

Nutrition *Action*

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HEALTH LETTER®
CENTER FOR SCIENCE IN THE PUBLIC INTEREST

How Did We Get Here?

Explaining the obesity epidemic

HOW TO
EAT LESS

2018
**Xtreme Eating
Awards**

**Trans Fat
R.I.P.**

M E M O

ARTIFICIAL TRANS FAT DEAD AT 107

Controversial Chemical Extended Shelf Life But Shortened Humans'



Artificial Trans Fat, a chemical once heralded as an advance in modern food processing, but ultimately condemned as the cause of tens of thousands of deaths due to heart disease each year, has died.

It was 107 and lived in increasing seclusion in a small number of highly processed foods. According to family members, the cause of death was a heady combination of changing consumer choices and government regulation.

Artificial Trans Fat was born at the turn of the 20th century, the brainchild of chemists in France and Germany.

It originally lived in Crisco vegetable shortening, but soon moved to margarine.

Processed-food producers quickly realized the young fat's potential to stave off rancidity and, as a consequence, lengthen shelf life.

It rapidly gained widespread acclaim in french fries, frosting, fried chicken, pie crusts, popcorn, cookies, Cinnabons, and more.

In its prime, Artificial Trans Fat—which often went by the alias Partially Hydrogenated Oil—helped fuel the growing international appetite for processed food.

But by the early 1990s, the tide had begun to turn against the luckless chemical. Studies linked it to heart disease, the nation's number one killer, because it raised LDL ("bad") cholesterol and lowered HDL ("good") cholesterol. Scientists blamed it for 50,000 deaths

annually in the United States alone.

Spurred on by criticism by the likes of the Center for Science in the Public Interest (*Nutrition Action's* publisher), Artificial Trans Fat became increasingly isolated. In 2003, the U.S. Food and Drug Administration decreed that even its mere presence was noxious enough that it would have to be acknowledged on Nutrition Facts food labels.

In 2004, after uncovering something rotten in the state of Denmark, Danish public health officials expelled the fake fat, and heart disease rates fell. Other countries soon followed, though still others provided a safe haven.

Artificial Trans Fat became a pariah, shunned even by the makers of Oreos and Crisco.

The death knell came in 2015 when, at CSPI's request, the FDA declared Artificial Trans Fat to be not Generally Recognized as Safe, consigning it to the ranks of the

worst offenders in the American diet.

Artificial Trans Fat had to be out of all foods, the FDA declared, by June 18, 2018.

It survived by its evil cousin, Saturated Fat, who lives in red meat, butter, cheese, and coconut and palm oils. Also surviving are its siblings Polyunsaturated Fat and Monounsaturated Fat, who live in fish, nuts, mayo, and most oils, where they are valiantly struggling to salvage the family's reputation.



Trans fat, R.I.P.



Peter G. Lurie, MD, MPH, President
Center for Science in the Public Interest

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Michael F. Jacobson, PhD
Founder and Executive Editor (1974-2017)

EDITORIAL

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Executive Editor

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Mail: CSPI, 1220 L Street NW, Suite 300, Washington, DC 20005

E-mail: NutritionAction@customersvc.com

Tel: (866) 293-CSPI (2774)

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How Did We Get Here?

Explaining the obesity epidemic

Why are two out of three adults and one out of three children overweight or obese? One explanation: Extra calories from cheap, convenient, ultra-processed foods have increasingly flooded the food supply.



Kevin Hall is a senior investigator at the National Institute of Diabetes and Digestive and Kidney Diseases. Trained

as a physicist, Hall leads a team of mathematicians, neuroscientists, and dietitians who study metabolism and weight. He spoke with *Nutrition Action's* Bonnie Liebman.

Gaining Weight

Q: What caused the obesity epidemic?

A: Our [working model](#) to explain the U.S. obesity epidemic is what we call the push hypothesis, because a combination of factors has pushed calories into the food system and subsequently changed what we eat, how much we eat, and our overall eating habits.

Calories in the food supply have consistently risen since the onset of the obesity epidemic in the 1980s. The rise in calories per person is much more than enough to explain the increase in body weight.

Q: So it's not just carbs?

A: Not likely. Some people have demonized individual nutrients like carbs or fat and have proposed plausible theories

for how they cause obesity. For example, the carbohydrate-insulin model of obesity predicts that carbohydrates increase insulin secretion, which sequesters calories into fat tissue, and that causes people to be hungry and decreases the calories that they're burning.

We've done a lot of [work on that model](#), but the predictions didn't turn out to be true. Of course, carbs almost certainly have contributed to obesity, but the carbohydrate-insulin model is unlikely to explain how.

Q: What about fat?

A: Experiments seem to support the idea that higher-fat diets lead to weight gain. If you covertly increase the fat content of people's diets, they will eat more calories. And people seem to very efficiently store that extra fat.

And yet, when people were told to eat a lower-fat diet in the 1990s, that didn't seem to prevent the rise in obesity, in part because some people replaced some fat in their diets with refined carbohydrates.

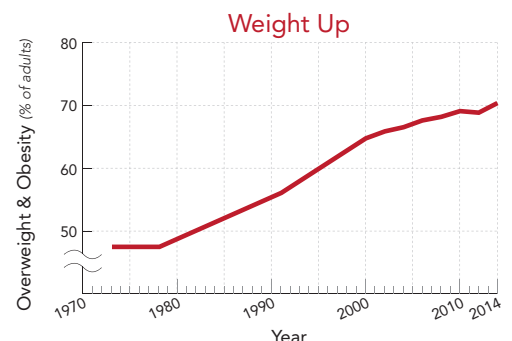
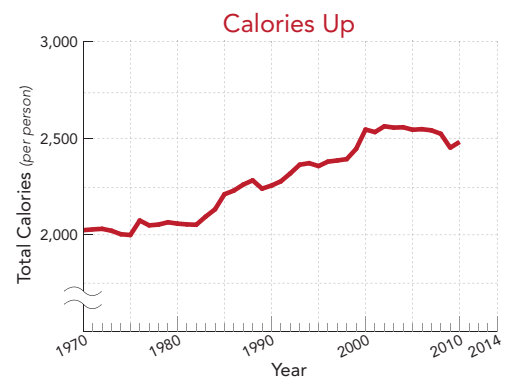
Q: Did we eat less fat?

A: Not likely. Fat in the food supply went up. And so did refined carbs. We were exposed to more carbs and more fat and a little bit more protein in the food supply, and we probably ate all of those in excess.

Q: How much have calories gone up?

A: Calories in the food supply have increased by about 500 to 800 per person a day. But we're wasting more food. So about half to two-thirds of the increase went into the trash. The rest generated the obesity epidemic.

We believe that the average adult in recent years is eating about 250 to 300 more calories a day than in the 1970s. That's at a population level. People who have obesity are likely eating many more additional calories.



Calories in the food supply started climbing around 1980. So did the percentage of adults who are overweight or obese.

Sources: [U.S. Department of Agriculture](#) (top), [National Center for Health Statistics](#) (bottom).

Q: What caused calories in the food supply to increase?

A: We can't prove cause and effect, but increased crop yields, changes in subsidies, and other policies generated a dramatic increase in the production of corn and soybeans in the 1970s and 1980s.

Q: What led to those policy changes?

A: The Nixon administration had to deal with complaints about food prices going up. So USDA made some dramatic changes to alter the incentives for farmers to produce as much as they could.

And who could blame USDA? Those officials lived through the Great Depression, when people were starving. I'm sure the idea that you could create an obesity epidemic was not on their minds.

So with all good intentions, policy changes generated this flood of cheap commodity crops.

Q: And that led to supermarket aisles stacked with processed foods?

A: Yes. It's not like we've had a flood of soybeans and corn on the cob in the supermarket. The changes drove down the price of ingredients like high fructose corn syrup. And ingenious engineers figured out how to make stable, convenient, inexpensive, and tasty processed foods.

Q: Did eating norms also change?

A: Yes, and some were positive. For example, changes in the food supply allowed more women to enter the workforce and not be expected to prepare all of the family's meals from scratch.

But some changes have not been so positive. One is that we eat out more at restaurants, which is a pleasant experience, but we have less control over what we're eating. We snack more, and we eat more convenience foods—which you only need to heat as opposed to cook.

Q: Why is that a problem?

A: To compete, companies want to make their foods as tasty as possible. Those foods are often high in salt, sugar, fat, and flavor additives and are engineered to trigger a supernormal appetite.

And many restaurants serve larger portions, especially when the price of the ingredients is low. As consumers, we're always willing to pay less to eat more.

And there has clearly been a rise in the fraction of our calories that comes from ultra-processed foods.



McDonald's sells a large Coke (290 calories) for \$1 and a small Chocolate Shake (530 calories) for \$2.

Q: Foods like cookies, ice cream, cereal bars, chips, hot dogs, and soda?

A: Exactly. They're refined foods that are subjected to industrial processing to increase convenience, availability, or shelf life. [See "What's an Ultra-Processed Diet?"] We're now doing studies to look at their health effects.

The weight of scientific opinion is that people should eat as little ultra-processed food as they can. But there are precisely zero randomized controlled trials that have examined the impact of ultra-processed foods other than ours.

Q: What will your studies look at?

A: In the first study, volunteers spend an entire month living at the NIH Clinical Center, where we provide them with one of two diets that have the same amounts

of protein, fat, carbs, sugar, sodium, and fiber per calorie. In one diet, the foods are whole and unprocessed. In the other, they're ultra-processed.

Folks eat as much or as little as they want of each diet for two weeks at a time. We want to see if people eat more calories during the two weeks when they're eating the ultra-processed diet and if that affects their metabolic health. Does it generate a change in their whole body insulin sensitivity, for example?

Q: Are they overweight or obese?

A: Not necessarily. But in the second study, they'll all be male and have overweight or obesity. For one month they'll eat an ultra-processed diet. For the other month, they'll eat a whole foods diet.

In this study, people have to eat all of the food that we're giving them and nothing else. And we're doing a much more detailed assessment of insulin sensitivity in muscle, fat tissue, and liver.

Losing Weight

Q: Why is it so hard to lose weight and keep it off?

A: That's what we're trying to understand. When we studied "The Biggest Loser" contestants, we found that the number of calories that people burn drops as they lose weight.

But we also know that hormones—for example, leptin, ghrelin, and other hormones that are released by the gut—are sending feedback to the brain and controlling appetite.

Q: Leptin decreases and ghrelin increases appetite?

A: Yes. When people lose weight, leptin goes down and ghrelin goes up. Those changes are persistent. But no one had



A 1,640-calorie lunch is \$5 at Little Caesars.

quantified how important those feedback signals are for controlling appetite.

So we did a [study](#) where we collaborated with a pharmaceutical company that had a drug that increases the amount of calories that people were losing in their urine without their knowing it.

Q: They got either the drug or a placebo?

A: Exactly. We wanted to see how their bodies compensated for the loss of calories and weight. We didn't measure appetite by asking people how hungry they were. Instead, we objectively measured how many additional calories they ate over the course of the one-year study.

And we found that when people were losing weight, their appetite increased by about 45 calories a day above baseline for every pound of weight that they lost.

Q: So if they lost 10 pounds, their increased appetite pushed them to eat 450 more calories a day?

A: Yes. Meanwhile, the number of calories that they were burning went down by between 10 and 15 per day for every pound of weight they lost.

So the new piece of the puzzle is that, as you lose weight, not only does the number of calories you burn decrease, but the number of calories you want to eat goes up above where it was before you lost weight.

Q: Is that why many dieters inch back to their original intake after about six months?

A: If somebody goes on a diet, they

tend to cut a lot of calories initially. But as they lose weight, they're fighting a greater battle against feeling more hunger and burning fewer calories.

For the same effort, they see diminishing weight loss returns until [they plateau](#) at a lower weight after six to eight months. Often, they don't want to keep putting in the same effort because they're not seeing the numbers on the scale keep falling. That's when their efforts to stick to the diet start to wane.

Q: Because they lost less weight than they wanted to?

A: Typically, yes. They may have wanted to lose 40 or 50 pounds but lost only 10. Even though that might be great for their

health, it's not what they wanted. So they think, "Why am I sticking to this diet?"

Q: What's your advice to dieters?

A: Choose the healthiest diet that you enjoy and that you can stick to. Right now, there's no magic way to personalize a diet. I can't measure something in your blood and decide that you would do better on Diet A versus Diet B. We'd love to be able to do that. And we're working on that.

But for now, do whatever you can to improve your diet and physical activity, while honestly thinking, "This is a lifestyle that I can live with and enjoy for the rest of my life." And let the weight changes fall where they may. 🍌

What's an Ultra-Processed Diet?

Here are two sample menus from Kevin Hall's study pitting an ultra-processed diet against an unprocessed diet.

ULTRA-PROCESSED	UNPROCESSED
Breakfast	
Pancakes with margarine and syrup Turkey sausage Tater tots Apple juice	Oatmeal with blueberries and almonds 2% milk
Lunch	
Turkey sandwich with American cheese and mayo on white bread Baked potato chips Diet ginger ale	Entrée salad with grilled chicken breast, farro, apples, grapes, and lemon vinaigrette
Dinner	
Cheeseburger French fries and ketchup Diet ginger ale	Beef tender roast Couscous with lemon and garlic Green beans Side salad with honey vinaigrette
Snack	
Sweetened greek yogurt Canned peaches in heavy syrup	Carrots Black bean hummus



For more information: [BMJ Open 2016. doi:10.1136/bmjopen-2015-009892](#).

HOW TO EAT LESS

What works. What doesn't.

BY CAITLIN DOW

Most of us either weigh too much or are trying not to. So the media happily feeds us a steady diet of tips to keep us from overeating. But some are not quite what they're cracked up to be.

Plate Size

"Eating off of 8-inch salad plates instead of 10-inch (or larger) dinner plates, and using small bowls instead of large soup bowls can help you feel like you're still getting a full plate's worth of food but with far fewer calories," notes [Reader's Digest](#).

Does shrinking your plate magically shrink your calories?

"Focusing on plate size is a diversion," says Barbara Rolls, professor and the Helen A. Guthrie Chair of Nutritional Sciences at Penn State.

"The real problem is the big portions of calorie-dense foods piled on the plate." (See "Tried and True," p. 8.)

In most studies, people don't eat less when they use a smaller plate.¹ Rolls tested plate size in three experiments:²

- Adults served themselves macaroni & cheese onto a small, medium, or large plate (roughly 7, 9, or 10 inches across).
- Rolls gave each participant the same amount of macaroni & cheese on either the medium plate (with a standard spoon) or the large plate (with a soup spoon).
- Participants served themselves from a buffet of five dishes (chicken & noodles,

mac & cheese, green bean casserole, broccoli salad, and sweet potato casserole) using a small, medium, or large plate.

In each experiment, people ate roughly the same number of calories, regardless of plate size.

"I'm particularly fond of the buffet experiment," Rolls says. "If we gave people smaller plates, they just went back to the buffet more times."

But a smaller plate *could* help, she speculates, "if you use it as a tool to

higher calorie density.)

"But if people only have a small plate, they'll probably give up the foods they like the least, which are often vegetables."

The Bottom Line: Don't rely on small plates to help you eat less.

Breakfast Skipping

"Eating breakfast jump-starts metabolism," declared [Prevention.com](#) in March.

"The idea that breakfast is important for weight or that it kick-starts your metabolism is well ingrained," says Enhad Chowdhury, a teaching fellow at the University of Bath in England.

"And people who typically consume breakfast do weigh less than those who skip." (Roughly 20 to 30 percent of adults skip breakfast.)

But that's not proof that skipping breakfast *causes* weight gain. Something else about breakfast eaters could make them leaner.

To find out, Chowdhury randomly assigned 56 lean, overweight, or obese people to a breakfast group that ate at least 700 calories by 11:00 a.m. or a breakfast-skipping group that ate nothing until noon.^{3,4}

After six weeks, resting metabolic rate and weight were no different in the breakfast eaters than in the skippers. (Presumably, the skippers ate more calories the rest of the day.)

A larger, longer study on 283 overweight or obese adults got similar results.⁵

"We told participants, 'Eat something



Just using a smaller plate doesn't help people eat less.

remind yourself of how much you should be eating."

More important is what you put on that plate. "Half the food on your plate should be fruits and vegetables that have a low calorie density," says Rolls.

(Lower-calorie-density foods have fewer calories per bite than foods with a



Eating breakfast doesn't jump-start your metabolism.

before 10:00 a.m.' or 'Eat nothing before 11:00 a.m.," says Marie-Pierre St-Onge, associate professor of nutritional medicine at the Columbia Irving University Medical Center.

"There was no difference in weight change after 16 weeks."

Don't famished breakfast skippers gorge themselves at lunch? Chowdhury tested that idea by giving 59 adults either a roughly 500-calorie breakfast or no food before lunch.^{6,7}

"When people skipped breakfast, they did eat a bit more at lunch," Chowdhury says. ("A bit more" averaged 150 calories for lean people and 50 calories for obese people.)

"But it was nowhere near enough to make up for the 500 calories they missed by skipping breakfast," he says. "They certainly didn't overeat at lunch."

However, blood sugar and insulin were higher an hour after lunch when people skipped breakfast. (Insulin tamps down blood sugar by enabling it to enter cells, but cells can be resistant to the insulin.)

"We're more insulin-resistant later in the day," says St-Onge. "By eating in the morning, when you're more insulin-sensitive, blood sugar doesn't stay in circulation as long."

The Bottom Line: "There's not much evidence for the dogma that if you don't eat breakfast, you'll suddenly eat a ton of food and gain weight," says Chowdhury. But eating in the morning may help your insulin work more efficiently later in the day.

Meal Timing

"You are when you eat," declared NBCNews.com in January.

"A growing number of researchers say limiting the hours during the day when you eat, focusing more on the timing of meals instead of calories, can help dieters burn more fat, improve their health

and lose weight."

In one study, 156 adults used a smartphone app to track what and when they ate or drank for three weeks.⁸

"People ate around the clock," says St-Onge, who led a panel of experts convened by the American Heart Association to examine meal timing.⁹ In fact, there were only five hours—1:00 to 6:00 a.m.—during which people ate very little.⁸

How might a shorter eating window help people lose weight?

"It hasn't been studied extensively," says St-Onge. "But a big part is that it probably helps people cut calories."

In the smartphone study, people met their calorie needs by about 6:30 p.m. "After that, you're just tacking on extra calories," says St-Onge.

What happens when people eat the same number of calories within a short or a long eating window?

To find out, researchers fed eight overweight men with prediabetes all their food during either a six-hour or a 12-hour window, starting at their usual breakfast time (between 6:30 and 8:30 a.m.).¹⁰

After five weeks on each eating plan, weight loss and fasting blood sugar levels were no different.

However, the men were more insulin-sensitive and their blood pressure was roughly 10 points lower on the six-hour window plan. And they had less "desire to eat" in the evening, even though they had to stop eating by 2:30 p.m. at the latest.

"The results are interesting from a scientific perspective, but on a public health scale, it's not practical," says St-Onge. "Most people want to eat dinner with their family."

Would a six-hour window later in the day work as well? No one has looked.

But a few studies have pitted early-in-the-day against late-in-the-day eating.

In one, Israeli researchers assigned 74 women with the metabolic syndrome to follow one of two 1,400-calorie diets.¹¹

(The metabolic syndrome includes low HDL "good" cholesterol and elevated blood pressure, blood sugar, triglycerides, and/or waist size.)

The "breakfast diet" front-loaded the day's intake (700 calories at breakfast, 500 at lunch, and 200 at dinner). The "dinner diet" was more typical (200 calories at



Eating less late in the day may make your body's insulin work more efficiently.

breakfast, 500 at lunch, and 700 at dinner).

After three months, the breakfast dieters had lost 19 pounds, while the dinner dieters had lost only eight pounds. (Waist size, blood sugar, triglycerides, and HDL cholesterol also improved more in the breakfast dieters, though that could be because they lost more weight.)

In another study, Iranian scientists

Tried and True

Studies find that these tips can help you eat less.



Soft drink? No thanks.

■ **Don't drink your calories.** Liquid calories don't curb appetite as well as solids.

For example, researchers served 120 people a chicken sandwich with either a solid food (watermelon, cheese, or coconut) or its liquid counterpart (watermelon juice, milk, or coconut milk) for lunch. The

participants consumed 12 to 19 percent more calories on the days they got the liquids than the solids with their sandwich.¹

■ **Downsize.** When people are served a larger portion, they eat more.² Aim for a half cup of pasta, rice, or other grains and a deck-of-cards-size portion of meat, poultry, or fish. Eating at a restaurant? Split a dish with a friend, order a lunch portion, or take half home.

■ **Go low.** Fruits and vegetables have a low calorie density—that is, fewer calories per bite—because they're mostly water. Try replacing some of your cereal with berries or some pasta with veggies or your rice with riced cauliflower.

¹ *Int. J. Obes.* 31: 1688, 2007.

² *Cochrane Database Syst. Rev.* 2015. doi:10.1002/14651858.CD011045.pub2.

randomly assigned 69 women who were overweight or obese to eat 50 percent of their calories at lunch and 20 percent at dinner or vice versa.¹² Both groups were told to divide their remaining calories between breakfast and snacks, to cut calories and fat, to eat more vegetables and fruits, and to work toward an hour of exercise five days a week.

Three months later, the "big lunch" group had lost more weight (about 12½ pounds) than the "big dinner" group (about 9½ pounds). And insulin resistance improved more in the big lunch group.

Why might it matter when you eat?

"Our organs secrete hormones at various times of the day," explains St-Onge. "If you're not eating in line with those hormones, you could be feeding your body calories at a time when it's less receptive to them, which may lead to metabolic disorders."

But a handful of studies isn't much.

"Research on meal timing is still in the early stages," says St-Onge.

The Bottom Line: Eating light in the evening may make you less insulin-resistant and might help you shed more pounds.

Mindful Eating

"More and more research points to mindfulness—not certain foods—for weight loss," ran the *Washington Post* headline in March.

Mindfulness?

"Mindful eating means that you tune in to hunger signals so you only eat when you're hungry and stop eating when you're satisfied," says Evan Forman, professor of psychology at Drexel University.

"It also teaches people to slow down and to not eat out of boredom or in an automatic, mindless way."

Can mindful eating help people eat less?

In one study, Forman randomly assigned 55 overweight or obese adults to one of three groups: a control group that got usual healthy eating advice, a mindful

eating group, or a mindful decision-making group.¹³

"Mindful decision-making is about paying close attention to the cues and urges that drive people to eat, and how to make healthier choices in response," Forman says.

After six weeks, there was no difference in weight loss.

In the largest and longest trial so far,



Mindful eating can't hurt, but it's unlikely to help you lose weight.

researchers assigned 194 adults with obesity to attend, over 5½ months, 16 training sessions on either diet and exercise alone or combined with mindful eating and stress management.¹⁴ After a year, there was no difference in weight loss. Why not?

"We evolved in a world where food was scarce, so we were wise to eat when food was available," Forman speculates.

The Bottom Line: If mindful eating helps you, use it. But so far, studies don't find that it leads to more weight loss. 🍌

¹ *Obes. Rev.* 15: 812, 2014.

² *Appetite* 49: 652, 2007.

³ *Am. J. Clin. Nutr.* 100: 539, 2014.

⁴ *Am. J. Clin. Nutr.* 103: 747, 2016.

⁵ *Am. J. Clin. Nutr.* 100: 507, 2014.

⁶ *Br. J. Nutr.* 114: 98, 2015.

⁷ *Int. J. Obes.* 40: 305, 2016.

⁸ *Cell Metab.* 22: 789, 2015.

⁹ *Circulation* 135: e96, 2017.

¹⁰ *Cell Metab.* 27: 1, 2018.

¹¹ *Obesity* 21: 2504, 2013.

¹² *Am. J. Clin. Nutr.* 104: 982, 2016.

¹³ *J. Contextual Behav. Sci.* 6: 409, 2017.

¹⁴ *Obesity* 24: 794, 2016.

Quick Studies

A snapshot of the latest research on diet and exercise

Sat Fat, Sugar, & Liver Fat



A fatty liver may trigger insulin resistance, which can lead to type 2 diabetes. And eating too much saturated fat or sugar may create more liver fat than eating too much unsaturated fat.

Researchers randomly assigned 38 people to eat an extra 1,000 calories a day of saturated fat (from butter,

cheese, and coconut oil), unsaturated fat (largely from olive oil, pesto, and pecans), or sugar (from candy, a sugary drink, and orange juice).

After three weeks, liver fat increased more in the saturated fat group (55 percent) than in the unsaturated fat group (15 percent). The increase in the sugar group was 33 percent. The sat fat group also became more insulin resistant—that is, their insulin was less effective at moving blood sugar into cells—and their LDL (“bad”) cholesterol rose.

What to do: Replace saturated with unsaturated fats, and eat less sugar.

[Diabetes Care 2018. doi:10.2337/dc18-0071.](#)

Fish Oil for Dry Eye?

An estimated one out of seven adults have dry eye disease. Can fish oil help?

Researchers randomly assigned roughly 500 people with moderate-to-severe dry eye disease to take either fish oil capsules (2,000 mg of EPA plus 1,000 mg of DHA) or a placebo every day. After a year, there was no difference in dry-eye symptoms.

What to do: Don't take fish oil for dry eyes.

[N. Engl. J. Med. 378: 1681, 2018.](#)



Vitamin D & Colorectal Cancer

Does vitamin D lower the risk of colorectal cancer?

Scientists leading 17 studies worldwide pooled their data on roughly 5,700 participants with—and 7,100 without—colorectal cancer.

Compared to people with vitamin D blood levels between 20 and 24.9 ng/mL, those with levels between 30 and 34.9 had a 19 percent lower risk of colorectal cancer over an average of six years, and those with levels between 35 and 39.9 had a 27 percent lower risk.



What to do: Stay tuned. The recommended range for healthy bones is 20 to 30 ng/mL. But this kind of study can't prove that higher blood vitamin D levels lower the risk of colorectal cancer (because something else about people with higher levels may explain their lower risk).

Other studies are under way. In the meantime, take a multivitamin or a supplement with the RDA for vitamin D (600 IU a day up to age 70 and 800 IU over 70).

[J. Natl. Cancer Inst. 2018. doi:10.1093/jnci/djy087.](#)

Don't Fall for It

In 2014, more than one out of four older adults living at home reported a fall. What can lower the risk?

The U.S. Preventive Services Task Force examined 21 trials on exercise and seven trials on vitamin D. Among its conclusions: exercise lowered the risk of an injurious fall by 19 percent.

In most studies, vitamin D did not prevent falls, and in one, a large yearly dose (500,000 IU) increased the risk of falls by 15 percent.

A typical exercise program consisted of balance, gait, and functional training (for example, to stand up easily) three times a week.

What to do: Look for balance, strength, and flexibility exercises at the National Institute on Aging's Go4Life website (go4life.nia.nih.gov). And don't take high doses of vitamin D to prevent falls. 🍌

[JAMA 319: 1696, 1705, 2018.](#)



Calories Revealed!

What to look for on the menu

BY LINDSAY MOYER

Turkey or tuna sandwich? Tacos or fajitas? Latte or mocha? Calorie labeling—now on menus at chain restaurants with 20 or more locations—lets you cut hundreds of calories with a split-second decision. You'll now also see calories at chain movie theaters, convenience stores, and supermarkets (which sell prepared foods and bakery items). Yesss!

It's about time. The Center for Science in the Public Interest, *Nutrition Action's* publisher, has campaigned for menu labeling for over 15 years. These excerpts from menus show you what to look for (in yellow) and **OUR TAKE** on what it means.

RANGES



GRILLED TUSCAN CHICKEN SANDWICH

Grilled seasoned chicken breast topped with melted Swiss cheese, sun-dried tomato mayo. Served with lettuce, tomato, red onions, and pickles on a brioche bun. (Cal 960-1250)

French Fries **GF** (Cal 400)

Hash Browns **GF** (Cal 170)

Caesar Salad (Cal 280)

Garden Salad (Cal 190-420)

Seasonal Fruit **GF** (Cal 110)
(Selection may vary.)

OUR TAKE: How can Denny's chicken sandwich have 960-1,250 calories? It depends on whether your side is fruit (110 calories), hash browns (170 calories), or fries (400 calories). When you see a range, it means that the calories depend on sides, sauces, toppings, beverages, etc.

SIDES

HOUSE TOP SIRLOIN*

Thick, tender house special sirloin
(cal. 500) | 17.95

BJ's SIGNATURE SIDES

(cal. 560) | baked potato (cal. 590) | white cheddar mashed potatoes
steamed asparagus (cal. 20) | steamed broccoli (cal. 40) | fries (cal. 350)
Caesar salad (cal. 400) | wedge salad (cal. 320) | fresh mozzarella a

OUR TAKE: Does BJ's Restaurant & Brewhouse serve a 500-calorie sirloin steak dinner? Nope. That's just the steak. With a baked potato and wedge salad, you're looking at 1,410 calories.

UNIT FOODS



8-piece Hot Wings

200 Calories / 4 pieces

OUR TAKE: For foods that come in pieces, slices, etc., companies get to decide what a "unit" is. For example, at Domino's, it's one slice of pizza, half an order of wings (4 wings), or a quarter of an order of bread bites (4 bites). So you may have to divide or multiply to find the calories in *your* serving. Where is that calculator on your phone?

SLASHES

SIRLOIN* & CHOICE OF SHRIMP^o

Our signature center-cut sirloin with Grilled Shrimp on the Barbie or Gold Coast Coconut Shrimp.

6 oz. (370/580 calories) 17.49

9 oz. (470/680 calories) 21.99

12 oz. (580/790 calories) 23.99

OUR TAKE: How can Outback's 6 oz. sirloin have 370/580 calories? Menus use a slash when you have two choices (370 calories with grilled shrimp or 580 with coconut shrimp). Other slashes could indicate, say, grilled vs. fried chicken, a half vs. a full serving of pasta, or blue cheese vs. ranch dressing.

SALAD DRESSING

SIDE SALADS

HOUSE SALAD cal. 220

Romaine and kale, grape tomato, cucumber, mixed croutons with choice of dressing and a hot garlic breadstick.

CAESAR SALAD cal. 440

Romaine and kale, tossed in Caesar dressing. Topped with Romano cheeses, Asiago croutons and Parmesan cheese, grilled lemon and a hot garlic breadstick.

SALAD DRESSINGS

Balsamic Vinaigrette cal. 190

BBQ Ranch cal. 110

Blue Cheese cal. 200

Caesar cal. 190

Green Goddess cal. 110

Honey Mustard cal. 200

Lemon Soy Vinaigrette cal. 130

Low Fat Balsamic Vinaigrette cal. 50

Ranch cal. 130

OUR TAKE: At TGI Fridays, the Caesar salad's 440 calories include its Caesar dressing. But the House Salad comes with a choice of dressing, so you have to tack on its calories (50 to 200). Got that?

SALAD BARS

Chicken Salad with

160
calories

SERVING SIZE
4 oz

OUR TAKE: Check the serving size of prepared foods at supermarket salad bars and hot bars. For many items, it's 4 oz. That's typically just ½ cup.

PIZZA

original hand-tossed crust

(Calories listed below are per slice. All pizzas are 6 slices.)

Wheat whole grain crust upon request [add cal.20]

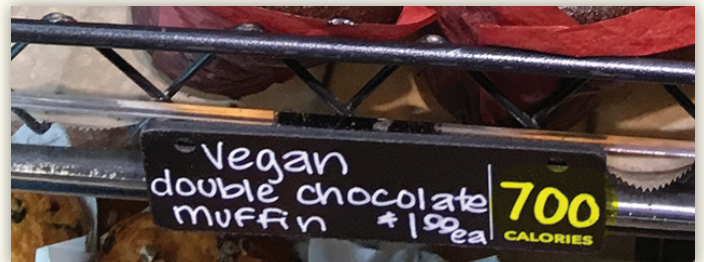
Crispy thin crust for an additional 1.50 [add cal.0]

Ask about our certified gluten-free pizzas

THE ORIGINAL BBQ CHICKEN PIZZA Created here in 1985. Our legendary BBQ sauce, smoked Gouda, red onions and fresh cilantro transform this original to iconic. **15.39 [cal.190]**

OUR TAKE: At California Pizza Kitchen, the menu lists pizzas along with pastas, salads, and other main dishes that typically serve one person. But beware: restaurants can list calories for a *whole pizza* or a *slice* (along with the number of slices per pizza).

FOODS ON DISPLAY



OUR TAKE: Don't miss the calories listed for fountain drinks, ice cream, baked goods, or other foods on display.

"Additional nutrition information available upon request."

That sentence, now on menus, is a reminder that you can ask a restaurant (or supermarket, convenience store, movie theater, etc.) for more numbers, including saturated fat, sodium, and carbs.

Also on menus: "2,000 calories a day is used for general nutrition advice, but calorie needs vary." So what if you need 1,800? Or 2,300? Close enough. When you see a 1,000-calorie entrée, watch out. 🍷

The Healthy Cook

Farm to Table



BY KATE SHERWOOD

Just back from the farmers market? These two dishes really pop when everything is as fresh from the garden as possible. 🍅

Got a question or suggestion? Write to Kate at healthycook@cspinet.org.



Basque Country Beans

 SERVES 4

- | | |
|--|---|
| 2 Tbs. extra-virgin olive oil | 1. Heat the oil in a large non-stick pan over medium heat until shimmering hot. Sauté the onion and pepper, stirring often, until they start to brown, 4-5 minutes. |
| 1 onion, sliced | |
| 1 bell pepper, sliced | |
| 3 cloves garlic, sliced | |
| 1 lb. green beans and/or yellow wax beans, trimmed | 2. Stir in the garlic and cook for 30 seconds. Stir in the beans and ¼ cup of water. Cover and cook over low heat until the beans are tender, 10-12 minutes. |
| ½ lb. tomatoes, chopped | |
| ¼ tsp. kosher salt | 3. Stir the tomatoes and salt into the beans. Cook until the tomatoes soften, 2-3 minutes. |

PER SERVING (1½ cups): calories 140 | total fat 7 g | sat fat 1 g | carbs 19 g | fiber 5 g | total sugar 11 g | added sugar 0 g | protein 4 g | sodium 140 mg



Summer Succotash

 SERVES 4

- | | |
|-------------------------------|--|
| 1 tsp. extra-virgin olive oil | 1. Heat the oil in a large non-stick pan over medium-high heat until shimmering hot. Sauté the zucchini and corn until just hot, 1-2 minutes. Remove from the pan and toss with the onion. |
| 2 cups diced zucchini | |
| 2 cups raw corn kernels | |
| 2 Tbs. minced Vidalia onion | 2. In a small bowl, mix the sour cream, mayonnaise, and salt. |
| 2 Tbs. low-fat sour cream | |
| 1 Tbs. mayonnaise | 3. On a serving platter, layer the tomatoes and the zucchini-corn mixture. Spoon the sour cream sauce on top. |
| ¼ tsp. kosher salt | |
| 2 large tomatoes, sliced | |

PER SERVING (1½ cups): calories 140 | total fat 6 g | sat fat 1 g | carbs 22 g | fiber 4 g | total sugar 8 g | added sugar 0 g | protein 5 g | sodium 160 mg



RESTAURANT CONFIDENTIAL

TREME EATING 2018

BY LINDSAY MOYER & BONNIE LIEBMAN

Welcome to the 2018 Xtreme Eating Awards.

Each of these restaurant items manages to cram in close to a day's calories, often accompanied by at least a day's saturated fat, sodium, or added sugar.

That's not easy. After all, a typical restaurant entrée has "only" about 1,000 calories. That's one reason why "only" two out of three adults and one out of three children or teens are overweight or obese.

But these dishes go the extra mile...just so more of us can start looking for extra-large-size apparel. Bravo!

The information for this article was compiled by Jennifer Urban and Jolene Mafnas.

WHAT'S A DAY'S WORTH?

Calories – 2,000 Sodium – 2,300 mg
Saturated Fat – 20 g Added Sugar – 50 g

Note: Sodium and added sugar only shown if the item contains at least half a day's worth.



Worst Way to Start the Day

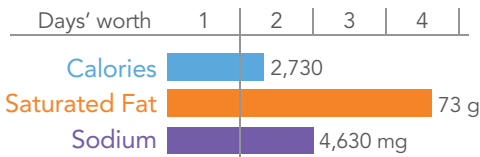
The Cheesecake Factory Breakfast Burrito is served all day, thank goodness.

It's a "warm tortilla filled with scrambled eggs, bacon, chicken chorizo, cheese, crispy potatoes, avocado, peppers and onions, over spicy ranchero sauce. Served with sour cream, salsa and black beans."

What? No pancakes?

IT'S LIKE EATING:

Seven McDonald's Sausage McMuffins.



Worst Special Effects

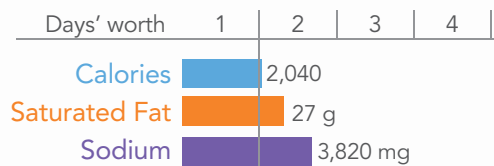
At **Yard House**, a **Vampire Taco Combo** comes with two 440-calorie tacos—each stuffed with pork, "bacon chorizo," cream sauce, and guacamole—plus 610 calories' worth of spicy rice and pinto beans.

A coating of grilled-to-a-crisp cheese gives the tortillas their ooh-so-spooky, bat-wing-like look.

And some people can't leave Yard House without its signature 32 oz. **Half Yard** of IPA. Now we're measuring alcohol by the yard? And drinking beer by the quart?

Grand total: 2,040 calories. Time to look into a silhouette-blurring Dracula cape? Good thing black is slimming.

IT'S LIKE EATING: Nine Taco Bell beef tacos plus three cans of Budweiser.





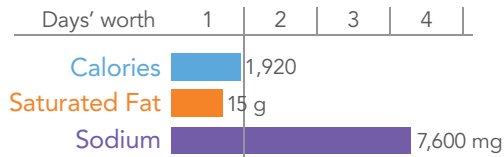
Worst Cinematic Snack

“Experience the legend,” says **AMC**. “Enjoy a snack that lasts all movie long when you treat yourself to 1.5 lbs. of soft Bavarian-style pretzel, sprinkled with coarse salt and served warm” with nacho “cheese” and mustard.

There’s nothing like eating your way through a 9”-wide **Bavarian Legend Soft Pretzel** (that’s a pound and a half of mostly white flour—more than a loaf of bread’s worth) as you watch a movie. You’d be better off (shudder) with a large popcorn.

Bonus: you get to take home the brand new fat cells you’ll need to store the calories you don’t burn during the show!

IT’S LIKE EATING: Six Auntie Anne’s Original Soft Pretzels.



Least Creative Mashup

Oh to be a fly on the wall when **Chili’s** execs dreamed up the latest addition to the chain’s Crispers menu.

“We need a new shtick to sell our battered fried chicken. I’m thinking add some white flour to stay on budget.”

“Buns?” “Pasta?” “Pancakes?” “Tacos?” “Quesadillas?”

“Nah.”

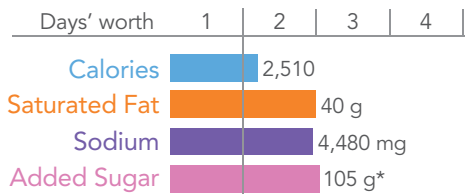
“Waffles?”

“Bingo!”

And voilà! **Honey-Chipotle Crispers & Waffles** (“Crispers on top of Belgian waffles. Topped with bacon, jalapeños, ancho-chile ranch. Served with fries & honey-chipotle sauce”).

Overheard on the way out: “Next year, Crisper Cupcakes.”

IT’S LIKE EATING: Five Krispy Kreme glazed doughnuts smothered in 30 McDonald’s Chicken McNuggets and five packets of barbecue sauce.



*Estimate.



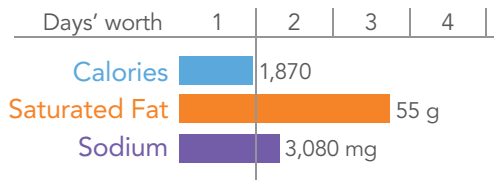
Worst Adapted Pizza

“Chopped chicken breast coated with breadcrumbs, covered with marinara sauce and lots of melted cheese,” says **The Cheesecake Factory’s** menu. “Topped with angel hair pasta in an Alfredo cream sauce.”

Brilliant. Distract diners with the **Chicken Parmesan Pizza Style’s** chicken, so they don’t think about its size (nearly 10 inches across), breading, Alfredo, cheese, or white flour.

What’s next? Chicken Hot Fudge Sundae Style?

IT’S LIKE EATING: Four pieces of Popeyes fried chicken plus four biscuits.





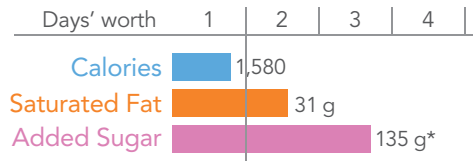
Worst Makeup

What on earth is **BJ's Restaurant & Brewhouse Peanut Butter S'mores Pizookie**? "Ghirardelli triple chocolate cookie | peanut butter | marshmallow fluff | marshmallows | rich vanilla bean ice cream," says the menu.

That's | all?

Nothing like a pizza-sized cookie for making s'more of you!

IT'S LIKE EATING: An entire (14 oz.) container of Häagen-Dazs Chocolate Ice Cream plus two cups of marshmallow fluff.



*Estimate.

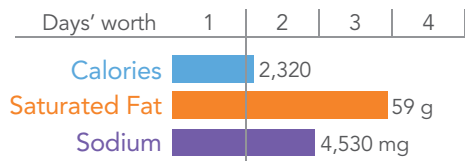


Worst Visceral Effects

"Penne with aged cheddar, parmesan and romano topped with buffalo chicken and baked in a deep dish pan," says the **Uno Pizzeria & Grill** menu. "How could you say no?"

Indeed. Who *doesn't* want their own personal trough of **Deep Dish Buffalo Chicken Mac & Cheese**? You can't beat deep dish for building deep belly fat!

IT'S LIKE EATING: Three orders of Olive Garden's Cheese Ravioli.



Worst Revival

"This modern day 'roadside' burger stand serves up the most delicious burgers, hot dogs, frozen custard, shakes, beer, wine and more," says **Shake Shack's** website. "Fresh, simple, high-quality versions of the classics..."

Just gaze at the quality of our sample order:

Double SmokeShack: "Double cheeseburger topped with all-natural apple-wood smoked bacon, chopped cherry pepper, ShackSauce."

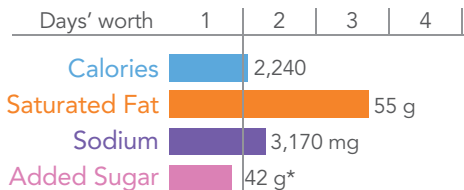
Fries: "Crispy, crunchy, salty potato-y goodness!"

Peanut Butter Shake: "Make it malted, why don't you?"

What a meal! You get 930 high-quality calories in the burger, plus 420 in the fries. And you get to wash it all down with another 890 from the shake. (Why add a shake? Well, it's not called the *Shakeless* Shack.)

And many of those calories come from red meat, a white-flour bun, white potatoes, and the simple, high-quality sugar in the shake. Awesome!

IT'S LIKE EATING: Three McDonald's Quarter Pounders with Cheese plus three McDonald's Vanilla Cones. 🍦



*Estimate.



Photos: Jennifer Urbani/CSPI.



RIGHT STUFF

Cutie Cukes



Sometimes you just want a freebie—something you can chew on for next to no calories.

Enter **mini cucumbers**.

It's said that these compact cukes (sometimes called Persian cucumbers) got their start in the late 1930s, when breeders

crossed Middle-Eastern cucumbers with Indian, Japanese, Chinese, American, English, and Dutch varieties to make them more resilient to disease.

Cucumbers may not compare to, say, leafy greens in the nutrient department. But—repeat after us—all veggies are good veggies.

At 10 calories a pop, the minis are a handy answer to that age-old question: "What's a portable, healthy snack?" Bonus: like most mini veggies, their flavor is a tad more intense than their larger brethren's.

Fun fact: cucumbers are about 95 percent water. No wonder they're so refreshing.

So if you want to feel, shall we say, cool as a cucumber, pack a handful of crisp mini cukes in your lunch box or glove compartment or backpack. No need to peel off their thin skin.

Of course, mini cucumbers have their place in the kitchen as well. Try a green salad with lettuce, cucumbers, and avocado tossed with a sesame vinaigrette. Or cut them into a chicken, shrimp, or tuna salad (instant crunch). Or slice them into sticks and eat with hummus or yogurt dip. They're also a gotta-have ingredient in gazpacho.

Cucumbers are great year round, but their peak season is summer...just when you need them most.

Photos: Jolene Mafnas/CSPI (top left), Jennifer Urban/CSPI (top right), Kate Sherwood & Jennifer Urban/CSPI (bottom center), kovalava_kai/stock.adobe.com (bottom right).

FOOD PORN



Bowled Over

You've got to hand it to **Olive Garden**. Sales at "casual dining" restaurants are on the skids, yet the Garden has apparently found a way to buck the trend.

The secret? Innovation...Olive Garden style. The chain that brought the world Italian meat-and-cheese nachos, deep-fried breaded lasagna, pasta-stuffed pot pies, and breadstick sandwiches never has to scrape the bottom of the barrel to come up with yet another crowd-pleasing mix of cheese, meat, and white flour galore.

The latest: the **Meatball Pizza Bowl**—a bowl-shaped pizza crust filled with meat sauce and melted cheese and topped with meatballs.

The dish is part of the Lunch Duos menu. Its theme: "Get more out of lunch." Got that right. Nothing like

having half a day's calories (950) for just half of your "duo."

The other half? Unlimited breadsticks and salad (or soup). Oops!

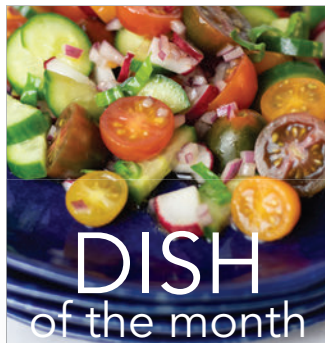
Let's say you have just one breadstick and one serving of salad with house dressing with your pizza bowl. (It *could* happen.) Now your lunch is up to 1,240 calories and 1½ days' worth of saturated fat (31 grams) and sodium (3,730 milligrams). All for just \$8.99.

It's like eating 1½ Pizza Hut Meat Lover's Personal Pan Pizzas.

"Get never-ending value for lunch at Olive Garden," goes the TV ad.

Value, schmalue. It's the never-ending diabetes we're worried about.

olivegarden.com—(800) 331-2729



DISH of the month

Tomato Cucumber Salad

Whisk together 2 Tbs. extra-virgin olive oil, 2 tsp. red wine vinegar, and ¼ tsp. salt. Toss with 3 cups chopped tomatoes, 3 sliced mini cucumbers, 3 sliced radishes, 2 Tbs. minced red onion, and 1 Tbs. minced fresh basil or mint.

Serves 4.

quick tip

Fruit for dessert? It's not just nutritious. Fruit also helps cleanse your palate of strong flavors like garlic and onion. Try summer berries or stone fruits (peaches, apricots, nectarines, etc.).

