National Ele-
mentary School Survey Results,” Bridging the
Gap, Robert wood Johnson Foundation,
big201006.pdf.
64 “Report on School Wellness Fails to Fea-
ture School Meal Successes,” press release,
School Nutrition Association, June 8, 2010,
www.schoolnutrition.org/Blog.aspx?id=14688&
blobid=564.
65 “School Meals: Building Blocks for Healthy
Children,” Fact Sheet, Institute of Medicine,
iom.edu/~media/Files/Report%20Files/School-
Meals/2009/School%20Meals%202009%20Comparison%
20%20Current%20Requirements
Guidelines for School Lunches,” ABC News,
WellnessNews/nutrition-guidelines-school-
lunches/story?id=8866005.
67 The bill is S.3307, introduced May 5, 2010,
s3307.pdf.
68 Brownstein, op. cit.
69 Bruske, op. cit.
70 Chris Silva, “Deadline looms for extending
school nutrition programs,” American Medical
71 Peter Eisler, “Sweeping school lunch bill
clears Senate panel,” USA Today, March 25,
2010-03-24-school-lunch-safety_N.htm.

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Books


A world expert on obesity and nutrition traces the roots of the obesity epidemic and what might be done about it.


A journalist examines class, politics, culture and economics to explain how Americans became the second-fattest people on the planet, after South Sea Islanders.


A historian at Emory University traces the history of obesity from the ancient Greeks to the present day, acknowledging that it is shaped by the meaning society attaches to the concept.


The authors provide a comprehensive look at the causes of obesity and the health risks it poses.

Articles


Government standards for school meals allow too much unhealthy foods and too many calories.


A beverage industry advertising campaign helps to explain why New York state's soda tax proposal failed to gain traction.


A former head of the National Institutes of Health explains that the intersection of genetics and a changing environment accounts for the obesity epidemic.


Despite the coming of a national menu-labeling law, many restaurants still offer high-caloric meals with all the trimmings.


Carrot growers test vending machines stocked with 50-cent bags of baby carrots in two schools.


The House of Representatives has yet to pass sweeping legislation that would renew and expand school nutrition programs.

Reports and Studies


The report documents how obesity rates have climbed in 29 states. Only Washington, D.C., saw a decline.


Health care spending on obese individuals is growing faster than health care spending on individuals of normal weight.


The authors review the causes of childhood obesity and make a series of policy recommendations.


The foundation reviews current research on the impact of sugar-sweetened beverages (SSB) on diet and weight and the impact excise taxes might have on both.


Stanford University researchers find a modest impact of calorie posting on Starbucks customers in New York City.


Researchers compare advertising on children's television programming before and after a food and beverage industry initiative to shift ads toward healthier products and find positive results.
Beverage Tax


Increasing the price of soft drinks could result in Americans losing an average of five pounds per year, according to a report by the Department of Agriculture.


A growing number of public-health advocates are urging that states tax soda in the same manner that they tax tobacco.


Taxing consumer products will do little to make a dent in Nebraska’s budget deficit, let alone solve the serious and complex issue of obesity.


Thirty-two states as well as the city of Chicago currently have some kind of sales or excise tax on soda beverages.

Demographics


The fact that San Francisco is a wealthy city may explain why it has a low rate of obesity, suggesting a correlation between wealth and fitness level.


Arizona Hispanics are at a higher risk for chronic illnesses such as diabetes because of their obesity levels.


A study from the University of North Carolina finds disproportionately high obesity rates among minority children.

Food Addiction


There is scientific evidence suggesting that binge eating and food addiction are “linked” in the brain’s circuits.


The symptoms of food addiction are similar to those of any other addiction, and food addicts often hide their addictions just like other addicts.


The common element between drug and alcohol addiction and food addiction is the compulsive behavior.

Menu Labeling


Menu labeling has proven not to combat obesity either when mandated by states or provided voluntarily.


Studies have shown that menu labeling results in consumers selecting items that are on average 52 calories fewer.


The McDonald’s at a Texas children’s hospital has begun labeling its menu with food calories in an attempt to promote better health.


The federal government has passed a provision that mandates restaurants with 20 or more locations to visibly post calories next to food items on menu boards.

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