

Nutrition *Action*

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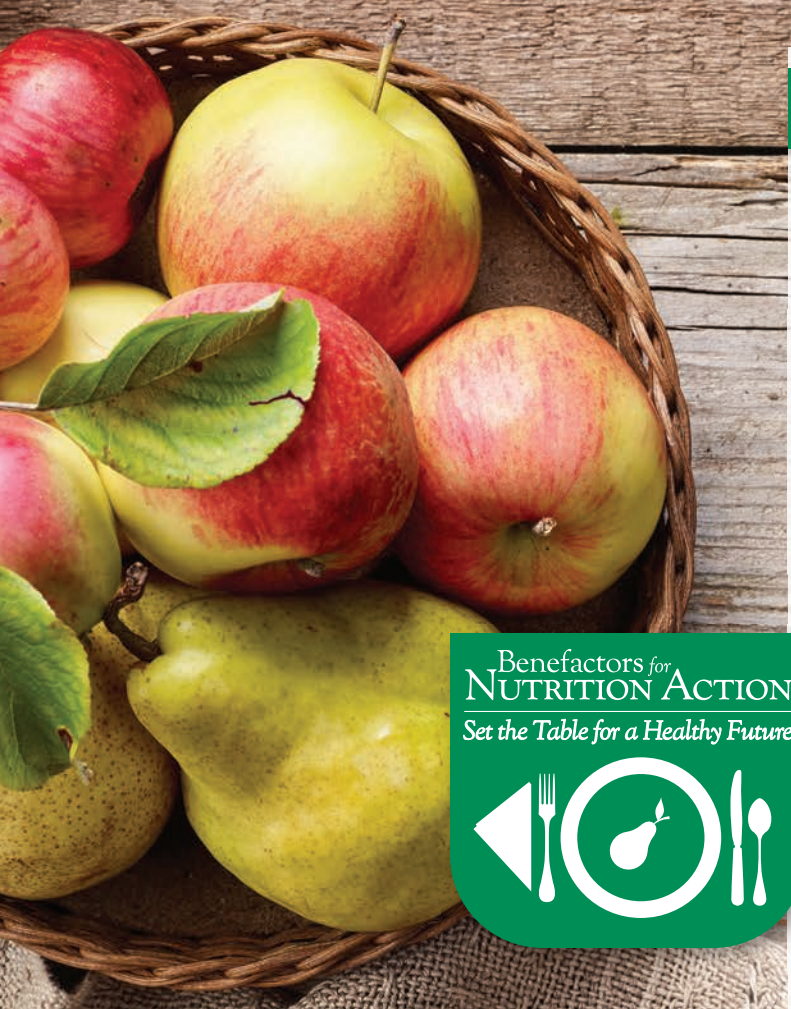
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ARE YOU EATING TOO MANY CARBS?



refined



BY BONNIE LIEBMAN

There's no good evidence that low-carb diets are a magic bullet for weight loss. But many people eat too many refined carbs, not just from sweets but from oversized servings of pasta, pizza, burritos, burgers, and sandwiches made with white flour, along with the chips or fries that are served on the side.

Low-carb diets are hot. Will they make the pounds melt away? No better than other diets (see *Nutrition Action*, Oct. 2018, p. 3).

But Americans do have a carb problem. On average, we get about half our calories from carbs, and roughly 70 percent of them come from refined grains, potatoes, fruit juice, and added sugars.¹ They should come from vegetables, whole fruits, beans, and whole grains.

What happens when you overdo refined carbs?

Triglyceride Trouble

"You can end up with carbohydrate-induced high blood triglyceride levels from eating too many refined carbs," says Alice H. Lichtenstein, director of the Cardiovascular Nutrition Laboratory at Tufts University.

Triglycerides (a type of fat found in foods and in the body) climb when carbs overwhelm the liver.

"Refined carbs get rapidly absorbed, so there's a tremendous flood of carbohydrates, usually in the form of glucose, coming into the system," explains Lichtenstein.

Some of the glucose comes from sugars and some comes from the starch in grains, potatoes, and other, well, starchy foods. (Starches are long chains of glucose.)

"The liver is stuck trying to figure out what to do with the glucose," says Lichtenstein. "The liver's capacity to

store it as glycogen is exceeded, so it uses the glucose to make fats."

The fats get packaged into triglycerides, which the liver then sends out into the bloodstream, raising blood triglycerides.²

"The evidence that triglycerides cause heart disease isn't as strong as it is for LDL cholesterol," says Meir Stampfer, professor of epidemiology and nutrition at the Harvard T.H. Chan School of Public Health. "But most researchers would be concerned about high triglycerides increasing the risk of atherosclerosis."

And new evidence from a large company-funded drug trial has made

The REDUCE-IT participants had elevated triglycerides—between 135 and 499—and were taking statins because they were at high risk for a heart attack, stroke, or other cardiovascular event. Those who got Vascepa, the drug with icosapent ethyl, had a 25 percent lower risk of cardiovascular events than those who got a placebo.³

Since the REDUCE-IT results were released, "targeting elevated triglycerides has become more of a central strategy for reducing the risk of cardiovascular disease," says Juraschek.

The American Heart Association cited REDUCE-IT in its recent advice to use prescription ethyl esters of EPA alone (Vascepa) or of EPA plus DHA (Lovaza or its generic) to treat triglyceride levels of 200 or higher.⁴

That said, it's possible that Vascepa led to such an impressive drop in risk

not only by lowering triglycerides but also by curbing inflammation or blood clots. The STRENGTH trial, which is lowering triglycerides with a different form of EPA plus DHA, may offer some answers. It's expected to end in 2020.

The Metabolic Syndrome

"High triglycerides often occur together with low HDL, or good, cholesterol," notes Stampfer.

They're two out of five features of the "metabolic syndrome," which signals a higher risk of type 2 diabetes and heart disease (see "The Metabolic Syndrome").

Back in 1988, one in four adults had the metabolic syndrome. Thanks largely to bulging waists, it's now one in three.

The Metabolic Syndrome

1. Waist size	Women: more than 35-inch waist Men: more than 40-inch waist ¹
2. Triglycerides*	150 or higher
3. HDL ("good") cholesterol*	Women: under 50 Men: under 40
4. Blood pressure	Systolic: 130 or higher or Diastolic: 85 or higher
5. Blood sugar*	100 or higher

* Fasting. ¹ For some people, a smaller waist (37 inches for men and 31 inches for women) can be a risk factor.

Source: [National Heart, Lung, and Blood Institute](#).

You have the metabolic syndrome—a sign of insulin resistance—if you have any three of its five features.



scientists even more convinced that triglycerides matter.

"The REDUCE-IT study looked at icosapent ethyl, a concentrated form of the EPA in fish oil, which lowers triglycerides," says Stephen Juraschek, assistant professor of medicine at Harvard Medical School.



At Chipotle, a typical Chicken Burrito gets 2 servings of grain from the tortilla and 2 more from the rice.

“A lean and active person can eat more carbohydrates from grains and added sugars without an adverse metabolic impact,” says Stampfer.

“When Chinese peasants were getting 70 percent of their calories from rice—and it was white rice if they could afford it—their incidence of diabetes wasn’t going through the roof, because they were skinny and active. But that same diet in a sedentary, overweight population is devastating.”

It’s no news that very-high-carb diets can raise triglycerides.

In 1998, Lichtenstein co-authored an American Heart Association advisory warning about the possibility.⁵ The title was “Very Low Fat Diets,” because diets that get only about 15 percent of calories from fat usually get about 70 percent of calories from carbs. (Protein is typically around 15 percent.)

“There’s a myth that the government and health organizations are still recommending a low-fat diet,” says Lichtenstein. “But that hasn’t been the case since 2000.”

And even before 2000, the heart association and the government recommended capping fat at 30—not 15—percent of calories. (The average American adult gets about 35 percent of calories from fat.)

“The current recommendation is to replace meat and dairy fat with unsaturated fat, primarily polyunsaturated fat, not to cut all fats,” notes Lichtenstein.

What’s Optimal?

If 70 percent of calories from carbs is too high, what level is optimal? It’s not clear.

The OmniHeart trial offers some clues. It pitted a healthy DASH (Dietary Approaches to Stop Hypertension) higher-carb diet (roughly 60 percent of calories from carbs) against a higher-protein diet and a higher-unsaturated-fat diet (each with about 50 percent of calories from carbs).⁶

All three diets were loaded with

fruits and vegetables, high in fiber, and low in saturated fat and added sugars (see “The OmniHeart Diet,” p. 6).

“When people went from their typical American diet to any of the three healthy diets, there was a dramatic improvement in cardiovascular risk factors,” says Juraschek. That is, their blood pressure and LDL (“bad”) cholesterol dropped.

However, triglycerides declined only on the higher-protein and higher-unsaturated-fat diets.

Granted, the higher-carb diet had more fruit juices. And sugars—including those in juice—may boost triglycerides more than starches do.

Even so, “to optimize a heart-healthy diet, the higher-unsaturated fat diet or the higher-protein diet seems to give you the most bang for your buck,” says Juraschek.

More protein didn’t mean that the OmniHeart volunteers were eating fatty steak or cheese, he notes. “Roughly half of the protein served in OmniHeart was from vegetable sources.”

So roughly half

came from foods like beans, nuts, and tofu. The rest was largely from animal sources like chicken, fish, and low-fat dairy.

Still, OmniHeart’s big takeaway is that healthy carbs—mostly from vegetables and fruit—are the clear winners.

“We tweaked the carbs, protein, and fats, but all three DASH-like diets were rich in fruits and vegetables and low in sweets,” says Juraschek. “That’s the dramatic shift we need.”

Lower Blood Sugar?

Are high triglycerides the only downside to extra carbs? It’s too early to say. But preliminary results from the OmniCarb study suggest that more carbs may also mean higher levels of blood sugar over time.

“OmniCarb focused on whether you could improve a DASH diet by lowering the glycemic index of its carbohydrates,” says Juraschek.

(Carbs with a high glycemic index cause a bigger spike in blood sugar levels than carbs with a low glycemic index.)

The OmniCarb researchers thought that low-glycemic carbs might make the body’s insulin better at lowering blood sugar levels.

But when they fed people a healthy DASH diet with low-glycemic carbs—like pasta instead of instant potatoes, steel cut oats instead of instant oatmeal,



A California Pizza Kitchen pizza (typically served as an entrée for one) gets 5½ servings of grain from the crust.

and apples instead of bananas—nothing improved much.⁷

In contrast, when the researchers cut carbs from about 60 percent of calories to 40 percent, triglycerides fell markedly.

What's more, cutting carbs lowered fructosamine—an intermediate-term marker of blood sugar levels—when people were eating low-glycemic carbs.⁸

"In OmniCarb, diets were fed to participants for only five weeks, so it was too short to look at hemoglobin A1c, the best marker of blood sugar levels," says Juraschek.

Fructosamine is similar to hemoglobin A1c. "Both represent binding between sugar and proteins, but fructosamine turns over in the blood in about 17 days, while A1c takes about three months," he explains.

And fructosamine is a good predictor of who will get type 2 diabetes.

Less Liver Fat?

The CENTRAL study randomly assigned 278 sedentary Israeli adults (mostly men) with oversized waists or high triglycerides and low HDL cholesterol to one of two diets with equal calories: low-fat or Mediterranean low-carb.¹⁰ (The study was partly funded by the Atkins Foundation.)

The Mediterranean low-carb group was told to eat more vegetables, beans, poultry, and fish instead of beef and lamb. And they were given an ounce of walnuts to eat each day. On average, they got about 37 percent of their calories from carbs.



At the Corner Bakery Cafe, the Tomato Mozzarella sandwich gets 4 servings of grain from the bread.

The low-fat group was told to eat whole grains, vegetables, fruits, and beans, and to cut back on sweets and high-fat snacks. On average, 53 percent of their calories were carbs.

Each group was served either a low-fat or Mediterranean low-carb lunch—the main meal of the day in Israel—at their workplace.

After 1½ years, both groups had lost about six pounds. But waist size, triglycerides, and liver fat fell more in the Mediterranean low-carb group.¹¹

And liver fat matters. "It's strongly linked to type 2 diabetes and the metabolic syndrome, and it can cause liver damage over the long term," says co-author Meir Stampfer. "So it's a serious problem."

More troubling: the incidence of fatty liver disease is rising, even in children. "That's concerning because the liver

can sustain some damage and still function for some time, but at some point, it can't," notes Stampfer.

Replacing some carbs with unsaturated fat can help. "It's an easy fix," he says.

But that may not matter for everyone.

"The people in the CENTRAL study were overweight, and they were at risk for metabolic syndrome and fatty liver disease," says Stampfer. "So they needed that shift more than lean people."

Was it fewer carbs or the extra unsaturated fat they ate that mattered?

"It's hard to know because you can't reduce one source of calories without increasing something else," says Stampfer. "But if you replace carbs with healthy fats, you get a double win," because it's a plus for the heart and maybe also for the liver.

Going Mediterranean?

If you replace some of your carbs with unsaturated fat, you're moving toward a Mediterranean diet. Just don't confuse that with what you'd get at a typical Italian or Greek restaurant.

"It's not pasta and pizza with a Mediterranean flair," says Stampfer. "I don't think people understand that a Mediterranean diet is low in red meat."

Some features are clear, at least to researchers.

"We tend to think of more beans, fruits, vegetables, and fish," says Tufts's Alice Lichtenstein. "And most people agree that the primary fat is olive oil."

But the definition of a Mediterranean-style diet varies. "Some people project on it everything they think is good about a diet," notes Lichtenstein.

Take whole grains. Many researchers



Applebee's Classic Broccoli Chicken Alfredo gets 1 serving of grain from the breadstick and 3 more from the pasta.

"In the Atherosclerosis Risk in Communities study, high fructosamine was a strong risk factor for developing diabetes," notes Juraschek.⁹

Further studies are needed to confirm OmniCarb's preliminary findings, since most studies have only tested *advice* to eat low-carb diets and have looked only at fasting blood sugar or glucose tolerance.

But given what we know so far, says Juraschek, "exchanging carbs for more unsaturated fat and protein may have the best benefits for blood sugar."

call them part of a Mediterranean diet.

“But whether it’s pasta or bread or rice, I’ve seen very little whole grain in the Mediterranean countries I’ve been to,” says Lichtenstein.

And even if it were whole grain, you’d have to eat fewer carbs than what many Americans are used to in order to make room for the olive oil.

Take the higher-unsaturated-fat Omni-Heart diet. Many of its carbs came from fruits and vegetables. So in a typical 2,000-calorie diet, there’s room for only four servings a day of grain...and each serving is just a *half cup* of cooked pasta, rice, or other grain, or just a small (1 oz.) slice of bread.

“Most people underestimate the number of servings in our rice and pasta, so we tend to overload on them,” says Juraschek.

The government’s Dietary Guidelines for Americans recommends six servings of grain in a 2,000-calorie diet. And those servings are also just a half cup. So you could get a day’s worth of grain in one plate of Spaghetti and Meatballs at The Cheesecake Factory. And those six servings don’t include potatoes.

“White potatoes are similar to refined grains in the way the body uses them,”

says Lichtenstein. And many meals have both grains *and* potatoes.

“Sometimes at a meeting, everyone gets a box lunch, and usually it’s a sandwich, a bag of potato chips, and a cookie,” says Juraschek.

That’s carbs with a side of carbs and a dessert of carbs, even if you don’t add a sugary drink (more carbs).

“Almost all typical American meals are constructed that way,” says Juraschek.

“There’s carbohydrates and meat—like bread and cold cuts or red meat and potatoes—and then maybe a small salad or vegetables to round it out.”

Or, take a burrito. It’s often chicken or meat plus a pile of rice wrapped in a huge white-flour tortilla.

“My wife is a cardiologist, and Chipotle was one of our staples in medical school,” says Juraschek. “But once they started putting Nutrition Facts online, we were really shocked.”

Flip the proportions, he says. “One thing that people miss about the OmniHeart diet is that it has 8 to 12 servings of fruit and vegetables per day.”

And the fruit should be whole, not juice, and the veggies should be low in calories, not starchy.

“When we talk about increasing vegetable intake, we’re really talking about green leafy vegetables and cruciferous vegetables like broccoli, cauliflower, and Brussels sprouts, not potatoes,” says Lichtenstein.

And make sure your grains are whole.

“There’s such a carb phobia out there now that some people aren’t getting the benefit of whole grains,” says Stampfer. “But the optimal diet should have some. When you’re having grains, make it 100 percent whole grain.”

Their intact fiber may help prevent constipation, keep your gut bacteria in shape, and protect your heart.

“We should be packing on fruits and vegetables and then adding some-

The OmniHeart Diet

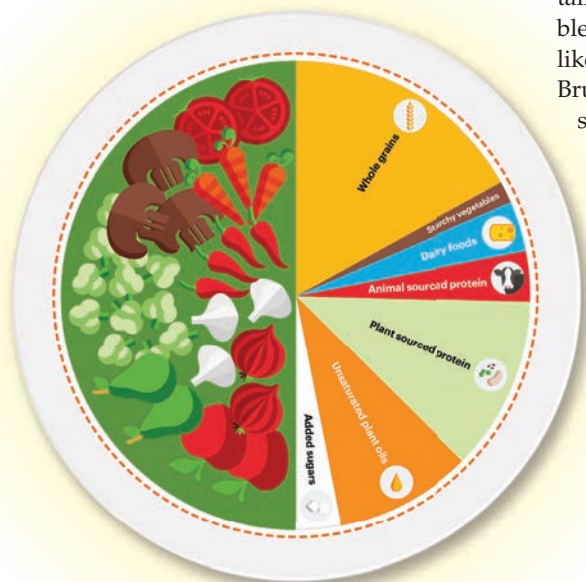
Here’s a hybrid of the higher-protein and higher-unsaturated-fat versions of the DASH diet. It has a “wild card” that lets you eat one extra serving of protein, healthy fat, or carbs each day.

The diet is low in saturated fat, added sugar, and salt, and rich in potassium, magnesium, calcium, and fiber.

The servings add up to about 2,000 calories a day. Need more? Make these small servings larger.

	Daily Servings
 Vegetables & Fruit 1 SERVING: ½ cup (or 1 cup greens) or 1 piece fruit	11
 Grains 1 SERVING: ½ cup pasta or rice or cereal or 1 slice bread	4
 Low-fat Dairy 1 SERVING: 1 cup milk or yogurt or 1½ oz. cheese	2
 Legumes & Nuts 1 SERVING: ½ cup beans or ¼ cup nuts or 4 oz. tofu	2
 Poultry, Fish, Lean Meat 1 SERVING: ¼ lb. cooked	1
 Oils & Fats 1 SERVING: 1 Tbs.	2
 Desserts & Sweets 1 SERVING: 1 tsp. sugar or 1 small cookie	2
 Wild Card Poultry, Fish, Lean Meat or Oils & Fats or Grains or Desserts & Sweets	1

Planetary Health Plate



Like the OmniHeart diets, a “planetary health plate” is half vegetables and fruit, but it has more whole grains, beans, and nuts and less dairy, chicken, fish, and meat.

Source: eatforum.org/eat-lancet-commission.

thing small on the side for protein and grains,” says Juraschek.

That isn’t just on target for your health. It’s close—though not identical—to the target for curbing the planetary damage that our children will face by 2050 (see “The Grandparents’ Diet,” *Nutrition Action*, March 2019, p. 3).

Talk about a win-win. 🍌

- 1 *JAMA* 322: 1178, 2019.
- 2 *Circulation* 123: 2292, 2011.
- 3 *N. Engl. J. Med.* 380: 11, 89, 2019.
- 4 *Circulation* 140: e673, 2019.
- 5 *Circulation* 98: 935, 1998.
- 6 *JAMA* 294: 2455, 2005.
- 7 *JAMA* 312: 2531, 2014.
- 8 *BMJ Open Diabetes Res. Care* 4: e000276, 2016.
- 9 *Lancet Diabetes Endocrinol.* 2: 279, 2014.
- 10 *Circulation* 137: 1143, 2018.
- 11 *J. Hepatol.* 71: 379, 2019.

Quick Studies

A snapshot of the latest research on diet, exercise, and more.

Don't Overdo D



You need vitamin D to absorb calcium and build bones. But more isn't better.

Researchers randomly assigned 311 adults aged 55 to 70 to take one of three daily doses of vitamin D: 400 IU, 4,000 IU, or 10,000 IU. Their blood levels ranged from 12 to 50 nanograms per milliliter when the study started, so some were in the "inadequate" range (12 to 20 ng/mL). None were "deficient" (less than 12 ng/mL).

After three years, arm bone density was lower in those who took 4,000 IU or 10,000 IU a day than in those who took

400 IU, and leg bone density was lower in those who took 10,000 IU than in those who took 400 IU. Bone strength was no different.

What to do: Aim for the Recommended Dietary Allowance for vitamin D: 600 IU a day up to age 70 and 800 IU over 70. The "Tolerable Upper Intake Level" set in 2010 is 4,000 IU a day. This study suggests that it may be too high.

[JAMA 322: 736, 2019.](#)

Fiber & Diverticulitis

Fruit and whole grains may lower the risk of diverticulitis (inflamed bulges in the colon).

Researchers tracked roughly 50,000 women for 24 years. Those who got the most fiber from whole fruit had a 17 percent lower risk of diverticulitis than those who got the least. Fiber from grain was linked to a 10 percent lower risk.

What to do: Fruit? Whole grains? Go get 'em.

[Am. J. Gastroenterol. 114:1531, 2019.](#)



Sat Fat & the Liver



Overeating foods rich in saturated—but not polyunsaturated—fat boosts liver fat, which can lead to liver damage and may raise the risk of type 2 diabetes.

Swedish researchers randomly assigned 60 overweight or obese people to gain roughly five pounds by adding muffins made with either a saturated fat (palm oil) or a polyunsaturated fat (sunflower oil) to their usual diets.

After eight weeks, liver fat increased by 53 percent in those who ate the muffins made with palm oil, but not at all in those who ate the muffins made with sunflower oil. What's more, an enzyme that can signal early liver damage rose only in those who ate the palm-oil muffins (although it remained in its normal range).

What to do: Replace most saturated fats with unsaturated fats. Though this study used only palm oil, an earlier study reported similar results with a mix of three sat fats: coconut oil, butter, and blue cheese.

[J. Clin. Endocrinol. Metab. 2019. doi:10.1210/je.2019-00160.](#)

Does Dairy Deter Diabetes?

Dairy eaters have a lower risk of type 2 diabetes, the industry often boasts. Does dairy deserve the credit or does something else about dairy eaters explain the link?

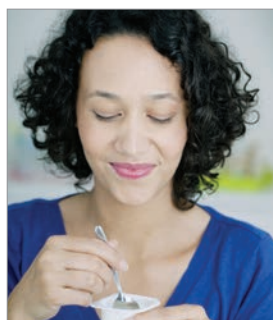
Researchers (including two employees of the dairy industry, which partly funded the study) told 45 overweight people to eat either a low- or a high-dairy diet for six

weeks each. Low dairy meant no more than 1 serving of dairy per day. High dairy meant at least 2 servings of unsweetened yogurt, 1 to 2 servings of cheese, and 1 to 3 servings of milk or buttermilk a day. All the dairy foods were lower-fat.

Blood sugar levels were no lower on the high-dairy diet than on the low-dairy diet. But fasting insulin levels were slightly higher on the high-dairy diet, a sign that insulin resistance was worse.

What to do: Don't expect dairy to ward off diabetes. 🍌

[Am. J. Clin. Nutr. 109: 1555, 2019.](#)



HOT TOPICS

What to know about the latest trends

BY CAITLIN DOW

Are “antinutrients” robbing your body of vitamins and minerals? Is celery juice a miracle healing tonic? Does your liver need a boost from supplements and coffee enemas? What’s behind gluten sensitivity? Here’s what to know about the nutrition trends *du jour*.

ANTINUTRIENTS

Antinutrients “can be a source of severe food cravings that distract you from whatever you’re trying to accomplish, or they can rob you of nutrients and interfere with your hormone function, wearing down different systems in your body and causing slow performance declines over time,” claims Dave Asprey in his book *The Bulletproof Diet*.

Are you being robbed?

“Antinutrients are compounds in food that can interfere with the absorption of some nutrients,” says Reed Mangels, retired adjunct associate professor of nutrition at the University of Massachusetts Amherst. But they may not matter. For example:

■ **Lectins.** They’re found in whole grains, beans, and some other foods. If not thoroughly cooked, lectins can damage cells lining the digestive tract and may prevent nutrients from being absorbed.¹ But who’s eating raw grains or beans?

■ **Oxalate.** “Spinach has some calcium, but you don’t absorb most of it because oxalate ties it up,” says Mangels. But most people don’t rely on spinach for their calcium.

■ **Goitrogens.** They’re found in soy and cruciferous vegetables like kale and Brussels sprouts, and they can interfere with the thyroid gland’s ability to take up iodine and make thyroid hormones.

“But as long as you’re getting enough iodine, which most people are, there’s no need to worry,” notes Mangels.

■ **Phytate.** The phytate in whole grains, beans, nuts, and seeds binds to zinc and iron, so you absorb less of the minerals than you do from eating fish, poultry, or meat.

“Of all the antinutrients, I think about phytates the most because they’re in a lot of foundational foods for vegetarians,” says Mangels. But people eating plant-heavy diets needn’t worry.

In one study, researchers fed 21 young women a vegetarian diet or a typical U.S. diet for eight weeks each.² The vegetarian diet had more beans, whole grains, and vegetables and roughly triple the phytate of the non-vegetarian diet.

The vegetarian diet contained 14 percent less zinc, and the women absorbed 21 percent less of it, so they got 35 percent less zinc on the vegetarian than on the non-vegetarian diet. But their blood zinc levels were only 5 percent lower, and they were still within the normal range.

“The study’s results suggest that the women absorbed enough zinc to replace what they excreted, and that zinc requirements can be met with a vegetarian diet rich in whole grains and legumes,” says study author Janet Hunt, retired research nutritionist at the U.S. Department of Agriculture.

The women also absorbed roughly 70 percent less non-heme iron from the vegetarian diet.³ (Non-heme iron, which is found

in plant-based foods, isn’t as well absorbed as heme iron, which is found in meat, poultry, and seafood.)

“But the women had no signs of iron deficiency or anemia when they were on the vegetarian diet,” says Hunt. “That’s consistent with other studies that show reduced iron stores, but minimal or no difference in the occurrence of iron-deficiency anemia, in vegetarians.”

Hunt’s takeaway: “The body does a pretty good job at adapting to changes in the amount and avail-

ability of minerals in the diet to maintain an equilibrium.”

So much for robbing your body of nutrients.

What’s more, sprouting or fermenting can slash phytates.

“Fermented soy products like tempeh have less phytate than tofu,” Mangels notes. “You’ll also get less phytate from bread leavened by yeast, as opposed to muffins or biscuits made with baking powder.”

“It’s absurd to knock whole grains, beans, nuts, and veggies out of your diet to avoid something that’s probably not harming your nutritional status in the first place.”



Foods like these have antinutrients. And that’s OK.

¹ *Plant Foods Hum. Nutr.* 43: 63, 1993.

² *Am. J. Clin. Nutr.* 67: 421, 1998.

³ *Am. J. Clin. Nutr.* 69: 944, 1999.

CELERY JUICE

“I believe that celery juice is a miracle juice and that it’s one of the greatest healing tonics of all time,” writes Anthony William on [goop.com](#).

The self-proclaimed “Medical Medium” says that his knowledge about health comes from a voice he hears that he calls “Spirit.”

William recommends drinking 16 ounces of fresh celery juice with nothing added—or it will lose its healing benefits, he says—on an empty stomach every day. Voilà!

Celery juice can help reverse Alzheimer’s disease, prevent cancer and hair loss, manage addiction, promote weight loss, clear up acne, reduce inflammation, combat night sweats, heal digestive problems, fight off unwanted bacteria and viruses, and much more, promises William in his book titled (what else?) *Celery Juice*.

Really?

“Celery has some nutrients, but it’s no superstar,” says Lisa Young, adjunct professor of nutrition at New York University. For example, ounce for ounce, kale has roughly 10 times more vitamins A and K and 30 times more vitamin C.

Looking for research on celery juice? Good luck.

No problem, says William. There are “undiscovered heal-



William with Sylvester Stallone. Many celebrities endorse celery juice, despite the evidence-free claims.

ing properties inside celery juice that medical research and science are not yet aware of,” claims his [website](#).

“A couple of small, short-term studies on celery were done in people, but the rest were done on lab animals,” says Young. And the few human studies—which reported that (far more concentrated) celery *extract* lowered high blood pressure or blood sugar, for example—had serious flaws, like no control group.^{1,2}

So why do so many people swear by celery juice?

“Maybe they’re not healthy eaters to start with,” Young offers. “So instead of starting their morning off with a cinnamon roll, they’re getting some nutrients and water from the

celery juice. They feel good—maybe because they expect to—so they think it’s some kind of miracle.”

“But focusing on one vegetable in large doses is problematic because you can lose sight of the total diet,” she adds. “We need a variety of fruits and vegetables for good health.”

¹ *Nat. Med. J.* 2013. [www.naturalmedicinejournal.com](#).

² *Saudi Med. J.* 39: 154, 2018.

LIVER CLEANSE

“With exposure to environmental toxins, toxic body care products and processed foods, most people are in desperate need of a serious detox!” proclaims [draxe.com](#), the website of chiropractor Josh Axe. “A liver cleanse is a great way to do this.”

Axe is talking about coffee enemas, juice-only or other restrictive diets, and liver cleanse supplements with ingredients like milk thistle, turmeric, and dandelion root.

Do you need them?

“The liver is the metabolic powerhouse of the body,” says Monica Tincopa, director of the Michigan Medicine Non-Alcoholic Fatty Liver Disease Clinic. “It processes nutrients and metabolizes medications. It also plays a vital role in clearing toxins.”

“But unless you have severe liver disease or are exposed to a high dose of a toxic chemical, your body has a natural capacity to process whatever you ingest as well as the waste products your body makes.”

Tincopa’s bottom line: “There’s no evidence that these supplements help boost the liver’s ability to clear toxins.” And although most liver cleanse supplements appear to be safe, “a few cases of

liver damage have been linked to supplements like turmeric, so I emphasize to patients that there’s no benefit in trying them.”¹

What’s more, when researchers tested roughly 100 milk thistle supplements, 60 percent were contaminated with yeast or mold.²

And Axe’s enthusiasm notwithstanding, there are no grounds for thinking that coffee enemas do anything.

What’s the evidence that they have “a stimulating effect that increases bile flow, helping to jump-start both your gallbladder and your liver,” as Axe claims?

Zilch. And coffee enemas don’t end well for some people.

“In one case, a woman developed severe inflammation of the colon and rectum after a coffee enema,” notes Tincopa.³ “And

three deaths have been linked to coffee enemas, possibly due to a bacterial infection or electrolyte imbalances.”^{4,5}



Your liver doesn’t need supplements, juices, or coffee enemas to stay in shape.

¹ *Case Reports Hepatol.* 2019. doi:10.1155/2019/6741213.

² *Int. J. Food Microbiol.* 164: 87, 2013.

³ *Am. J. Gastroenterol.* 105: 229, 2010.

⁴ *West. J. Med.* 140: 460, 1984.

⁵ *JAMA* 244: 1608, 1980.

GLUTEN SENSITIVITY

“The science is in—why gluten sensitivity is probably fake,” ran the headline on [businessinsider.com](https://www.businessinsider.com) in 2017.

Gluten, a protein found in wheat, barley, and rye, can cause intestinal damage in people with celiac disease. (That’s why they need to avoid those grains.) Some people who don’t have celiac disease have been diagnosed with non-celiac gluten sensitivity because they report symptoms like nausea, vomiting, diarrhea, bloating, headache, fatigue, or joint pain when they eat gluten.

What exactly is gluten sensitivity?

“The honest answer, at this point, is that we don’t really know,” says Daniel Leffler, director of clinical research at the Celiac Center at Beth Israel Deaconess Medical Center in Boston.

There’s no lab test to diagnose gluten sensitivity. “But there is a group of patients who don’t have celiac, but have symptoms that are reproducibly improved when they avoid gluten and get worse when they’re exposed,” Leffler explains. “We just don’t know how large that group is.”

It may be small.

In half a dozen studies that fed either gluten or a placebo to people with suspected gluten sensitivity, only about 15 percent had symptoms after eating gluten but not after eating the placebo.¹⁻³

So why do so many people think they’re sensitive to gluten?

“More than likely, it’s not one population,” says Leffler. That is, what doctors currently call “gluten sensitivity” is probably a melting pot of many conditions, only one of which is a true sensitivity to gluten.

“Wheat is a complex food made of many different proteins and molecules,” Leffler explains. “Some people may be reacting to something in wheat other than gluten.”

For example, cutting back on FODMAPs (fermentable oligosaccharides, disaccharides, monosaccharides, and polyols) curbs digestive complaints in some people. FODMAPs are poorly absorbed carbohydrates that are in a long list of foods including dairy, beans, wheat, prunes, asparagus, onions, and cauliflower.

In the study that triggered the Business Insider headline, 59 Norwegian adults without celiac disease who were following a gluten-free diet ate a muesli bar made with either gluten or fructan (a FODMAP in wheat and other foods) or a placebo bar every day for one week each.³

Overall, the volunteers reported worse gut symptoms during the week their bars had fructan rather than gluten or the placebo.

That doesn’t mean that “gluten sensitivity is probably fake,” as Business Insider claimed. But it’s worth considering a low-FODMAP diet if you have digestive complaints (see *NAH*, May 2017, p. 9). “It can be a successful treatment for people with irritable bowel syndrome-like symptoms,” says Leffler.

“FODMAP sensitivity is probably more common than gluten sensitivity,” he adds. “I’ve had patients who respond better to a low-FODMAP diet and others who do better on a gluten-free diet. It just takes a bit of trial and error to figure out what works for each person.”

Some people might be what Leffler and others call “celiac lite.”

“They are clearly sensitive to gluten and have the genetic markers for celiac disease, but their blood tests don’t meet the criteria for celiac disease.”⁴

Another possibility: “For some, it could be an issue with the microbiome,” says Leffler. “Different types of bacteria may influence how the gut reacts to wheat, which could explain some symptoms.”⁵

If you think you’re sensitive to gluten, don’t change your diet until you get tested for celiac disease.

“That’s rule one, two, and three,” says Leffler.

Why? If you cut out gluten, a blood test might not pick up on the marker for celiac disease. If you’ve already stopped eating gluten, Leffler recommends talking to your doctor to create a plan to re-introduce it so that you can be tested.

“It’s important to get tested because unmanaged celiac is linked to other long-term health problems like osteoporosis and lymphoma,” he notes. “And celiac is hereditary, so getting tested can let family members know if they’re also at risk.”

Leffler’s bottom line: “In the future, it’s likely that we won’t talk about gluten sensitivity as one disorder, but as many disorders that result in sensitivity to gluten or other components of wheat.” 🍌



What is “gluten sensitivity”? Researchers aren’t sure.

¹ *Clin. Gastroenterol. Hepatol.* 15: 339, 2017.

² *Neurogastroenterol. Motil.* 2018. doi:10.1111/nmo.13332.

³ *Gastroenterology* 154: 529, 2018.

⁴ *Clin. Gastroenterol. Hepatol.* 2019. doi:10.1016/j.cgh.2019.04.009.

⁵ *Nutrients* 2017. doi:10.3390/nu9111203.

The Healthy Cook

Spilling the Beans



This cozy stew is chock full of good stuff. Make a batch now and freeze some for later. Look for French (small green) lentils. Most other types can get mushy. 🍴

French Lentil Stew

- ¼ cup extra-virgin olive oil
- 1 onion, diced
- 2 carrots, diced
- 2 stalks celery, diced
- 1 bulb fennel, diced
- ⅓ cup tomato paste
- 1 bay leaf
- 3 sprigs fresh thyme
- 1½ cups French lentils
- 1 tsp. kosher salt
- Freshly ground black pepper

1. In a large heavy pot, heat the oil over medium heat until shimmering. Sauté the onion, carrots, celery, and fennel until lightly browned, 7-10 minutes.
2. Stir in the tomato paste. Cook until it starts to brown, 2-3 minutes.
3. Add the bay leaf, thyme, and lentils. Stir in 6 cups of water and bring to a boil over high heat.
4. Reduce the heat to medium. Simmer until the lentils are al dente, 20-25 minutes.
5. Season with the salt and pepper. Remove and discard the bay leaf and thyme sprigs.

PER SERVING (1 cup): calories 290 | total fat 10 g | sat fat 1.5 g
carbs 40 g | fiber 8 g | total sugar 6 g | added sugar 0 g | protein 13 g
sodium 380 mg



MAKES 6 CUPS

Want more bean recipes?

Go to
nutritionaction.com/beandishes

for

Italian Bean & Kale Stew
Mexican Pink Bean Bowl
Mexican Pink Bean Tostadas

Need cooking advice? Write to Chef Kate at
healthycook@cspinet.org.

PLANTS IT'S WHAT'S FOR DINNER

Our guide to veggie meats



BY LINDSAY MOYER

"Beef. It's What's for Dinner," proclaims the ad campaign that began in 1992. These days, plants-only brands like Beyond Meat are surging, and Big Beef is worried. Ranchers want to ban the word "meat" from faux-meat labels. At the same time, meat processors are investing in their own plant-based brands. Here's what to look for.

Kaamilah Mitchell helped compile the information for this article.

1 Protect the planet. More plants, fewer animals. That's the gist of a flexitarian-style diet, which can help curb the greenhouse gas emissions that are fueling climate change. And it's not just about protecting our children's and grandchildren's future (see *NAH*, March 2019, p. 3). A plant-heavy diet that's light on meat—especially red and processed—is also healthy for eaters.

2 Mix it up. Some plant-based meats—like the Impossible Burger and the Beyond Burger—are not much healthier than beef, especially when restaurants gussy them up. But most veggie meats beat the real thing. Granted, you're better off with beans, nuts, tofu, and other largely unprocessed plant foods. (See The Healthy Cook's recipes on p. 11 and at nutritionaction.com/beansdishes.)

3 Get enough protein. If you're replacing meat, poultry, fish, or dairy, look for protein. Our Best Bites have at least 10 grams per serving (roughly 3 oz.). Don't need protein from your burger? Our Honorable Mentions have no minimum.

4 Watch the salt. Unfortunately, it's tricky to replicate the taste of meat without a decent dose of salt. We capped Best Bites and Honorable Mentions at 400 milligrams of sodium per serving. Tip: Serve your plant-based meat with

salad or stir-fried or roasted vegetables to bump up the potassium. Getting enough helps keep a lid on blood pressure.

5 Check the oil. Many veggie meats are made with liquid oils like sunflower, avocado, canola, or soybean. So they're not only lower in saturated fat than beef or pork, they're higher in



Brands like Beyond Meat are chasing beef's taste, texture, and color.

heart-healthy unsaturated fat. Win-win.

But brands like Beyond Meat and Field Roast also use solid (saturated) fats like coconut or palm oil. Our Best Bites and Honorable Mentions have no more than 2½ grams of sat fat.

6 Pick your protein. Soy, pea, wheat. Veggie meats may get their protein from one, two, or all three. Does it matter which? Only if you have allergies.

"Peas are legumes," says the small print on the Beyond Meat Beyond Burger label. "People with severe allergies to legumes like peanuts should be cautious

when introducing pea protein into their diet because of the possibility of a pea allergy." (The burgers have no peanuts.)

Need to avoid gluten? Field Roast ("grain meat" made from wheat gluten) and many other brands are off the table. But Beyond Meat—and a handful of products from Lightlife, Gardein, Amy's, and Dr. Praeger's—are gluten-free.

7 Look out for Quorn. In some people, Quorn's "mycoprotein" (processed mold) triggers reactions like vomiting, nausea, and diarrhea. Rarely, it causes hives or trouble breathing.

Thanks in part to a court filing by the Center for Science in the Public Interest, *Nutrition Action's* publisher, U.S. [Quorn labels](http://QuornLabels.com) now say "Mycoprotein is a mold (member of the fungi family). There have been rare cases of allergic reactions to products that contain Mycoprotein."

With so many other options, we didn't give any Best Bites or Honorable Mentions to Quorn.

8 Is it vegan? Veggie meats (or foods made with them) may contain egg whites, cheese, and other animal products. If you want "vegan," look for the word on the label.

9 Shop around. Beyond Meat and its ilk could show up in the meat case or near the tofu, dairy, or frozen foods. Since many brands can be refrigerated or frozen, don't forget to check the freezer case.

10 Follow your taste buds. Brands (and tastes) vary, so hang in there. Our favorites: Gardein, Beyond Meat, and MorningStar Farms.

Moo-less Goes Mainstream

At the Supermarket

“At Beyond Meat, we started with simple questions,” says the Beyond Burger package. “Why do you need an animal to create meat? Why can’t you build meat directly from plants? It turns out you can. So we did.”

One bite of a **Beyond Burger**—and one look at its red-beet-tinged raw “meat”—might fool some carnivores. Ditto for the **Impossible Burger**, which has been sold in select restaurants since 2016 and is now starting to hit supermarket shelves.

Both up-and-comers will help the planet more than your health, but that’s no small potatoes.



Beyond Burgers are sold in the meat case at many stores.

■ **Saturated fat.** Mimicking beef’s rich, fatty mouthfeel calls for a solid fat: coconut oil. But that adds saturated fat (6 grams to the Beyond Burger and 8 grams to the Impossible Burger), along with about 250 calories in a 4 oz. patty. Those numbers are very, um, beef-like. And Beyond

Meat’s **claims** (like “fueling athletes to perform better & recover faster”) are a stretch. But going beyond beef is a big win for the planet.

For meaty taste that comes close to Beyond but cuts the sat fat to 2½ grams, try **Lightlife’s** new **Plant-Based Burger**. It’s 270 calories of mostly pea protein and canola oil, though the sodium (540 milligrams) puts it outside Best Bite territory.

■ **Heme.** “Heme is what makes meat taste like meat,” says Impossible Foods, maker of the Impossible Burger. The company adds soy leghemoglobin, which Impossible makes from genetically engineered yeast, to replicate the heme in red meat. (Leghemoglobin is naturally found in soybean roots but not soybeans.)



Meaty taste with a fraction of beef’s saturated fat.

But red meat’s heme can help form N-nitroso compounds in your gut. And those compounds may help explain why a diet heavy in red meat is linked to a higher risk of colorectal cancer.

Does soy’s heme behave like beef’s? The Center for Science in the Public Interest has called on the company—and the Food and Drug Administration, which conducted only a brief review of the ingredient’s safety—to determine whether Impossible’s leghemoglobin could increase cancer risk like red meat’s heme does. Stay tuned.

On the Menu



With white-flour buns, cheese, mayo, and fries, restaurant plant burgers like TGI Fridays’ can top 1,000 calories.

Impossible Whoppers, Beyond Tacos. The new breed of beef-like veggie meats has hit restaurants big time. And—no surprise—corporate chefs have managed to make them as unhealthy as red meat. Below we compare veggie-meat menu items to the beef or pork versions (in purple).

Take TGI Fridays. Its Beyond Meat Cheeseburger is served on a white-flour bun with enough cheddar, “Fridays sauce,” and pickles to reach 890 calories plus over a day’s saturated fat (24 grams) and a 1½-day supply of sodium (3,350 milligrams).

Our advice: At Fridays, go “green-style”—swap the bun for lettuce to save 260 calories’ worth of white flour. Or ax the cheese.

	Calories	Sat Fat (g)	Sodium (mg)	Protein (g)
Burgers				
Burger King Impossible Whopper	630	11	1,080	25
Burger King Whopper	660	12	980	28
Cheeseburgers				
TGI Fridays The Beyond Meat Cheeseburger, green-style	630	18	2,940	38
TGI Fridays Cheeseburger	780	24	2,840	39
TGI Fridays The Beyond Meat Cheeseburger	890	24	3,350	45
TGI Fridays The Beyond Meat Cheeseburger with fries	1,210	27	4,160	50
The Cheesecake Factory Impossible Burger with fries	1,460	33	3,520	53
Breakfast Sandwiches				
Dunkin’ Beyond Sausage	470	8	910	24
Dunkin’ Sausage, Egg & Cheese	550	12	1,120	22
Tacos & Bowls				
Qdoba Impossible Taco	150	2.5	550	8
Del Taco Beyond Avocado Taco	260	6	390	12
Del Taco Beyond Taco	300	10	510	19
Del Taco crunchy beef taco	310	11	320	17
Qdoba Impossible Bowl	910	12	1,840	47

Source: company information.



Good Ground



Thanks to neutral spices, it's versatile.

If you'd rather start from scratch, crumble a block of tempeh, sauté in oil, and add your own seasonings.

Want to just toss some crumbles or meatballs into the skillet? Goodbye, ground beef:

Gardein The Ultimate Beefless Ground and **Boca Original Veggie Crumbles** are right at home in your plant-based Bolognese. Ditto for **Gardein Classic Meatless Meatballs** in marinara.

Taco night? Try **MorningStar Farms Chipotle Black Bean Crumbles**, which just missed a Best Bite.

Beans Over Beef

A Beyond Burger tastes beefy enough to make a stalwart vegetarian shudder.

But if you couldn't care less about matching red meat, plenty of brands sell patties crammed with whole grains (bulgur, quinoa, brown rice), legumes (black beans, lentils, garbanzos), and vegetables (mushrooms, carrots, greens). The downside: Protein can be hard to find.

Solution: Look for our Best Bites. **Hodo Tofu Veggie Burgers** and **MorningStar Farms Garden Veggie, Mediterranean Chickpea, and Tomato & Basil Pizza Burgers** have enough tofu or soy flour to hit 11 grams of protein (MorningStar) or 19 grams (Hodo).

Tip: Most patties have a good dose of (healthy) carbs from whole grains and beans. Why not lose the bun and wrap them in a lettuce leaf instead?



Chickpeas plus soy boosts the protein.

Betterwurst

Processed meats like sausage, hot dogs, and bacon are linked to a higher risk of colorectal cancer. So why not replace them with veggie versions? Taste.

A few exceptions:

■ **Dinner sausage.** **Beyond Meat Beyond Sausage** promises "the missing link that serves up the sizzle and juicy satisfaction of pork sausage."

Indeed. Beyond is a dead ringer for pork sausage. And **Trader Joe's Italian Sausage-**

less Sausage and **Lightlife Italian Smart Sausages** come awfully close to the taste of chicken sausage.

Both Trader's and Lightlife have just a fraction of the saturated fat (1 gram) of Beyond Sausage (5 grams) because they contain soy, not coconut, oil. All are too salty for a Best Bite... but, then again, so are most chicken or pork sausages.

■ **Hot dogs.** Our tasters' favorite: **Worthington Deli Dogs**, which missed an Honorable Mention by 70 milligrams of sodium.

■ **Breakfast sausage.** Breakfast sausages and bacon are smaller (about 1 to 1½ oz.) than other meats, so our Best Bites are more modest: 250 mg of sodium or less and at least 5 grams of protein per serving (1 patty or 2 links or strips). Two to try: **MorningStar Farms** and **Trader Joe's** meatless breakfast patties.

■ **Bacon.** Despite clever names ("benevolent bacon," anyone?), we didn't find any plant-based bacons that came close to the real thing. (Maybe Beyond Meat can take a crack at it.)

But for a pleasant chew and smoky flavor, toss a strip of tempeh (fermented soy) "bacon" like **Tofurky Smoky Maple Bacon Treehouse Tempeh** on your breakfast sammie.



Bacon? Hardly. Smoky and savory? Yes.

Chick'n or Fishless?

Want "chick'n" that tastes like...chicken? Breaded lookalikes are easier to come by than unbreaded.

■ **Breaded patties.** Your taste buds may never know that **Whole Foods 365 Chickenless Patties** are chicken-free. With 410 milligrams of sodium per patty, they just missed a Best Bite.

Tastewise, fellow Honorable Mention **MorningStar Farms Original Chick Patties** also came close.

■ **Breaded tenders.** It's hard to beat **Gardein Seven Grain Crispy Tenders**. (Ignore the "breaded with wholesome grains including oats, quinoa, and millet" claim. Its top grain is white flour.)

Since most breaded "chick'n" is coated in white flour, add a salad or veggie side instead of more grains.

■ **Unbreaded.** **Gardein Chick'n Scallopini** is a (gluten-free) find for fast dinners. Try a sliced sautéed patty in tacos or a stir-fry. Or use **Gardein Chick'n Strips**.

■ **Breaded seafood.** Sidestepping seafood? **Gardein Fishless Filets** and **Crabless Cakes** make convincing fried fish and shellfish stand-ins. 🍷



Mmm. A real chicken-less crowd pleaser.

The Meatless Market

Best Bites (✓✓) have at least 10 grams of protein. **Honorable Mentions** (✓) have no protein minimum. Both have no more than 400 milligrams of sodium and 2.5 grams of saturated fat, and are free of food dyes. Best Bites for breakfast meats (which are smaller) have at least 5 grams of protein and no more than 250 mg of sodium. Within each category, products are ranked from least to most saturated fat, then sodium, then most to least protein, then least to most calories. We adjusted some serving sizes for consistency, so numbers may not match what's on packages.

	Calories	Sat Fat (g)	Sodium (mg)	Protein (g)
Burgers (1 patty—about 2.5 oz., unless noted)				
✓ Trader Joe's Thai Sweet Chili	150	0	270	8
✓✓ Gardein The Ultimate Beefless (3 oz.)	130	0	320	14
✓ Gardein Garden Veggie (3 oz.)	130	0	330	4
✓ Gardenburger Black Bean Chipotle	90	0	390	5
✓ Dr. Praeger's ¹	120	0.5	240	4
✓ Amy's Organic California Light in Sodium	150	0.5	270	6
✓ Amy's Organic Black Bean	130	0.5	300	6
✓✓ 365 (Whole Foods) Plant-Based ¹	150	0.5	360	13
✓✓ Hodo Tofu Veggie (4 oz.)	190	0.5	390	19
✓✓ MorningStar Farms Grillers Original	130	0.5	390	16
✓ Trader Joe's Vegetable Masala	140	0.5	390	2
✓ Trader Joe's Quinoa Cowboy (3.2 oz.)	180	1	280	5
✓✓ MorningStar Farms—Garden Veggie, Mediterranean Chickpea, or Tomato & Basil Pizza Burger ¹	120	1	330	11
✓✓ Boca All American	100	1	350	13
✓ MorningStar Farms—Roasted Garlic & Quinoa, Spicy Black Bean, Spicy Indian Veggie, or White Bean Chili ¹	130	1	360	8
✓✓ MorningStar Farms Grillers Prime	150	1	400	16
MorningStar Farms Veggie Lovers (4 oz.)	160	1	440	9
Dr. Praeger's Pure Plant Protein (4 oz.) ¹	260	2	490	24
Lightlife Plant-Based (4 oz.)	270	2.5	540	20
MorningStar Farms Meat Lovers (4 oz.)	280	2.5	580	27
Field Roast FieldBurger (3.2 oz.)	290	5	440	25
Beyond Meat Beyond Burger (4 oz.)	250	6	390	20
Impossible Burger (4 oz.)	240	8	370	19
"Chick'n" Patties (1 patty—about 2.5 oz., unless noted)				
Quorn Meatless	130	0	290	8
✓✓ Gardein Chick'n Scallopini	110	0	350	11
✓✓ Gardein Chick'n (3.1 oz.)	170	0.5	310	13
365 (Whole Foods) Chickenless	150	0.5	410	11
Boca Original Chick'n	130	0.5	640	11
✓ MorningStar Farms Buffalo Chik	160	1	320	9
✓ MorningStar Farms Original Chik	170	1	320	9
Strips, Tenders, etc. (No. closest to 3 oz., unless noted)				
✓✓ Gardein Seven Grain Crispy Tenders (3)	140	0	350	11
✓✓ MorningStar Farms Pulled Pork (1 cup)	130	0	390	23
MorningStar Farms Chick'n Strips (12)	140	0	410	23
Gardein Teriyaki Chick'n Strips (3.5 oz. with sauce)	160	0	520	13
✓✓ Gardein Chick'n Strips (NA)	120	0.5	280	13
✓ Gardein Crabless Cakes (3)	140	0.5	330	9

	Calories	Sat Fat (g)	Sodium (mg)	Protein (g)
✓✓ Gardein Chick'n Nuggets (5)	190	0.5	340	14
✓✓ Gardein Beefless Tips (2/3 cup)	140	0.5	350	14
Quorn Meatless Nuggets (4)	190	0.5	420	10
✓ Gardein Fishless Filets (2)	180	1	350	9
✓✓ MorningStar Farms Chik'n Nuggets (4)	200	1.5	370	12
Meatballs (No. closest to 3 oz.)				
365 (Whole Foods) (6)	170	0	560	18
Lightlife Smart Menu (3)	100	0	600	13
✓✓ Gardein Classic (3)	150	0.5	380	14
Amy's Veggie (8)	200	0.5	550	14
Crumbles (3 oz.)				
✓✓ Boca Original Veggie	90	0	310	16
✓✓ Gardein The Ultimate Beefless Ground	110	0	340	18
✓✓ Beyond Meat Beyond Beef Beefy	140	0	370	19
✓✓ Beyond Meat Beyond Beef Feisty	140	0	390	20
MorningStar Farms Chipotle Black Bean	110	0	430	12
Lightlife Smart Ground Original	120	0	530	17
MorningStar Farms Chorizo	160	1.5	610	13
✓✓ Lightlife Plant-Based Ground	200	2	400	15
Trader Joe's Soy Chorizo	190	2.5	870	13
Beyond Meat Beyond Beef Plant-Based Ground	190	4.5	290	15
Dinner Sausage (1 link—about 3 oz., unless noted)				
Tofurky (3.5 oz.) ¹	260	1	520	23
Trader Joe's Italian Sausage-less	140	1	560	13
Lightlife Smart Sausages ¹	150	1.5	530	14
Field Roast (3.2 oz.) ¹	230	1.5	590	25
Beyond Meat Beyond Sausage (2.7 oz.) ¹	190	5	500	16
Lightlife Plant-Based Sausage ¹	220	6	520	17
Hot Dogs (weight of 1 link)				
✓ Lightlife Smart Dogs (1.5 oz.)	50	0	330	7
Worthington Deli Dog (1.4 oz.)	90	1	470	6
Field Roast Frankfurters (2.7 oz.)	200	2.5	710	21
Breakfast Sausage (weight of 1 patty or 2 links)				
✓✓ 365 (Whole Foods) patties (1.3 oz.)	70	0	160	7
✓ Amy's links (1 oz.)	70	0	160	4
✓✓ MorningStar Farms Hot & Spicy patties (1.3 oz.)	70	0	230	9
✓✓ Trader Joe's patties (1.2 oz.)	80	0	230	7
✓✓ MorningStar Farms Maple patties (1.3 oz.)	80	0	250	8
MorningStar Farms Original patties (1.3 oz.)	70	0	260	9
Field Roast Apple Maple links (1.6 oz.)	100	0	320	10
Bacon Strips (weight of 2 strips)				
Lightlife Smart Bacon (0.7 oz.)	40	0	300	4
✓ Tofurky Smoky Maple Bacon Treehouse Tempeh (1 oz.)	50	0.5	120	4
MorningStar Farms (0.6 oz.) ^D	60	0.5	230	2
Lightlife Organic Smoky Tempeh (1.3 oz.)	70	0.5	330	6

✓✓ Best Bite. ✓ Honorable Mention. ¹ Average of the entire line or the varieties listed. NA Number not available. ^D Contains food dyes.

Daily Values (DVs): Saturated Fat: 20 grams. **Sodium:** 2,300 milligrams. **Daily Protein Target:** 85 grams.

Source: company information. The use of information from this article for commercial purposes is strictly prohibited without written permission from CSPI.



RIGHT STUFF

Fruit Yogurt 2.0

"We've taken real fruits like **Strawberry**, **Peach**, and **Blueberry**, and blended them with our low-fat Greek yogurt to create a perfectly balanced sweet taste without the added sugar or sweeteners," says **Fage** about its new **TruBlend Greek Yogurt**.

Finally. A fruit yogurt without added sweeteners. That means added sugar, stevia, sucralose, acesulfame potassium, etc., are out.

And real fruit (or **coconut** or **vanilla**) is in.

No added sugar also means that each 5.3 oz. container has just 110 to 120 calories, along with the dose of protein (13 grams) and calcium (around 10 percent of the Daily Value) that you'd expect from most greks.

One downside: TruBlends have chicory root (aka inulin), a processed fiber that also shows up in stevia-sweetened yogurts like **Dannon Oikos Triple Zero**. In many studies, inulin gives some people, um, gas. (It's a FODMAP—see p. 10.)

If chicory gives you trouble, try **Chobani Less Sugar Greek Yogurt**. It has only about a teaspoon of added sugar, we estimate, in each 5.3 oz. 120-calorie serving of flavors like **Alphonso Mango**, **Monterey Strawberry**, **Wild Blueberry**, and **Willamette Raspberry**. (The same size tub of regular fruit-flavored **Chobani Greek Yogurt** has an estimated 2 or 2½ teaspoons of added sugar.)

In Greek, Fage means "to eat." What are you waiting for?

usa.fage—(866) 962-5912



Photos: Kaamilah Mitchell/CSPI (top left), Betty Crocker (top right), Kate Sherwood/CSPI (middle).

FOOD PORN



Cup O' Cake

"For the person who really wants a tasty treat at the end of the day but doesn't want to make an entire 9-by-13-inch cake, we've got **Betty Crocker Mug Treats**," says the General Mills [blog](#) post. Talk about innovation!

"The single-serving Betty Crocker Mug Treats are made fresh in the microwave with a special ooey-gooey topping for each one," adds the blog. "Perfect for an after-school moment or a 'me moment' at the end of the day."

Ooh...can't wait! What better way to spend a "me moment" than to microwave, say, a 400-calorie **Soft-Baked Chocolate Chip Cookie Mix with Fudge**

Topping that supplies about 12 teaspoons of added sugar plus a third of a day's saturated fat.

Who can resist a fresh mug of ingredients like bleached enriched (aka white) flour, high fructose corn syrup, hydrogenated palm kernel oil, corn starch, sodium alginate, potassium sorbate, artificial flavor, and more?

It's like eating three Twinkies per "me moment." And all eight Mug Treats come with "Betty's Tips" like "Serve topped with whipped cream or ice cream" or "Serve topped with your favorite candy bar, cut into small pieces."

Why stop with cake, when Big Food has more junk to sell?

bettycrocker.com—(800) 446-1898



DISH of the month

Roasted Pepper Topping

Dice 2 roasted bell peppers. Toss with 2 Tbs. extra-virgin olive oil, 1½ Tbs. red wine vinegar, 1 Tbs. minced shallot, and ½ tsp. kosher salt. Spoon over 1 lb. cooked fish or chicken. Serves 4.

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