

Diabetes Health Magazine

Recipe for Disaster

What Is Causing the Diabetes Epidemic in America?

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When Daisy Herrera of Orlando, Florida, was 13 years old, she breakfasted on two bowls of Lucky Charms cereal or three chocolate glazed Dunkin Donuts. She drank two 2-liter bottles of Pepsi every couple of days and cartons of chocolate milk. She binged on candy and potato chips while hiding under the bed. She ate an average of four McDonalds or Burger King meals each week. She stood 4'8" tall and weighed 130 pounds. Her mother, Maria, called her a "little round ball." Daisy's blood glucose level often topped 400 mg/dl. Even though she was still a child, Daisy was diagnosed with type 2 diabetes—a condition formerly known as "adult-onset diabetes."

Bigger But Not Better

Indeed, waistlines across America have grown along with portion sizes.

Since the 1960s, the serving sizes of foods sold in stores and restaurants have become much bigger. Bagels used to weigh 2 to 3 ounces, with about 200 calories, writes New York University nutrition researcher **Lisa Young** in her book "*The Portion Teller.*" Today they're closer to 5 ounces, with more than 400 calories depending on the type, equal to five pieces of bread or 15 cups of popcorn.

In 1955, a single order of french fries weighed in at 2.4 ounces. Today, an average single serving is 7.1 ounces—a nearly 200 percent increase, according to a study published in the February 2003 issue of the *Journal of the American Dietetic Association*.

Researchers surveying fast food and conventional restaurants and homes found that between the late 1970s and 1990s, the standard serving size of salty snacks increased by 93 calories, soft drinks by 49 calories, hamburgers by 97 calories and Mexican foods by 133 calories.

Bigger portions mean that people eat more. In a study conducted at Penn State University, 23 normal-weight and overweight adults were given all of their meals (food and beverages) for two 11-day periods with a two-week break in between. During one of the 11-day periods, standard portion sizes were served from a menu that changed daily. During the other period, the same meals were served, but all of the portions were increased by 50 percent, according to Penn State researcher Barbara

Rolls, who presented these findings at the 2005 Annual Scientific Meeting of NAASO, The Obesity Society.

At the end of the study, the subjects consumed an average of 16 percent more calories per day—or an extra 4,500 calories over the 11 days—during the large-portion period. The study found that even when people are served larger portions and feel more full, they don't necessarily decrease how much they eat.

Are We Killing the Messenger by Blaming the Food Companies?

Can we really blame the food manufacturers for the obesity epidemic? After all, aren't they just trying to sell their products?

Maybe so, but in advertising unhealthful foods to kids, critics say companies are manipulating impressionable children who then pester their parents to buy those foods. "Marketers count on children wearing their parents down and on parents giving in and purchasing low-nutrition foods for their children," reads a report from the Center for Science in the Public Interest, a nutrition advocacy group.

There are currently few policies or standards for food advertising and marketing aimed at children. The advertising industry maintains self-regulatory policies established by the Children's Advertising Review Unit of the National Council of Better Business Bureaus. But it has no legal authority over advertisers.

In the 1970s and 1980s, the Federal Trade Commission (FTC), whose responsibility it is to regulate advertising deemed unfair or deceptive, considered restrictions on junk food advertising aimed at kids, but the food, toy, broadcasting and advertising industries blocked those efforts. Now, the FTC has more authority to regulate ads directed to adults than to children.

Senator Tom Harkin (D-Iowa) is leading the charge in Washington to change this. He has put forward legislation aimed at vesting the FTC with the authority to restrict the advertising of junk food to children under age 18. The bill he has proposed, which is still pending consideration, would also give the U.S. Secretary of Agriculture the authority to prohibit all junk food advertising in schools where parents are not present.

Are Food Companies Lobbying to Make Kids Fat?

The various lobbying arms of the food and beverage industry—food processors, distributors, service management companies, soft drink manufacturers and agricultural corporations—work hard to make sure that the government buys their products and that vending machines stay open in schools.

To help them win policy battles in Washington and in state capitals across the country, the industry, led by the National Soft Drink Association, the National Restaurant Association and companies such as Coca Cola and Mars, Inc., spends



around \$6.5 million on lobbyists every year, according to data compiled by the Center for Responsive Politics, a Washington, D.C.-based research group that tracks money in politics and its effect on elections and public policy.

The food products industry—packaged-food giants Pillsbury and General Mills and trade associations such as the Grocery Manufacturers of America and the Corn Refiners Association—spends an additional \$7 million. This so-called “junk food lobby” is charged with derailing, or significantly diluting, far-reaching school food policy legislation, an effort that nutrition advocates argue undermines the fight against obesity.

From 1990 until 2006, the industry, led again by the National Restaurant Association, Coca Cola and the National Soft Drink Association, contributed over \$71 million to political candidates and parties—giving two-and-one-half times more to Republicans than to Democrats. With all that money lining the pockets of the politicians who evaluate the nation’s food policies, many critics are not surprised that the federal government has yet to impose any tough legislation in favor of good nutrition for school kids.

Branding for Life

Food advertising also appears indirectly on corporate-sponsored educational materials that kids see while they’re at school. Many elementary school programs promote corporate-sponsored contests and incentives, such as Pizza Hut’s Book It program, a reading incentive program that rewards students with a free pizza for reading a required number of books.

One marketing company, Cover Concepts, distributes textbook covers, lesson plans, posters, bookmarks, sampling programs, specialty packs and lunch menu posters to participating companies. These products are branded with the company’s name or corporate logo. Cover Concepts advertisers include McDonalds, Pepsi, Gatorade, Frito Lay, General Mills, Hershey, Keebler, Kellogg’s, M&M’s, Mars and Kraft/Nabisco. The branded products are distributed free to schools and students.

Is Corn the Culprit?

Next time you pick up a can of soda, a package of hot dogs, a box of cookies, a jar of jelly, a tub of fruit-flavored yogurt or a bag of hamburger buns, take a look at the label. There is a very good chance that you’ll find “high-fructose corn syrup” (HFCS) high on the list of ingredients.

HFCS now represents more than 40 percent of caloric sweeteners added to foods and beverages and is the sole caloric sweetener used in soft drinks in the United States. According to the USDA, in 2004 Americans consumed 13 teaspoons of HFCS per day, or 53 pounds for the year. The agency recommends that the average person on a

2,000-calorie daily diet consume no more than 40 grams of added sugars. Well, that's about 10 teaspoons, roughly the amount of sugar in a 12-ounce soft drink.

Why has HFCS—an even mixture of two sugars, dextrose and fructose—become the sweetener of choice in the United States for soft drinks and processed foods? Mostly because it's cheap—as much as 20 percent cheaper than other sources of sugar. But it has other qualities that endear it to the packaged food and beverage industry. It extends shelf life, helps prevent freezer burn and helps keep baked goods soft.

Many nutritionists agree that HFCS has played a role in America's obesity epidemic. The question is, how large a role?

Analyzing USDA food-consumption data from 1967 to 2000, a team of researchers led by George Bray of Louisiana State University determined that U.S. consumption of HFCS increased by more than 1,000 percent between 1970 and 1990, far exceeding changes in intake of any other food or food group.

In the early 1970s, Japanese researchers developed a reliable and inexpensive way to turn cornstarch into sweet syrup. By the 1980s, soda companies switched to HFCS from liquid sugar almost entirely, as government subsidies for the price of corn help to keep the cost of HFCS low.

According to Bray's report, published in the April 2004 issue of the *American Journal of Clinical Nutrition*, the sharp increase in the consumption of HFCS in the United States, however, precedes an almost identical increase in the rate of obesity in the country.

Many nutritionists find this trend alarming and are calling for the replacement of HFCS with other sweeteners.

One in Three People Will Someday Have Diabetes

More than one-third of new diabetes cases are in children and teens like Daisy Herrera. According to the Centers for Disease Control and Prevention (CDC), one in every three Americans born today is predicted to develop type 2 in their lifetime.

Health officials and doctors place the blame for the rising incidence of type 2 diabetes squarely on overweight and obesity. According to the Institute of Medicine (IOM), since the 1970s, the prevalence of obesity has more than doubled for preschool children aged 2 to 5 years and adolescents aged 12 to 19, and it has more than tripled for children aged 6 to 11.

In 2004, the IOM reported that approximately nine million children over 6 years of age were obese.

The Super-Sizing of America

Over the last decade, the American diet has radically changed. The leading sources of calories in the average American diet used to be white bread and salty and sweet snack foods. Today, according to an analysis of National Health and Nutrition Examination Survey (NHANES), sodas and fruit-flavored drinks comprise at least 30 percent of all calories consumed by Americans.

Furthermore, the U.S. Department of Agriculture (USDA) Office of Analysis, Nutrition, and Evaluation conducted a study of the changes in kids' diets. They found that during the 1990s, children's caloric intake increased by approximately 80 to 230 extra calories per day, depending on the child's age and activity level. The agency believes that the increases in calorie intake were driven, in part, by the increased intake of foods and beverages high in added sugars.

Snack Attacks



Nowadays, we also snack more.

Barry Popkin, MD, in an analysis of food patterns and trends, published in the January 22, 2003, *Journal of the American Medical Association* (JAMA) that today's teenager eats an average of two high-fat and high-calorie snacks per day. This adds about 610 calories to his or her diet. In 1977, the average was 1.6 snacks, which brought in 460 calories.

It is not that children have "collectively lost their will power," says Lisa Harnack, who studies trends in dietary intake at the University of Minnesota's Nutrition Coordinating Center. "It's just easier to overeat."

Are Parents Responsible?

Parents today are, in part, responsible for feeding their children more calories than they need. But to what extent can parents be held responsible for their children's diet? Nutrition advocates say that what kids eat while away from their parents is part of the problem.

For some middle and high school kids, there is a certain stigma associated with bringing healthier foods to school. It's just not cool.

Tammy Duhon, of Anahuac, Texas, has been pushing diet sodas on her daughter because she is overweight with type 2.

"But she wants to drink what her peers drink," says Duhon. "She doesn't want to be known to drink the diet stuff."

The Vending Machine Dilemma

Some kids avoid the lunch line at school altogether and opt for snack foods because they simply don't have the time for a meal.

"If only healthy options were available, then kids might buy them," says Francine Kaufman, MD, former president of the American Diabetes Association and author of the book "Diabetesity." "But when you have healthy options and junk, kids will gravitate toward the junk."

Howell Wechsler, MD—then the CDC's acting director of the Division of Adolescent and School Health—told an audience at the 2002 Healthy Schools Summit in Washington, D.C., that nearly all high schools, three-quarters of middle schools and almost half of all elementary schools allow students to buy food and beverages from a vending machine or school store. For the most part, the foods sold in these vending machines are high-fat salty snacks (potato or corn chips), high-fat snacks (cookies, chocolate bars, donuts) and low-fat salty snacks (pretzels).

About half the schools with vending machines offer pure fruit juices and bottled water, but most of the beverage choices are awash in added sugars: soft drinks, sports drinks and fruit drinks. Kids tend to gravitate toward the vending and snack lines: these are typically shorter than the school lunch lines, and, besides, salty, sweet and oily foods just taste good to most kids.

The Great Soda Wars

In June 2005, Connecticut Governor Jodi Rell, with one stroke of the pen, put an end to a three-year battle over what would have been the nation's strongest school nutrition law in the country.

The bill would have banned beverages and foods deemed unhealthy by the Connecticut Department of Education from state school cafeterias, school stores and vending machines. And it would have required 20 minutes of physical activity every day, outside of gym class, for young students through the fifth grade.

But behind the scenes in Connecticut, Coca Cola was throwing its weight against the state's proposed soda ban. It reportedly spent \$250,000 to lobby against the legislation, employing a lobbyist from the influential firm of Sullivan & LeShane. As it turns out, the co-founder of the firm, Patricia LeShane, had served as Governor Rell's campaign advisor.

In America today, no other single food contributes more calories to the teenage diet than sodas and fruit drinks like Hawaiian Punch and Sunny Delight. "Liquid candy," as some call these drinks, provide about 13 percent of a teenager's total calories—more than cakes, cookies and other sugary foods.

A team of researchers from the University of Vermont, University of British Columbia, and ENVIRON Health Sciences Institute studied the diets of more than

3,000 children and teenagers aged 2 to 18 using food consumption data from the federal government's latest National Health and Nutrition Examination Survey. Their study, published at the April 2005 Experimental Biology annual meeting in San Diego, found that as kids get older, soda and fruit drinks displace milk consumption. By the time a child enters adolescence, he or she is drinking about twice as many sugary sodas and fruit drinks as milk. American teens now get more of their energy from sodas than from bread.

Studies are increasingly drawing a clear link between consumption of these "empty calories" and rising rates of childhood obesity. Researchers at the Harvard Medical School followed 550 ethnically diverse children aged 11 and 12 for almost two years, measuring how many sweetened drinks they consumed and how their body mass index (BMI) changed over time. Offsetting other factors that contribute to weight gain, such as puberty and exercise patterns, their study, published in the February 17, 2001 issue of *The Lancet*, found that children had 1.6 times increased risk of becoming obese for each serving of sweetened drink consumed daily.

Advertising Junk Food to Kids

Food is the third most advertised category of products in the United States. Of the more than \$26 billion dollars spent on food advertising and promotions, mostly by manufacturers, an estimated \$12 billion per year is spent on advertising messages aimed at the youth market, according to a task force of the American Psychological Association (APA).

For many years, young children were generally considered off limits to advertisers. Parents, who delivered products to this age group, were considered the obvious target audience for food marketers. Today, food marketing bombards children almost everywhere they spend their day, with messages on television, product placements, "kids' clubs"—brand marketing programs such as the Burger King Kids' Club—the Internet, toys and products with brand logos, youth-targeted promotions and event marketing.

Marketers target kids for good reason. Texas A&M marketing professor James McNeal estimates that the direct buying power for children aged 12 and under is expected to exceed \$51.8 billion by 2006; and children influence an estimated \$500 billion on family purchases. For the food industry, advertising to children from a young age makes for loyal and lifelong consumers—a marketing tactic known as "cradle to grave branding."

Children also make for an attentive audience. According to a November 1999 Kaiser Family Foundation report on children's media use, the average American child between the ages of 2 to 18 spends about five-and-a-half hours every day using media. Television is the most dominant medium, and kids watch almost three hours of it daily. A typical child watches more than 20,000 commercials a year. Studies of weekday afternoon and Saturday morning children's programs, published in an

August 1999 issue of *American Journal of Health Behavior*, found that 63 percent of television advertisements promote foods and beverages such as candy, fast food, snack foods, soft drinks, and sweetened breakfast cereals that are high in calories and fat and low in fiber and other essential nutrients.

Whatever Happened to PE?



While they consume more calories in the cafeteria, children today are burning fewer calories in the gym.

In 1991, 42 percent of high school students took physical education every day during at least one semester. By 2001, it was just 32 percent. In fact, only 71 percent of elementary schools provide daily recess for all of their students, according to the U.S. Centers for Disease Control and Prevention.

Although the government recommends that children get 60 minutes of physical exercise per day, state laws requiring PE in schools are very limited. While almost all states require schools to offer some amount of physical education, only one, Illinois, requires daily physical education for all students from kindergarten through grade 12. High school students, typically, are required to take only one year of physical education or less. They are allowed exemption for reasons such as participation in other school activities, community sports or community service activities.

Surveys show that the percentage of students enrolled in physical education declines as students get older. In the high school years, it drops off sharply. And if schools don't require exercise, kids don't get it.

Toward a Healthier Society

The effort to reverse childhood obesity is far reaching, involving collaboration between the various stakeholders. The federal government is being charged with developing nutritional standards for foods and beverages sold in the schools and with creating stricter guidelines regarding marketing and advertising to children. The food and beverage industry is being called on to develop more nutritious food and beverage products and to expand consumer nutrition information. State and local governments are being asked to promote physical activity in communities and to expand networks that increase the availability of and access to healthful foods.

But how much of a role can government play in influencing what ultimately becomes the individual's personal choice of what to eat and how to live? The answer, many argue, is a lot, beginning with a fundamental paradigm shift in food policy. What the government chooses to support in the form of subsidies—which help the corn and soybean industries to produce low-cost commodities but do little to aid fruit and vegetable growers—doesn't match the nutritional messages it promotes. As the economy and food supply have progressed, the nation produces more calories per

capita than we need, resulting in a low-cost food supply. The government, critics contend, is making it cheap to eat junk.

Recommendations about healthy eating, from the government, educators and medical community, are also overwhelmed by the hundreds of billions of dollars in advertising for junk foods that we're subjected to at home and even in public schools. The food and beverage industry argues that the foods they produce and market are not inherently unhealthy; it's just that people are eating more of those foods than they should. A healthful diet, they argue—as do critics of any diet fad—is about balance.

“We're still functioning like there are people who are starving,” says Francine Kaufman. “For 40,000 years, humans collectively have struggled to combat starvation and secure a food supply. We've created labor-saving devices so that we can have more leisure time to cultivate intellectual and emotional pursuits.”

By this measure, Kaufman argues, for the last 40 years or so, “We've made it. We've got enough food to feed everyone on the planet adequately, and we have every labor-saving device so nobody has to move at all—yet we're still calling that ‘progress.’ We now have to redefine progress. If we continue to say we're going to get more calories and create more labor-saving devices so nobody has to move at all, it will be our demise.”