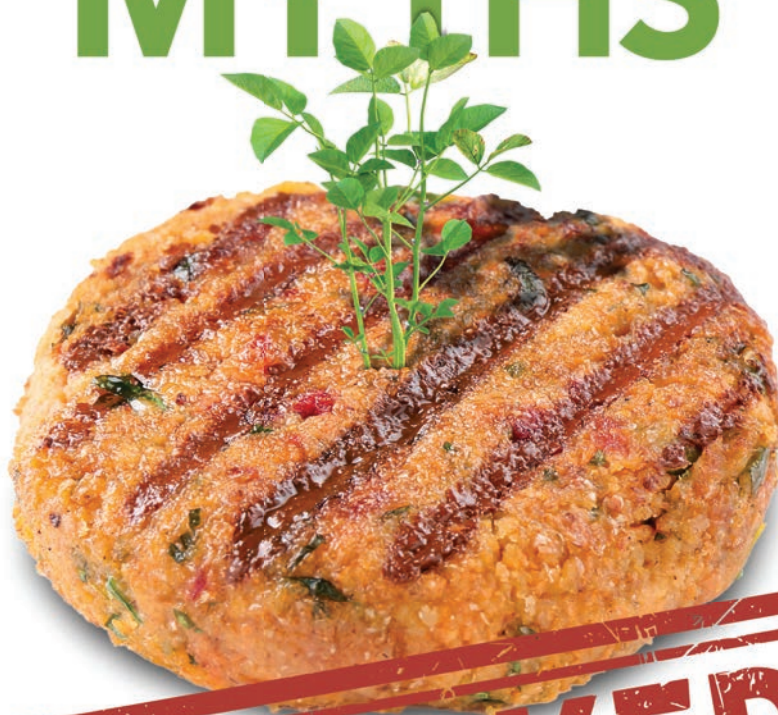




PLANT-BASED MYTHS



DEBUNKED

PEPTIDES
What to know

A mushroom
for that?

FOOD SAFETY
TIPS FOR SUMMER

Prison food and public harm



**PETER G. LURIE
MD, MPH**

President, Center
for Science in the
Public Interest

Nearly two million people are behind bars in the United States. Do they deserve nutritionally inferior food? Do they deserve inadequate portions of unpalatable, over- or undercooked meals? Do they deserve food that

is spoiled, rotten, or contaminated?

Well, that's exactly what many

of them are being served, particularly in prisons and jails that have outsourced their food service operations, according to a new report from the Center for Science in the Public Interest (*Nutrition Action's* publisher) and the Carceral Nutrition Project.

Private Food, Public Harm: Privatized Food Service in Prisons and Jails details how the health and well-being of hundreds of thousands of people in prisons and jails are being compromised by companies' push to generate profits.

A major offender: Aramark, a multinational corporation that now holds roughly 35 percent of the US correctional food service market.

It would be surprising if *any* American carceral facilities were truly feeding people well. But privatizing operations—a decision typically justified as a way

to cut costs—has made a bad public health disparity even worse.

While it's not even clear that moving from in-house food service to companies like Aramark saves money, what *is* clear is that the shift often compromises the quantity, quality, and safety of the food incarcerated people are served.

And that can put them at increased risk not just of food poisoning but, eventually, of chronic conditions like heart disease and type 2 diabetes.

Not surprisingly, it comes down to money...with the lowest bidder—often Aramark—prevailing.

Clearly, we have a failure in public health practice.

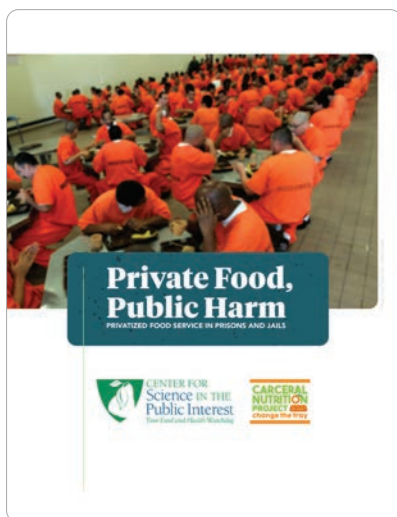
How to correct it? With greater transparency, stronger public oversight, and approaches to food service that prioritize the health and nutrition of incarcerated people over contractors' bottom lines.

Specifically, we need independent monitoring, standardized nutrition guidelines, and greater accountability for private contractors who operate correc-

tional dining facilities.

Incarcerated people may be locked up, but they don't deserve to have their basic human dignity violated when they pick up their forks.

Peter



To learn more about carceral nutrition services, visit cspi.org/PrivateFoodPublicHarm.

Photos: Jennifer Urban - CSPI (top); Kaleb Lovell - unsplash.com (bottom).

For more *Nutrition Action* articles, recipes, and advocacy opportunities, visit CSPI.ORG



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PLANT-BASED MYTHS

DEBUNKED

BY MADDY BENNETT

Are plants toxic...or should we be eating them exclusively? As the hardcore carnivores and herbivores duke it out, the rest of us are caught in the confusing crossfire. Can you tell plant-based fact from fiction? Here's the science on soy, plant protein, antinutrients, and vegan diets.

MYTH

SOY DISRUPTS HORMONES IN WOMEN

"Phytoestrogens" are compounds in plants that resemble the estrogen in our bodies (though they're not actually a type of estrogen). And soybeans contain a group of these hormone lookalikes called isoflavones.

"Isoflavones are structured very much like the estrogens humans produce," says Xiao-Ou Shu, a professor of cancer research and epidemiology at Vanderbilt University School of Medicine.

"To some extent, they can bind to our estrogen receptors. Sometimes people hear this and worry that these compounds might disturb our bodies' hormone levels."

But the research on soy isoflavones is reassuring.

For example, a review of 40 randomized trials on more than 3,000 postmenopausal women found no signs that soy isoflavones from foods or supplements had estrogen-like effects.¹

The researchers looked for changes like a thickening of the uterine lining (which happens in response to excess estrogen) or a bump in blood levels of estrogen. (The soy industry partly funded the review.)

And an analysis (also partly funded by the soy industry) of 11 trials found

that soy isoflavones from foods or supplements had no impact on estrogen levels in 579 premenopausal women.²

(Two hormones that help regulate the menstrual cycle were a bit lower in those ingesting soy, but it's too soon to say whether soy isoflavones were the cause...or whether the dip even matters.)



The Healthy Cook's Tofu Poke Bowl features a double dose of soy: tofu and edamame. Search for the recipe and dozens more plant-rich dishes at cspi.org/recipes.

So do soy isoflavones have any impact on women's health? It may depend on their age:

Before menopause. At a time when a woman's estrogen levels are relatively high, "isoflavones compete with your natural hormones for access to estrogen receptors and may have an anti-estrogenic effect in certain tissues," says Shu.

When it comes to breast cancer risk, that's a good thing.

For example, in one randomized trial of 194 premenopausal women, those who took an isoflavone supplement for two years saw a decrease in breast tissue density, while breast density increased in those who took a placebo.³ (Greater density is linked to higher cancer risk.)

After menopause. At a time when a woman's estrogen levels are relatively low, isoflavones may act as a weak estrogen replacement in some tissues, which could help ease hot flashes or curb the bone loss that can come with menopause (though that's still up for debate).⁴

The bottom line: Whether you're pre- or postmenopausal, soy may have upsides. And there's little cause for concern that it will have a negative impact on your hormone levels.

MYTH

SOY CAUSES BREAST CANCER

It's easy to see how the isoflavones-and-hormones myth snowballs into concerns about cancer.

But "over the years, people have studied the health effects of soy foods,

and most studies have found that a moderate intake is actually beneficial to human health, particularly women's health," says Shu.

In fact, eating soy foods may lower the risk of some cancers—especially breast cancer.

An analysis of six studies that followed roughly 200,000 pre- and

postmenopausal women for an average of nine years found that those who ate the most soy had a 13 percent lower risk of developing breast cancer than those who ate the least.⁵

“We think that’s because soy isoflavones have a much weaker estrogenic effect than our own estrogen,” says Shu. (Breast cancer is partly driven by too much estrogen.)

And when isoflavones bind to an estrogen receptor, they block estrogen from binding to it. Shu says this could be the main reason why soy is linked to a lower—not higher—breast cancer risk.

But not all studies find a link between soy and a lower risk of breast cancer. That may be because the women didn’t eat enough soy to matter or they hadn’t been eating soy from a young age.

“Some research shows that eating soy foods during adolescence, when breasts are still under development, is more beneficial than starting to eat soy later in life,” says Shu.

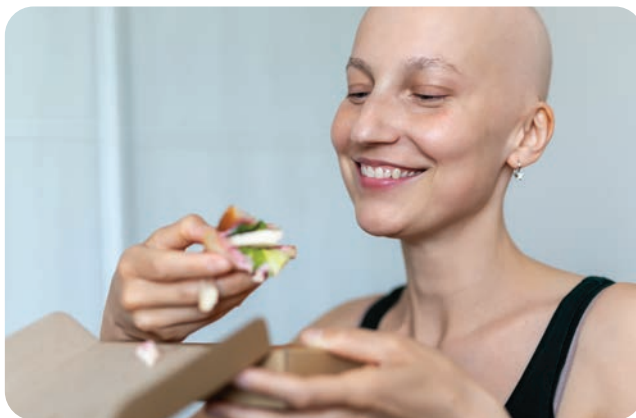
Though isoflavones play a role in soy’s potential anti-cancer effects, Shu doesn’t think they deserve all the credit.

“Soy foods, as whole foods, contain not just isoflavones but also lots of other nutrients: protein, calcium, healthy fats, and many other things,” she says. “It could be that the benefit of soy food intake is due to this combination.”

What about soy foods and women who have, or have had, breast cancer?

If you’re undergoing treatment for breast cancer, no evidence suggests that eating soy foods is a bad idea. (Note: It never hurts to check with your healthcare team.)

As for survivors, “it’s safe to eat soy foods after you’ve overcome breast cancer,” says Shu. “We’ve even found that a moderate intake of soy foods is linked to a lower risk of breast cancer recurrence.”



Eating soy foods is safe for breast cancer survivors and may even lower odds of cancer recurrence.

In that study, Shu’s team followed 5,033 breast cancer survivors for roughly four years.⁶ Those who consumed the most soy were about 33 percent less likely to have a recurrence or to die from their cancer than those who ate the least soy.

A word of caution: We don’t yet know whether isoflavone *supplements* are safe for breast cancer patients or survivors. Shu doesn’t recommend that women add them to their supplement regimen (whether they’ve had breast cancer or not).

“The amount of isoflavones in supplements is much higher than what you typically get from dietary sources,” she says. It’s best to stick to soy foods like tofu, tempeh, edamame, and soy milk.

MYTH

SOY FEMINIZES MEN AND LOWERS THEIR TESTOSTERONE

It’s a decades-old myth that just won’t quit, even though no good evidence shows that soy lowers testosterone, harms fertility, causes erectile dysfunction, or fuels breast growth in men.

How do we know?

For starters, “there’s research that compares soy to whey protein on testosterone levels,” said Alan Flanagan, a nutrition scientist and researcher at the University of Surrey in England, on a 2022 episode of the *Sigma Nutrition Radio* podcast. And

meta-analyses of those studies “don’t show that soy protein alters testosterone levels.”

For example, an analysis of 38 clinical trials that looked at men’s isoflavone intake from soy foods and supplements found no impact on levels of testosterone or estrogen in their blood.⁷

The levels of both hormones didn’t even budge in men who consumed an amount of isoflavones

roughly equal to what they’d get from more than three servings of soy foods a day. (Note: Two of the researchers who conducted the analysis disclosed ties to the soy industry.)

What about male fertility? Only a few studies have tested soy’s impact, but their findings don’t raise any alarms.

In one, 32 young men took a milk protein supplement, a soy protein supplement high in isoflavones, and a soy protein supplement with almost no isoflavones—each for two months at a time.⁸ None of the supplements affected the men’s sperm concentration, count, activity, or structure, though the authors acknowledge that longer studies are warranted.

But even if soy doesn’t alter men’s hormones or fertility, could isoflavones still “feminize” them by binding to their estrogen receptors?

It’s unlikely. The best evidence doesn’t show a link between soy intake—even at several servings a day—and erectile dysfunction or breast tissue growth.

MYTH

PLANT-BASED PROTEINS ARE LOW QUALITY AND DON’T BUILD MUSCLE

Judging by the protein-pumped bars, pastries, drinks, pretzels, chips, and other foods lining supermarket shelves, we’re in an era of protein

obsession. Cue the “protein quality” worries.

But what is protein quality? Put simply, it’s how easily and efficiently our bodies can use the protein in the foods we eat by breaking it down into its components—a.k.a. amino acids—and repurposing those amino acids to build our own muscle proteins.

“Protein quality is based on two factors: digestibility and amino acid content,” says Reed Mangels, a registered dietitian specializing in plant-based nutrition and a nutrition advisor with the Vegetarian Resource Group.

Digestibility. How much of a given protein can your body absorb? Multiple factors can reduce or boost absorption.

“The protein you eat from whole foods comes packaged with all sorts of things,” Mangels explains. She’s talking about the “food matrix”—the way nutrients, fiber, and other compounds are bound together in a food.

“That complexity, plus the effect of cooking, affects how efficient your body is at digesting protein,” says Mangels.

Amino acid content. Amino acids are the links that are strung together to form the chain that makes up a protein (in food and in our bodies).

Nine amino acids are considered “essential” for humans. That means we can’t make them ourselves and have to get them from our food.

The closer a protein’s amino-acid makeup is to the proportions of all nine essential amino acids we need, the higher its quality.

Animal-based foods—like meat, dairy, and eggs—are typically the highest-quality proteins. Plants tend to be low in one or more essential amino acids. Vegetarian diets that are very limited—they include, say, mostly beans

and no grains or mostly grains and no beans—may not provide all the essential amino acids.

But because we typically eat a combination of foods, plant-based diets are unlikely to fall short in any of the essential amino acids over the course of the day. And that’s what matters.

One downside: “Plant proteins are somewhat less digestible because of their fiber, which animal foods lack,” Mangels notes

Does that mean animal proteins are better for building muscle and getting stronger? Not quite. High-quality plant protein seems to boost muscle strength just as much as animal protein.

That was the bottom line of an analysis of 32 randomized trials that pitted plant sources of protein—in powders, meal substitutes, and plant-based diets—against animal protein.⁹

About half of the trials included an exercise component (like strength training or walking). Regardless of whether participants were eating plant or animal protein, they made similar strength gains (on exercises like squats, leg extensions, and bench presses or on hand-grip strength tests).

One caveat: The plant protein of choice in most of the studies was soy. That matters because soy is among the

highest-quality plant proteins, on par with whey (one of the proteins in milk).

What about other sources of plant protein? They may be slightly less effective for gaining strength, though so far, few trials have looked.

But if your goal is just to get enough protein, plant-based diets are more than adequate, says Mangels.

“They have many sources of protein and don’t contain just beans or just grains.” In other words, a varied diet will cover all your bases (or rather, all your amino acids).

The bottom line: A varied plant-based diet containing high-quality proteins (like soy) can help you build muscle mass and strength as well as an omnivorous diet can.

MYTH

ANTINUTRIENTS IN PLANT-BASED FOODS ARE DANGEROUS

There’s a kernel of truth here: Compounds in plants known as “antinutrients” can interfere with your body’s ability to absorb some nutrients.

“Many antinutrients bind certain minerals and prevent your body from absorbing or using them,” says Mangels. And that could pose a problem for vegans, vegetarians, and people whose diets are already low in those nutrients.

But that’s no reason to shun plants.

Consider the evidence for four common antinutrients:

Phytate

Phytate is found in foods like whole grains, beans, and nuts.

Although it can hinder your body’s uptake of calcium, getting more phytate is linked to *greater* bone density in postmenopausal women.

Why? Phytate may work at the cellular level to prevent the breakdown of bone tissue



Soy protein is high quality and can build strength as well as animal protein can.

that comes with aging.

(More studies are needed to understand the impact of phytate, especially in people other than postmenopausal women.)

Oxalate

Oxalate gets a bad rap for binding calcium and iron, which could mean you'll absorb less of them, especially from foods like spinach that contain much more oxalate than calcium and iron.

But the bigger concern about oxalate is kidney stones. Oxalate and calcium combine in the urine to form crystals that build up in the kidneys.

Don't blame it all on the oxalate, though.

Often, the problem is drinking too little fluid, which causes urine to become more concentrated with oxalate and calcium. Eating too much salt is also a culprit because it leads to more calcium in the urine.

In some cases, people develop kidney stones from overeating oxalate-rich foods—like uncooked spinach and chard (cooking reduces oxalate levels), tea, rhubarb, and some nuts and seeds—but that happens over a matter of months or years.

An occasional oxalate-rich meal is unlikely to push you into kidney-stone territory.

(Note: If your healthcare provider tells you to limit oxalate or make other diet changes because you've had stones, be sure to follow their advice.)

Goitrogens

Goitrogens are compounds that can interfere with how your body makes thyroid hormones.

Soy isoflavones happen to be goitrogens. You'll also find them in cruciferous vegetables and a handful of other foods.

Some goitrogens can impair en-

zymes that your body needs to make thyroid hormones. Others can disrupt thyroid hormone levels by blocking the thyroid's access to iodine, a key component of the hormones.

And iodine is often low in strict plant-based diets. (Dairy and seafood are top food sources, though vegans can get iodine from iodized salt and multivitamin-and-mineral supplements.)

How much does that thyroid disruption matter?

If you're consistently not getting enough iodine, then it might be worth looking at how much goitrogen-rich food—especially uncooked—you eat. (Cooking reduces some goitrogens, like those in cruciferous vegetables.)

But as long as you're getting the recommended intake of iodine, you

reduce protein absorption to some extent (by how much is still unclear).

Don't let that stop you from eating healthy foods, though.

"If you cook your grains and beans, it largely inactivates their protease inhibitors," says Mangels. (Cooking also somewhat lessens the activity of phytates, oxalates, and goitrogens, she adds.)

Mangels's bottom line: "It's simply a myth that anti-nutrients make plant-based foods inferior to animal-based foods."

MYTH

A 100% PLANT-BASED DIET IS THE HEALTHIEST DIET

If you're a *Nutrition Action* junkie, you know that a largely plant-based diet is healthy for people (and the planet).

But does the evidence show that you need to go *fully* plant-based for your health's sake?

"We can't say whether a very low intake of animal foods is better or worse than no animal foods at all," says Walter Willett, a professor of epidemiology and nutrition at the Harvard T.H. Chan School of Public Health.

That's because the data is limited: Few people are raised on a truly animal-free diet from childhood. And among those who adopt

vegan diets later in life, many go back to eating animal products regularly or occasionally.

Moving closer to a plant-based diet lowers your risk for chronic diseases like heart disease and type 2 diabetes, Willett notes, but he adds that "having a little fish, poultry, or dairy may be a safety net to provide certain nutrients."

And if you've ever heard the term "junk-food vegan," you already know that not all strictly plant-based diets are healthy.



Too much oxalate can lead to kidney stones. More often, they're due to dehydration and high-salt diets.

have little cause for concern.

(The Recommended Dietary Allowance for iodine is 150 micrograms a day for adults. That jumps to 220 mcg if you're pregnant and 290 mcg if you're breastfeeding.)

Protease inhibitors

Protease inhibitors—antinutrients feared by the protein-maxxing crowd—are found in beans and grains. Because protease inhibitors block the enzymes that our bodies use to break down proteins in food, they may

One study found that people who reported eating the least-healthy plant-based diets (more sugar and refined grains and less produce) had higher odds of digestive cancers, especially colorectal cancer, than those on the healthiest plant-based diets.¹⁰

Other studies suggest that unhealthy plant-based diets may raise cardiovascular disease risk. Those lower-quality diets tend to lack key nutrients like iron, zinc, calcium, iodine, and vitamin B-12.

And while vegans and vegetarians benefit from lower rates of heart disease, type 2 diabetes, and some

cancers overall, they might be more prone to a certain kind of stroke (it's not clear why) and bone fractures.

According to a study that tracked 65,000 UK adults (4 percent of whom ate no animal products) for 18 years, the vegan participants had more than double the risk for hip fractures than the meat eaters.¹¹

And that was after the researchers accounted for the vegans' lower average body weights. (Higher body weights tend to protect against fractures.)

That said, deficiencies aren't a given for vegans. If you prefer a fully plant-

based diet, a multivitamin-and-mineral supplement can offer a decent dose of vitamins B-12 and D, zinc, iodine, iron (if you need it), and other nutrients, while a calcium supplement can fill the gap if you don't get enough from fortified foods. 🚫

¹ Adv. Nutr. 16: 1, 2025.

² Hum. Reprod. Update 15: 423, 2009.

³ Clin. Nutr. ESPEN 52: 158, 2022.

⁴ Nutrients 11: 1660, 2019.

⁵ Clin. Nutr. 38: 136, 2019.

⁶ JAMA 302: 2437, 2009.

⁷ Reprod. Toxicol. 100: 60, 2021.

⁸ Fertil. Steril. 94: 1717, 2010.

⁹ Nutr. Rev. 83: e1581, 2025.

¹⁰ Clin. Nutr. 44: 76, 2025.

¹¹ Proc. Nutr. Soc. 81: 190, 2021.

Soy surprises

Soy foods won't hurt (and might help) your hormones, cancer risk, and muscles. So bring on the tofu, edamame, soy milk, etc. And don't overlook these four soy surprises. They can pump up the protein and fiber (soy curls, tempeh, TVP) or boost the flavor (miso).

TEMPEH



Tempeh is a dense cake of fermented soybeans, so, unlike tofu, it brings a pleasantly toothsome texture to the table.

Both tempeh and tofu offer roughly the same protein for their calories, but tempeh has more fiber because it's made from whole soybeans. (Tofu is made from soymilk.) In fact, 3 oz. of tempeh will give you roughly 6 grams of fiber along with its 18 grams of protein.

What to do with tempeh: Slice it into triangles or strips, add oil and seasonings, then bake or sauté. Or crumble some into pieces and brown them in a hot pan. Crispy tempeh crumbles can even stand in for croutons on a salad.

MISO



This staple of Japanese cuisine is made by fermenting soy into a savory paste. It typically comes in three varieties: white, yellow, or red.

Which to choose? It depends on the dish. Versatile white miso tends to have a milder flavor and is less salty than darker varieties. (A teaspoon of Whole Foods 365 Organic White Miso has 340 milligrams of sodium.)

What to do with miso: Miso is far more than just the main ingredient in the miso soup you order before sushi. If you haven't tried a salad with homemade miso-ginger dressing or a piece of broiled fish or tofu with a miso glaze, you're in for a real treat. Mmm.

SOY CURLS



Butler Soy Curls have one ingredient: soybeans. That explains the 6 grams of fiber and 11 grams of protein in every ounce.

The company soaks, cooks, then dries the beans to produce the shelf-stable dehydrated "curls." Your job: Rehydrate them by soaking in water or broth for 10 minutes, draining well, and squeezing dry. If soy curls are hard to come by where you shop, head to butlerfoods.com.

What to do with soy curls: Combine rehydrated curls with oil and seasoning, then sauté, air-fry, etc. Where to start? For inspiration, check out the community of enthusiasts at reddit.com/r/SoyCurlsGoneWild.

TEXTURED VEGETABLE PROTEIN



TVP has a lot in common with soy curls. Both are dry, shelf-stable soy proteins that you rehydrate, then cook.

The differences: TVP is made from defatted soy flour, so its 12 grams of protein per serving come with fewer calories (80) than a similar-size serving of soy curls (120), which still contain some of soy's healthy fats. And TVP's flaked texture means it has less chew.

What to do with TVP: Toss rehydrated TVP in taco filling, chili, or anywhere else you want to replace ground beef.

—by Lindsay Moyer

Quick Studies

BY BONNIE LIEBMAN

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

Colonoscopy after 75?



Do you need a colonoscopy after age 75 if an earlier one found an adenoma (precancerous polyp)?

Researchers tracked 91,952 veterans (nearly all male) aged 75 or older who had a colonoscopy when they were 65 or older. In roughly 28 percent of them, the procedure had found an adenoma (which was likely removed).

Ten years later, 1.1% of those who had had an adenoma—vs. 0.7% of those who hadn't—had been diagnosed with colorectal cancer. And 0.5% of those with an adenoma—vs. 0.4% of those without one—had died of colorectal cancer.

But the risk of dying *due to other causes* was far greater: 22% had died after 5 years and 48% had died after 10 years, with or without a previous adenoma.

WHAT TO DO: Talk to your doctor about whether you need a colonoscopy after age 75. It's not clear if these results apply to women, who tend to live longer than men. For more on colorectal cancer, see May/June 2024, p. 3.

JAMA 335: 1483, 1499, 2026.

Does CBD boost appetite?

It's no secret that marijuana boosts appetite (often called "the munchies") due to its THC. But what about its cannabidiol (CBD), THC's non-intoxicating cousin?

Scientists gave 15 adults either a high dose of CBD (298 milligrams) or a placebo 3 hours before a lunch of pasta with tomato sauce, cheddar cheese, and olive oil. On average, they consumed 193 more calories after the CBD than after the placebo.

WHAT TO DO: Don't assume that CBD has no impact on your appetite.

Appetite 2026. doi:10.1016/j.appet.2026.108531.



Ozempic & Alzheimer's



Do GLP-1 drugs like semaglutide (sold as Ozempic for diabetes and as Wegovy for obesity) slow early Alzheimer's disease?

Researchers randomly assigned 3,808 people aged 55 to 85 with early-stage Alzheimer's or mild cognitive impairment to take oral semaglutide (14 milligrams a day) or a placebo. Their brains all had evidence of amyloid, the hallmark of Alzheimer's. (The trial was funded by Novo Nordisk, which makes semaglutide, and most of its authors had ties to drug companies.)

After 2 years, the semaglutide takers had no less cognitive or functional decline than the placebo takers.

WHAT TO DO: Don't expect semaglutide to slow cognitive decline.

Lancet 2026. doi:10.1016/S0140-6736(26)00459-9.

Got 4 minutes a day to curb your diabetes risk?



No time for a half-hour walk or run? Short bouts of exercise may help.

Scientists asked 22,706 people aged 40 to 69 who rarely did leisure exercise to wear a wrist accelerometer to track their activity for 1 week.

After 8 years, those who typically did 4 minutes a day of bouts of *vigorous* activity lasting up to 1 minute each—like running to catch a bus—had a 36% lower risk of type 2

diabetes than those who did none.

And people who did 25 minutes a day of bouts of *moderate-to-vigorous* activity lasting up to 3 minutes each—like walking briskly to catch a bus—had a 46% lower risk than those who did 4 minutes a day.

WHAT TO DO: Get moving. Short bouts of housecleaning, carrying groceries, climbing stairs, etc., may matter.

Diabetes Care 2026. doi:10.2337/dc25-3018.

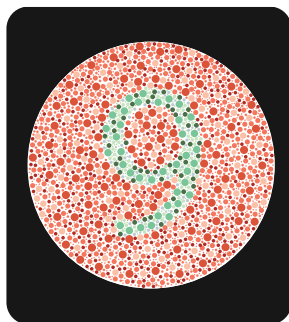
Color blindness & bladder cancer

Blood in the urine is the first sign of cancer in 80% to 90% of bladder cancers that cause symptoms. Yet one out of 12 men—and one out of 200 women—may not see the blood because they have trouble distinguishing between red and green colors. Do those people have worse outcomes because their cancers get diagnosed at a later stage?

Scientists examined the electronic health records of 135 bladder cancer patients with color blindness and 135 bladder cancer patients without color blindness. The color-blind patients had a 52% higher risk of dying over 20 years than those without color blindness.

WHAT TO DO: These preliminary results can't determine whether color blindness leads to poorer survival from bladder cancer. Electronic health records may omit key details, and something else about people with color blindness could explain their higher risk. But if you have trouble distinguishing reds from greens, have someone check your urine occasionally.

Nature Health 1: 24, 113, 2026.



Shoe-ing for the hip?

Which shoes are best for hip osteoarthritis pain?

Researchers randomly assigned 116 people with hip pain due to arthritis to wear either stable supportive shoes (with cushioning features and motion-control properties) or flat flexible shoes for at least 6 hours a day.

Those who wore supportive shoes could choose from ASICS Gel-Kayano, Merrell Jungle Moc, Nike Air Max 90 Ultra, Rockport Edge Hill, and New Balance 624. Those who wore flat flexible shoes could choose from Merrell Vapor Glove or Bare Access, Vivobarefoot Primus Lite or Mata Canvas, Allbirds Tree Skipper or Tree Lounger, and Converse Dainty Low.

After 6 months, hip pain while walking didn't vary between groups.

WHAT TO DO: Got hip pain? Wear the shoes that feel most comfortable.

Ann. Intern. Med. 179: 469, 2026.



A GLP-1 drug every other week?

Once you've lost weight on a weekly GLP-1 drug, can you take it every other week?

Doctors monitored 30 patients who took GLP-1 drugs weekly until their weight plateaued—that is, it changed less than 5% over 3 months—and who then switched to less-often (usually every-other-week) doses. (One of the doctors had ties to a GLP-1 maker.)

After the weekly doses, average weight had fallen from 193 to 163 pounds. After 8 months on alternate-week doses, weight

BPA & insulin sensitivity



Bisphenol A (BPA), a chemical in many plastics and cans, has been linked to type 2 diabetes in some studies. Does BPA make you less sensitive to the insulin your body secretes to move blood sugar into cells?

Researchers randomly assigned 40 sedentary adults to get the EPA's "reference" (presumably safe) dose of BPA (23 micrograms per pound of body weight) or a placebo every day. After 5 days, insulin sensitivity fell in the BPA group compared to a slight rise in the placebo group.

WHAT TO DO: This small trial needs to be replicated. But it's still worth minimizing your exposure to BPA by buying fewer foods sold in plastic containers or in cans, storing leftovers in glass containers, and using a stainless steel water bottle.

J. Clin. Endocrinol. Metab. 2026. doi:10.1210/clinem/dgag124.

had dropped to 159 pounds and fat mass had continued to fall slightly, while skeletal muscle mass, blood pressure, hemoglobin A1c, HDL ("good cholesterol"), and triglycerides stayed stable or improved slightly.

WHAT TO DO: Want to cut back on GLP-1 doses? Ask your doctor. Note: This small study isn't definitive, and few of these patients had type 2 diabetes. 🚫

Obesity 2026. doi:10.1002/oby.70137.



Peptide fever

WHAT TO KNOW ABOUT THE INJECTABLES THAT HAVE TAKEN SOCIAL MEDIA BY STORM

BY CAITLIN DOW

Peptide injections are social media's latest obsession. Influencers are raving about their promise of fat loss, faster recovery, and glowing skin. Yet outside of a few FDA-approved drugs, peptides live in an underregulated marketplace—one where evidence is thin, safety is uncertain, and access is surprisingly easy.

What are peptides?

Peptides are short chains of amino acids (the building blocks of proteins) that act as messengers with specific instructions for the cells that they bind to.

Insulin—the first peptide made in a lab—has been saving the lives of people with diabetes for more than a century. And GLP-1 peptide drugs like semaglutide (Ozempic and Wegovy) and tirzepatide (Mounjaro and Zepbound) have undergone extensive testing in clinical trials to become FDA-approved drugs for obesity and type 2 diabetes.

But when an Instagram influencer recommends combining a handful of peptides into a “stack” to speed up injury recovery while “promoting a natural glow,” they’re not talking about FDA-approved drugs.

Welcome to the largely unregulated Wild West of injectable peptides.

Peptide popularity

If you spend time in the health and wellness corners of social media, peptide chatter is impossible to avoid. Why have they become so popular?

“With the introduction of the GLP-1 drugs, the stigma of injecting oneself at home has kind of disappeared,” says Alexander Weber, chief of sports medicine and shoulder surgery at Keck Medicine at the University of

Southern California. “The barrier to entry is much lower than it once was.”

Clearly, peptides have entered the mainstream. “I live in LA and I treat everyone from the high school athlete to 70- and 80-year-olds who want to play pickleball five times a week and recover faster,” says Weber.

How often do his patients ask about peptides? “Every day.”

How to buy peptides

Scroll social media, and you’ll find endless tutorials on what to take, how much to take, and when to take it. But if the peptides that are being touted aren’t FDA-approved drugs, how are so many people getting them?

I decided to find out for myself. I wanted to know how hard it is for an average consumer to buy peptides and whether any guardrails exist.

A Google search for “Where to buy peptides?” reveals a sprawling marketplace. The sellers fall into three main buckets:

- international manufacturers who sell

peptides at low prices with little or no oversight,

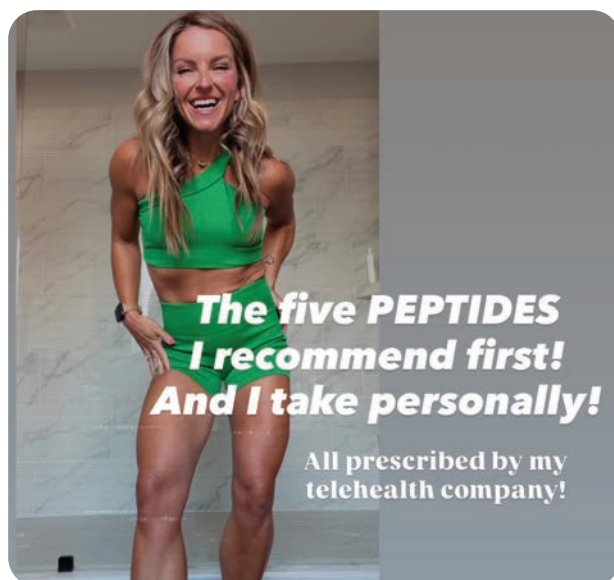
- research chemical sellers who sell peptides that are labeled with a disclaimer like “not for human use,” and
- concierge clinics or telehealth platforms that dole out prescriptions for peptides made by compounding pharmacies.

In practice, the lines between the three categories can blur.

► **International peptides.** The least-regulated route is buying from international sellers, who are often based in China.

As reported in *New York Magazine*, this approach typically involves connecting through encrypted messaging apps like Discord or WhatsApp with a middleman who coordinates the purchase.

The appeal is obvious: Peptides that can cost hundreds of dollars per vial



Social media influencers are eager to help you pick—and buy—a peptide.

cost a fraction as much. I didn't explore this option.

► **Peptides “for research use.”**

Another common route is buying peptides that are marketed “for research use only,” a loophole that allows anyone with an internet connection and a credit card to purchase them.

On one site, this pop-up appeared: “The products on this website are for legitimate research use only...By accessing this site, you acknowledge that you are at least 21 years of age, understand these terms, and have a legitimate research basis for buying these products.”

After I clicked the “I’m over 21” button—a digital pinky promise—the company’s full peptide catalog was at my disposal.

But just because you can buy something online doesn’t mean it’s being sold legally.

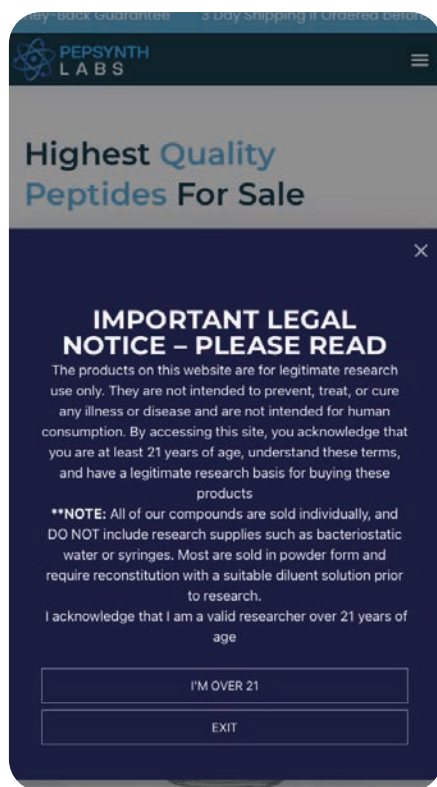
“A mere disclaimer that something is for research use only when the evidence suggests that the chemical isn’t just being used for research would probably not be particularly persuasive from a legal standpoint,” says Patti Zettler, an expert on food and drug law at Ohio State University.

So even though the FDA isn’t cracking down on peptides that are sold “for research use,” don’t assume that it’s a legal business model. “It’s just an area in which there hasn’t been much enforcement,” says Zettler.

► **Prescription peptides.** Medspas, concierge wellness clinics, and telehealth companies offer a more medical-esque pathway. They typically prescribe peptides that are made by compounding pharmacies. (Despite the name, most medspas aren’t affiliated with a medical practice.)

Compounding pharmacies—which create customized formulas of drugs for individual patients—are a small but vital part of the health care system.

“The classic example is a patient who has an allergy to an inactive ingredient in an approved drug and



Some peptide sellers claim that their products are for research use only. But you don’t have to prove that you are using them for research to buy them.

needs a version of the drug without that allergen,” explains Zettler.

“A compounding pharmacy will create that specific version for that patient.” (Another type of compounding pharmacy produces large batches of drugs, typically when there is a drug shortage.)

“A product can’t be legally compounded unless it’s a component of an FDA-approved drug or the FDA puts it on its ‘permissible for compounding’ list,” says Zettler.

Only a few of the popular peptides meet the first requirement...and none meet the second.

Many peptides sat on a list awaiting review for years. During that time, the FDA used “enforcement discretion,” meaning it generally didn’t crack down on sellers while the peptides were being evaluated.

That changed in 2023, when the FDA determined that 19 peptides posed “significant safety risks” and moved them to a de facto “do not compound” list.

How I bought peptides

To buy peptides, I looked at two options.

► **Legally suspect:** I went through the site of a popular self-proclaimed “biohacker” that had a handful of peptides on offer.

I added a vial of CJC-1295 + Ipamorelin (\$350) to my cart—to “enhance longevity,” “support optimal metabolism,” and “boost energy and vitality”—and headed to checkout.

I had to confirm that I’d read a liability disclaimer, which stated that the peptides were “provided exclusively for in vitro laboratory research purposes.”

But the print below the “place order” button noted that I first needed to complete a “complimentary required medical screening.”

Umm... Was I getting “research” peptides or a prescription? (After some digging, it appeared that the peptide would be shipped to me from a compounding pharmacy.)

The screening included a dozen or so questions about my basic medical history. Once that was done, I was connected to a provider who asked the same questions, then told me that she would approve my order.

The call lasted less than 90 seconds, and there was no opportunity for me to ask, for example, about the purity of what I’d be getting or who to contact in case I had any other questions.

► **Legal:** I chose the top result of my “Where to get sermorelin?” Google search, which required me to fill out a lengthy medical history and complete a telehealth appointment with a provider.

If approved, I’d be charged \$149 a month for sermorelin, which the company promotes to “boost energy, lean muscle mass, and strength.”

(Sermorelin was approved as a drug to treat growth hormone deficiency in children, though it was pulled from the market in 2008 for commercial—not safety—reasons. It can still be prescribed for “off-label” uses.)

While my telehealth appointment lasted only 5 minutes, I was given the opportunity to ask questions about safety, purity, and how to get in touch if I had follow-up questions. The answers were basic, but didn't raise any red flags.

Neither the legally suspect nor the legal option came close to the level of medical care I receive from my primary care provider, but the difference between the two was stark.

In the second case, questions were welcomed and answered. In the first, medical oversight was delivered with what felt like a wink and a nudge.

But in both cases, the peptides weren't recommended to me because my provider thought I needed them. The mere fact that I wanted them—I was never asked why—and had the money to buy them was really all that mattered.

And, no, I never injected myself with the peptides. (Keep reading to find out why.)

Are peptides effective?

"If you look on social media, you would think we're flush with excellent research that shows that these injectables are going to prevent the need for surgery or promote healing," notes USC's Alexander Weber.

Ditto for claims that peptides can help with focus, weight loss, energy, wrinkles, and more.

Truth is, "we're at ground zero," says Weber. "Even basic questions like dosage and frequency still need to be determined." For example:

► **Peptides for muscle growth.** One of the most popular reasons to take peptides is to build muscle and burn fat. Enter peptides like CJC-1295, ipamorelin, tesamorelin, and sermorelin, which all facilitate the body's release of growth hormone from the pituitary gland.

But there's no evidence that those (or other) growth-hormone-related peptides live up to influencers' claims of "better muscle retention" or that

they'll help "melt belly fat."

CJC-1295 and ipamorelin are often combined into one vial (like the one I purchased). Yet no clinical trials have ever tested ipamorelin, let alone the combination, for losing fat or gaining muscle. (A preliminary trial of CJC-1295 was halted early after a study volunteer died of a heart attack.¹)

► **Healing and repair peptides.** They call it the "Wolverine Stack": BPC-157 and TB-500. The two, taken together, help treat injuries and boost recovery, claim the influencers.

"Anecdotally, patients report that the BPC-157/TB-500 combination is effective," says Weber, who is an orthopedic surgeon. "And for a lot of folks, anecdotal evidence seems to be enough."

The scientific evidence tells a different story. While animal models suggest that BPC-157 can help heal everything from ulcers, wounds, and burns to ligament, tendon, and muscle injuries, randomized trial evidence is nowhere to be found.¹

In one non-randomized study, researchers phoned 12 people who had previously had BPC-157 injected into their knees and asked how they felt. Eleven reported that their pain had improved.

But there was no comparison group, the authors didn't report how much the patients' pain had improved, and the patients didn't even all suffer from the same kind of knee pain.²

As for TB-500, there are no published peer-reviewed trials in humans.



A vial of peptides, sterile water (to mix with the peptides), syringes, needles, and instructions on how to inject the peptides were delivered to me, accompanied by very fine print indicating that the peptides are "for research use only."

Are peptides safe?

Maybe. Maybe not. “I would break it down into two main categories,” says Weber.

► **Purity and potency.** Quality is a major concern. “You could get 100 percent or 99 percent pure peptides,” says Weber. Or there could be no peptides at all in your vial. Or what you receive could be contaminated.

In January, *New York Magazine* reported that 30 percent of the peptides tested by one company were “either mislabeled, under- or overdosed, or contaminated with toxins or foreign bacteria.”

“That’s part of why we have a regulator like FDA,” points out Ohio State’s Patti Zettler. “Because we as consumers can’t look at a product and know if it has what it says it has in it. Is it pure? Does it have contaminants? We can’t tell that.”

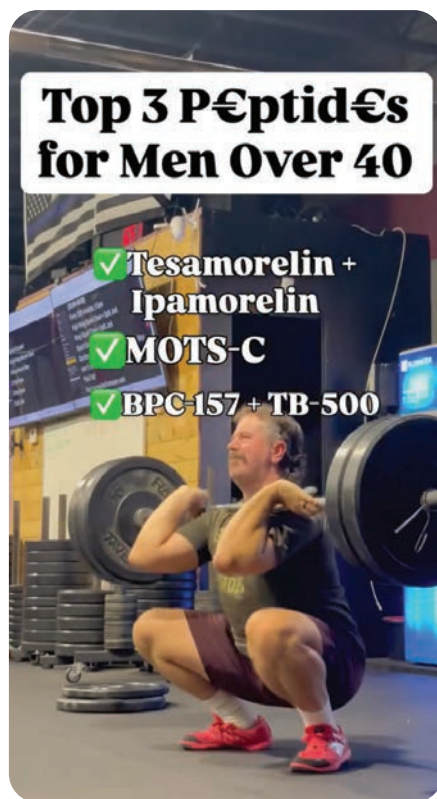
Peptides prescribed by a healthcare provider and mixed by a compounding pharmacy are likely the safest bet, though that’s no guarantee.

“There isn’t rigorous oversight of each pharmacy,” says Weber. One study found that compounded drugs were responsible for 45 percent of drug recalls in the US between 2012 and 2021, despite accounting for just 1 to 3 percent of prescriptions.³

► **Other health risks.** When the FDA declared that 19 peptides were not fit for compounding in 2023, the agency largely cited safety risks. For example, peptides, especially when injected, may trigger severe immune responses or side effects like increased heart rate, chest tightening, headache, nausea, and diarrhea, as well as skin irritation and pain at the injection site.⁴

In 2025, two women were hospitalized after receiving peptide injections at an anti-aging conference in Las Vegas. Both experienced increased heart rate, trouble breathing, and swollen tongues. (It’s not clear if the peptides were responsible for the symptoms.)

And peptides like BPC-157 can



Don’t trust the peptide claims you see on social media. Nearly all peptides lack rigorous scientific evidence.

result in the growth of more blood vessels, which could be a red flag.

“Are we creating growth, not just for our healthy cells, but also for tumor cells that we don’t know we have?” asks Weber.

The future of peptides

In April, the FDA announced that it will hold a meeting in July to consider whether seven peptides should be moved to the list of products that can be legally compounded.

The shift appears driven by politics rather than new scientific evidence: HHS Secretary Robert F. Kennedy Jr. has publicly supported peptides, even writing on X in 2024 that he would move to end the FDA’s “war” against the compounds.

But allowing the seven peptides—which include BPC-157 and TB-500—to be compounded isn’t the same as approving them as drugs. It simply gives compounding pharmacies the green light to prepare the peptides—

something many already do (with little fear that the FDA has any interest in cracking down on them).

Some argue that allowing peptides to be compounded legally will ensure a safer peptide supply. Zettler is not so sure.

“There’s no better evidence now than before the FDA made its announcement that peptides have any of the claimed effects, we don’t know what they do, and there are still all the concerns about compounding pharmacies complying with good manufacturing practices that already exist,” she says.

The FDA may also let manufacturers sell peptide pills as dietary supplements. CSPI has argued that that would threaten the public’s health, because the FDA doesn’t review supplements for safety or effectiveness before they hit the market.

So peptide pills would be susceptible to all the problems that already plague the supplement aisle—like poor quality, contamination, safety concerns, and unverified claims.

It also seems unlikely that we’re on the cusp of a windfall of high-quality studies testing the safety and efficacy of peptides.

Why? For a start, the FDA’s new approach undermines the incentive for those pushing peptides to study them in randomized trials and get them approved. (And even if they were approved, pharmaceutical companies would shy away from them for fear of being undercut by compounding pharmacies.)

“If companies can sell them and make lots of money without having to prove that they do what they’re claimed to do, why wouldn’t they?” Zettler points out.

Would you pay millions of dollars to test something that already makes you millions of dollars? 🚫

¹ *Am. J. Sports Med.* 54: 223, 2026.

² *Altern. Ther. Health Med.* 27: 8, 2021.

³ *J. Am. Pharm. Assoc.* 62: 1344, 2022.

⁴ [fda.gov/media/185641/download](https://www.fda.gov/media/185641/download).

The Healthy Cook



Soy what?

Want a little more soy in your life beyond tofu? Try tempeh (a fermented soybean cake), miso (a soy seasoning paste), or TVP (a soy-flour swap for ground meat). Enjoy! 🌱



CANTONESE-INSPIRED TEMPEH LETTUCE CUPS

You can change up these soy bundles to use what you have on hand. Substitute cashews for peanuts, or tofu for tempeh, or button mushrooms for shiitakes.

- | | | | |
|----------------------------------|-----------------------------------|--|--|
| 1½ Tbs. reduced-sodium soy sauce | ½ cup diced radish | 1 In a small bowl, whisk together the soy and hoisin sauces, sherry, and cornstarch with ¼ cup water. | 3 In the same pan, heat the remaining 1 Tbs. oil. Stir-fry the tempeh until browned, 3–4 minutes. Add the ginger, peanuts, and soy sauce mixture and stir-fry until the sauce thickens, 1–2 minutes. |
| 1½ Tbs. hoisin sauce | 2 scallions, sliced | 2 In a large nonstick pan over medium-high heat, heat 1 Tbs. oil until shimmering. Stir-fry the mushrooms until lightly browned, 2–3 minutes. Add the celery, radish, and scallions and stir-fry until hot, 1–2 minutes. Transfer to a large bowl. | 4 Separate the lettuce into individual leaves and fill with the tempeh mixture. Top with the stir-fried vegetables. |
| 1 Tbs. dry sherry | 2 8 oz. packages tempeh, crumbled | | |
| 1 tsp. cornstarch | 1 Tbs. minced ginger | | |
| 1 Tbs. + 1 Tbs. peanut oil | ½ cup peanuts | | |
| 2 cups diced shiitake caps | 1 head butter lettuce | | |
| ½ cup diced celery | | | |

TIME: 20 MINUTES | SERVES 4

PER SERVING (1½ cups filling + lettuce): calories 400 | total fat 22 g | sat fat 4 g | carbs 26 g | fiber 13 g | total sugars 4 g | added sugars 0 g | protein 28 g | sodium 350 mg

For cooking advice, write to Chef Kate at healthycook@cspi.org

GREEN SALAD WITH CARROT-MISO DRESSING

If you want to add a little heft to this simple side salad, toss in a handful of cooked cooled edamame.

1¼ cups grated carrot	1	tsp. toasted sesame oil
3 Tbs. minced ginger	8	cups salad greens
1 Tbs. white miso paste	1	mini cucumber, sliced
¼ cup rice vinegar	4	radishes, sliced
½ tsp. sugar	8	cherry tomatoes, quartered
1 Tbs. peanut oil		

TIME: 10 MINUTES | SERVES 4

PER SERVING (2½ cups salad + 4 Tbs. dressing): calories 100 | total fat 5 g | sat fat 1 g | carbs 12 g | fiber 5 g | total sugars 5 g | added sugars 1 g | protein 4 g | sodium 310 mg

TIP

Miso paste is a savory staple of Japanese cooking that's made by fermenting soybeans. White or shiro miso tends to have a milder flavor and less salt than darker varieties like yellow or red miso.



- 1 Make the dressing: In a blender, combine the carrot, ginger, miso, vinegar, sugar, and peanut and sesame oils. Blend until smooth.
- 2 Arrange the salad greens in 4 bowls. Top with the cucumber, radishes, and tomatoes. Serve with the dressing.

PLANT-BASED TACO BOWL

Never used textured vegetable protein (TVP)? Mimicking taco-seasoned ground meat is a great way to start. Bold spices and veggies make the soy crumbles pop.

1½ cups TVP	1	bunch cilantro, chopped
1 Tbs. + 1 Tbs. extra-virgin olive oil	¼	cup light sour cream
1 white onion, diced	1	Tbs. fresh lime juice
1 bell pepper, diced	1	avocado, sliced
1 cup fresh corn kernels	1	ripe tomato, cut into wedges
1 Tbs. chili powder	2	oz. tortilla chips
½ tsp. + ¼ tsp. kosher salt		

TIME: 20 MINUTES | SERVES 4

PER SERVING (1¼ cups TVP sauté + 2 Tbs. sauce): calories 390 | total fat 18 g | sat fat 3 g | carbs 40 g | fiber 12 g | total sugars 9 g | added sugars 0 g | protein 23 g | sodium 500 mg



- 1 Rehydrate the TVP according to the package instructions.
- 2 In a large nonstick pan over medium-high heat, heat 1 Tbs. oil until shimmering. Sauté the onion, pepper, and corn until tender-crisp, 1–2 minutes. Remove from the pan.
- 3 Add the remaining 1 Tbs. oil to the pan. Sauté the TVP, chili powder, and ½ tsp. salt until lightly browned, 2–3 minutes.
- 4 Make the sauce: In a food processor, blend the cilantro, sour cream, lime juice, and remaining ¼ tsp. salt until smooth.
- 5 Divide the TVP into 4 bowls. Top with the sautéed vegetables, avocado, tomato, and tortilla chips. Serve with the sauce.

Magic mushrooms?

DO MUSHROOM SUPPLEMENTS LIVE UP TO THE HYPE?

BY JESSIE SEILER

Mushrooms supplements are having a moment. Whether you're looking for some fungus for your gut, a shroom to turn your white blood cells into "stronger and more efficient fighters against diseases," or a "happiness booster" that also sharpens your focus, mushroom companies have a pill, powder, coffee, or gummy for you. Is there anything to it?

Shroom for improvement

"Mushroom supplements offer a natural way to support energy," says Hamilton's, which sells a mushroom blend you can add to your morning coffee.

"There's this interest in trying to get the most out of every bite, and added powders fit into that ethos," says Meghan Laszlo, a registered dietitian at Cedars-Sinai Medical Center in Los Angeles.

Hamilton's message: Make a small change to your morning coffee by adding our blend, and you'll be energized all day.

But companies' sweeping promises should give you pause.

"When there are a lot of different claims about how many diverse benefits a product could have, it's claiming to be a panacea," says Laszlo.

"You have to stop and look and say, 'Okay, where are these claims coming from? Is there any evidence to support them?'"

Other experts agree. "You know the Neighborhood of Make-Believe from the children's television show *Mister Rogers' Neighborhood*, where you could let your imagination go?" asks Pieter Cohen, an associate professor of

medicine at Harvard Medical School. "That's where the supplement manufacturers live when it comes to promoting their mushroom supplements."

And many of them encourage your imagination to go pretty far.

That's because companies aren't allowed to say that their supplements will treat or prevent a disease, but they *can* say that they support the body's "structure" or "function."

So "treats ADHD" is a no-no. But "supports focus"? All good.

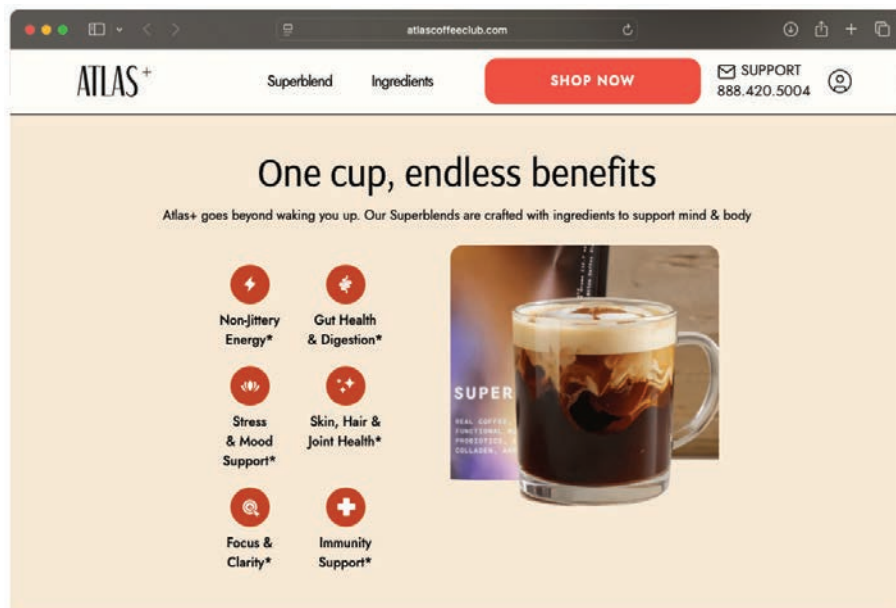
Supplement companies also don't have to disclose their manufacturing process. So you may not know what's in that "mushroom extract."

"Are companies just drying out the mushroom and cutting it up?" Cohen asks. "Or are they extracting some chemical from it? Whatever they're doing can have different effects on the composition of the final product."

Cognition

"Sip smarter. Not harder," says Shroomi, whose mushroom-coffee blend promises "improved mental clarity, enhanced productivity, long term brain health and energy!"

An 8 oz. cup contains 80 milligrams



Red flag: Mushroom supplement companies' sweeping promises to fix a wide range of problems.

of caffeine—roughly what you’d get in a regular cup of coffee—plus extracts from lion’s mane, a mushroom that Shroomi says “helps support memory, focus, and mental clarity.”

Will that deliver “the added brain boosting benefits of functional mushrooms” that Shroomi promises? At \$37 for a 10 oz. bag (which makes 24 cups), it better.

Yet only a few small studies have tested lion’s mane’s ability to enhance cognition.

In the largest clinical trial on healthy people, researchers randomly assigned 43 adults to take 1,800 mg of lion’s mane or a placebo, then gave them seven tests of attention and memory an hour later.¹ (Eight ounces of Shroomi’s blend has about 290 mg of lion’s mane.)

Those given lion’s mane performed better on just one of the tests. How much better? They responded, on average, about one-twentieth of a second more quickly. Is that going to make a big difference in real life? Not likely.

While the evidence on lion’s mane is thin, chaga (another common mushroom in alt-coffees) has even less going for it. In fact, we couldn’t find a single brain-health trial of chaga in people in a peer-reviewed journal.

Gut health

“Nourish your gut microbiome with our premium digestive wellness supplements,” says Plant People, whose mushroom gummies—a 30-day supply will set you back \$30—“support healthy gut microbiota.”

What, exactly, is doing the supporting? Plant People’s Wonder Day Mushroom Gummies contain turkey tail and maitake mushrooms.

The evidence for both? Pretty unimpressive.

In a test-tube study, when researchers treated a culture of cells that resembled the human gut microbiome with a compound found in turkey tail

mushrooms, they saw higher levels of “good” bacteria like *Lactobacillus* and lower levels of “bad” bacteria like *Clostridium* compared to a control compound.

But a randomized trial of healthy people who took the same compound for two months didn’t find meaningful changes to their gut microbiome.² (Both turkey tail studies were partly funded by supplement companies.)

As for maitake, we couldn’t find any peer-reviewed clinical trials that looked at its effects on the gut microbiome.

Instead of supplements, your best bet to encourage a diverse gut microbiome is to eat a variety of fiber types, says Laszlo. You can do that by loading up your plate with plenty of whole plant foods: vegetables, whole grains, nuts, seeds, beans, lentils...and, of course, mushrooms.

Immune support

The reishi mushrooms in MUD\WTR’s coffee “support a healthy immune system.”

Does that mean that drinking it can help ward off a cold, the flu, or some horrendous disease? The company can’t legally say that, but it would probably love you to believe it.

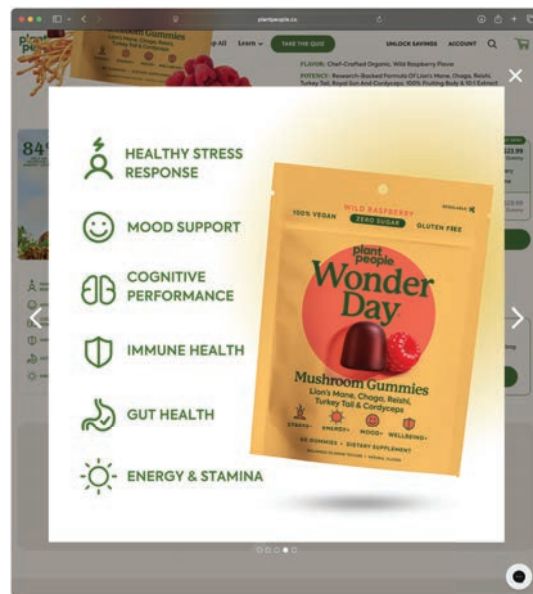
Reishi does show some promise, at least in test-tube and animal studies. For example, fish fed a protein that comes from reishi were better able to fight off viral infections than fish fed their normal diet.³

But we couldn’t find any clinical trials that have tested reishi’s ability to keep humans from getting sick.

More research is needed

So, are mushroom coffees and supplements worth buying?

The evidence so far isn’t enough for



The evidence that mushroom supplements live up to any of these claims? Paltry.

Laszlo. “I have an evidence-based practice,” she says. “I think the animal and test-tube studies are interesting, but I would never suggest a patient follow something that’s shown in lab animals without first testing it in people.”

Why not? “We don’t know how the study results might be different when they’re actually done in humans,” Laszlo points out. In fact, more often than not, findings from animal studies don’t translate into successful drugs or treatments for people.

But supplement makers have no reason to fund clinical trials of their products, Cohen points out, since they’re already cashing in without having to do the research.

Bottom line

Despite the hype, the evidence for mushroom coffees and supplements comes up short. If you want to try them, be our guest. Just don’t expect enhanced focus, balanced hormones, or a future without colds or flu. 🚫

¹ *Nutrients* 15: 4842, 2023.

² *Gut Microbes* 5: 458, 2014.

³ *Fish Shellfish Immunol.* 32: 986, 2012.

How to prevent food poisoning this summer

BY LINDSAY MOYER

Ah, summer. Perfectly grilled foods at a cookout. Farmers markets brimming with goodies. Peak produce ripe for preserving. Just don't unwittingly invite food poisoning to spoil the party. We have answers to your food safety questions.

COOKOUTS

Q: How should I thaw meat?

A: In the fridge, not on the countertop. That applies to meat, poultry, or seafood.

Why? Leaving perishable food on the countertop to thaw (or marinate) keeps it in the “danger zone”—between 40°F and 140°F—for too long.

Between those temperatures, bacteria like *Salmonella* and *E. coli* multiply more rapidly and can grow to levels that cause food poisoning.

To play it safe, never keep perishable food out of the refrigerator or freezer for more than two hours (that rule also applies after you've cooked it).

Q: Are burgers done cooking when they're brown?

A: You can't judge grilled meat by its color. “It's not a good indicator for what's actually happening inside of that food,” cautions Lester Schonberger, an associate extension specialist in the department of food science and technology at Virginia Tech.

Take ground beef, which “can undergo premature browning,” says Schonberger. “It looks like it's done, but in reality it's undercooked and would be riskier for you to consume.”

How might that happen?

Factors like beef's pH, iron, and myoglobin protein—as well as how

it's been stored and packaged—determine whether the raw meat looks bright red or grayish brown before it ever touches the grill.

“For example, raw ground beef that has been stored for a longer period of time or has been stored at temperatures above 40°F will look more brown,” explains Schonberger.

“So there isn't that same conversion from red-colored meat to brown-colored meat as it cooks.”

In other cases, the meat can still look pink even though it's cooked to a safe temperature.

The only surefire way to tell if meat, poultry, or fish is done on the outside *and* inside? Use an instant-read food thermometer to check that the thickest parts have reached safe minimum internal temperatures (see “Play it safe”).

Q: I've been grilling without a thermometer for years. Why should I start now?

A: “I don't want to discount learned experience and intuition,” says Schonberger. But it's a good idea to verify with data, he notes.

Checking the temperature of grilled foods takes only a few seconds with an instant-read food thermometer.

“In my opinion, that's worth the hours you might otherwise have to spend on the toilet or on a hospital visit from food poisoning.”

Play it safe



▶ **165°F**
Chicken and turkey
(ground or parts)



▶ **160°F**
Ground beef, pork,
and lamb
(including burgers)



▶ **145°F**
Beef, pork, and lamb
steaks and chops
(then let them rest for at
least 3 minutes)



▶ **145°F**
Fish
(or cook until the flesh is
opaque and separates
easily with a fork)

“And when it comes to your cookout, you're not just preparing food for yourself anymore.”

Some of your guests “could be especially vulnerable to significant effects of foodborne illness,” notes Schonberger. If they're over 65 or under 5, pregnant, or have a weakened immune system, a bout of food poisoning could lead to hospitalization or, in some cases, death.

Causes of a weakened immune system include an autoimmune disorder (like lupus), alcohol use disorder, chemotherapy or radiation treatments, and diseases like diabetes, kidney disease, liver disease, or HIV.

FARMERS MARKETS

Q: Is it risky to buy meat, seafood, or eggs on a hot day?

A: Not if the vendor keeps the foods cold by packing them in display cases filled with ice or storing them in closed coolers filled with ice. (That's important on *any* day.)

And once you buy something, *you're* in charge. Try to limit the time the food is left unrefrigerated while you're shopping or on your way home. That's when foods can linger in "danger zone" temperatures.

Give yourself a one-hour time limit on hot summer days. For all other days, two hours is the rule of thumb.

Q: Is it risky to buy bruised "seconds" apples and tomatoes?

A: The occasional bruise doesn't mean that an otherwise-fresh fruit or vegetable has gone bad, just that it's been damaged slightly.

And some "seconds" simply have an odd shape, small size, or other flaw that's purely cosmetic.

That said, produce with more-extensive damage may also have cracks or cuts in the skin that could let in microbes. So be sure to cut away brown or soft spots and, when in doubt, "cook those foods," suggests Schonberger.

"Make an applesauce or apple butter or tomato sauce." Or whip up a big batch of chili, soup, or another tomato-based dish that freezes well.

Produce that's visibly moldy or rotten in spots carries more risks—like the potential for toxins that can make you sick—and shouldn't be eaten.

You should also avoid produce that grows in trees or up high on stakes that has fallen to the ground, where it can become contaminated with bacteria (like *E. coli* or *Salmonella* from animal poop) that cause food poisoning.

How do you know if that's what a farmer is selling you?

"As part of farmers' produce safety training, we tell them that when an

apple or tomato falls to the ground, they should leave it on the ground," says Schonberger.

The Food and Drug Administration doesn't allow farmers to sell those dropped fresh apples or tomatoes directly to the public, but some small farms aren't covered by the FDA's rules. To be sure, ask your local farm stand how they select their "seconds."

Q: Is raw milk from healthy cows safe?

A: Depending on where you live, you might see raw milk or other dairy products made from raw milk at a farmers market.

"Raw" means that the milk hasn't been pasteurized—that is, heated to a specific temperature for a set amount of time to kill pathogens.

Those bugs can include viruses like bird flu, parasites like *Cryptosporidium*, and bacteria like *Campylobacter*, *Listeria*, *Brucella*, *Salmonella*, or *E. coli*. Symptoms of infection can range from diarrhea, stomach cramping, and vomiting to kidney failure or even death.

You may have heard that it's safe to drink raw milk from healthy cows or from farms that carefully clean their milking equipment.

Does that make raw milk as safe as pasteurized milk? No.

"Let's talk about cows," says Schonberger. "They naturally contain microbes in their guts that can make us sick. Cows will pass those microbes when they poop, and where they poop is right behind where the udder that gets milked is located on that cow's body."

Feces can also contaminate cows' bedding (like hay) and some other areas of the barn.

"Farmers do a really good job of



Slightly bruised tomatoes or apples sold as "seconds" can still be safe to eat. When in doubt, cook them.

keeping spaces that they can control clean," says Schonberger. "But nature is nature."

What if the farmer is taking precautions like treating the udders with antiseptic and cleaning their milking equipment?

That means "a lower risk of contamination," says Schonberger, "but it doesn't mean no risk." And when contamination happens, "that milk is an ideal environment for those microbes to grow to a level that will make us sick."

HOME CANNING

Q: Why could home canning cause food poisoning?

A: "We're particularly concerned about a microbe called *Clostridium botulinum*, which exists all around us as a spore," says Schonberger.

The spore itself isn't the problem.

"When we're canning something, we're removing oxygen from the jar and creating a vacuum," explains Schonberger.

Without oxygen, the spore can germinate (grow) into a "vegetative cell" and release the botulism toxin, which can cause difficulty breathing, muscle paralysis, or even death.

But you can prevent that growth and toxin release. It's why canning recipes focus on the amount of sugar, salt, water, and acid in the jars, as well as the amount of time the jars spend in the canner.

Q: Should I use a boiling-water bath canner or a pressure canner?

A: Some foods can be processed in a steam canner or boiling-water bath canner. But others should only be canned in a pressure canner, which processes the jars at a higher pressure to reach higher temperatures.

It all comes down to how acidic the contents are (see “The acid test”). That’s because *C. botulinum* spores won’t germinate below a pH of 4.6. (On the 0-to-14 pH scale, 7 is neutral and lower numbers are more acidic than higher numbers.)

“When we’re preserving fruit jam in a boiling-water bath or steam canner, the jam is below that 4.6 pH threshold,” explains Schonberger.

“That keeps the spores from germinating, so we can process the jam at the regular boiling point of water.”

In contrast, pressure canning is essential for low-acid vegetables, like green beans, which need to be heated above the regular boiling point of water to deactivate the spores.

If a sealed jar of beans contained spores and the jar wasn’t processed at a high enough temperature for a long enough time, the spores could germinate and produce toxins.

Q: Why does it matter if I live in the mountains or at sea level?

A: Water boils at a lower temperature at higher altitudes, so water-bath or steam canning recipes typically specify longer processing times if you live in the mountains.

Likewise, pressure canning at higher altitudes may require more pressure.

Follow your recipe’s instructions, and check the altitude at your address.

The acid test

Acidity	Example foods	Safe canning method(s)
High in acid	Most fruits, tomatoes, pickles	Boiling-water bath or steam canner (or pressure canner*)
Low in acid	Most vegetables, meats	Pressure canner

* Note: It’s safe to can high-acid foods in a pressure canner, but some may get overcooked and mushy. For the best results, follow tested recipes.

Q: If my recipe calls for vinegar, can I use any kind?

A: “When we can foods like relishes and pickles, we add vinegar not only to get the flavor we want, but also so that we can process the foods in a boiling-water bath canner,” says Schonberger.

“In that case, the vinegar’s low pH is making the food more acidic and keeping the botulism spores from becoming vegetative cells.”

What matters is how acidic the vinegar is—that’s true whether it’s white, red, apple cider, etc.

So it’s important to check the label for the vinegar’s percent acidity.

“Tested recipes were designed to be made with vinegar that has at least 5% acidity to properly acidify the foods so that you can safely preserve them,” says Schonberger.

Q: Where can I find safe recipes?

A: You can trust relatively recent recipes that have been tested by food scientists like those at a university ex-

tension service or have been shared by the U.S. Department of Agriculture...not just any recipe you find on the internet or social media.

“Research-tested recipes have determined the right proportions of ingredients, processing time, and temperature to produce a

safe product,” says Schonberger.

“These recipes will have their ingredients in specific quantities and will tell you how long to process something in the canner at specific temperatures or pressures.”

Sources of tested recipes include the National Center for Home Food Preservation (nchfp.uga.edu), the *USDA Complete Guide to Home Canning*, and university extension websites.

Q: Can I use less sugar or salt?

A: It depends. “This is why it’s so important to follow tested recipes,” says Schonberger. “They will tell you where and how you can make adjustments based on your personal preferences.”

■ **Sugar.** If a tested recipe calls for a specific amount of added sugar, assume you need it for safety. The sugar in some jam recipes, for example, helps bind water so that it isn’t available to *C. botulinum* spores.

Trying to cut back? “We have tested safe low-sugar recipes for people who want them,” notes Schonberger.

■ **Salt.** In most recipes, salt is added for flavor, not safety. If a tested recipe says something like “add up to a teaspoon of salt to your taste,” the amount of salt—even whether you add any at all—is up to you.

One exception: foods that you ferment before canning. “Salt is really important in a product like fermented pickles or sauerkraut,” says Schonberger. 🍷



To be sure your vinegar is safe for canning, look for “5% acidity” on the front or back label.

Cream of the crop

HOW TO PICK A COFFEE CREAMER

BY LINDSAY MOYER & MARLENA KOCH

Most coffee creamers have a teaspoon of added sugars in every tablespoon. If they have cream—from cows or coconuts—it adds a gram or so of saturated fat. Is that a little or a lot? It depends on how many tablespoons of creamer you like in your cup...or cups...of coffee. Here's what to consider.

1 What's your serving?

An official "serving" of liquid creamer is only 1 tablespoon, Nutrition Facts labels say. But a serving of half and half is 2 tablespoons. And many coffee mugs hold at least 12 ounces. More coffee, more creamer. If your brew ends up looking more tan than brown, you might be using 3 or more tablespoons of creamer.

That's why our Best Bites and Honorable Mentions keep a lid on saturated fat (no more than 1 gram per tablespoon). It also explains why our Honorable Mentions are capped at 2 grams of added sugars and our Best Bites have none.

But it's important to keep things in perspective. A full day's max is 20 grams for sat fat and 50 grams for added sugars. So if your favorite creamer isn't as low as a Best Bite or Honorable Mention, its few extra grams aren't going to derail a healthy diet.

On the other hand, it is good to know how much creamer you're getting. Our advice: Whip out a tablespoon and measure your typical pour.

Tip: Many brands lean sugary. By the time your coffee is as creamy as you want, it might be sweeter than you need. Solution: Start with a tablespoon of sweetened creamer, then top it off with dairy milk or unsweetened plant milk.

2 The healthiest dairy "creamer" is milk.

When you're looking at just a tablespoon, any kind of dairy milk is low enough in saturated fat (half a gram or less). And you get a little natural sweetness from the milk's lactose (milk sugar), with zero added sugars. Hello, Best Bites!

In contrast, sugar-sweetened flavored dairy creamers like Chobani, Natural Bliss, and Starbucks Sweet Cream have at least a teaspoon (4 or 5 grams) of added sugars in every tablespoon. Newcomer Too Good & Co. cuts that down to 3 grams. While

Too Good just misses our Honorable Mention cutoff, it does better than most sugar-sweetened dairy creamers.

3 Plant-milk creamers have perks.

Most of our Best Bites and Honorable Mentions are plant creamers. Even if you typically drink dairy, plant creamers are worth a sip. (See the photos on p. 22 for some yummy picks.) Among their perks:

■ **Healthy fats.** Most plant creamers get their fat from nuts or healthy oils like sunflower or canola, so a tablespoon rarely contains more than a trivial amount of saturated fat. Exception: Some creamers contain enough coconut cream to add a gram or so.

■ **Unsweetened options.** Califia, Elmhurst, Forager Project, NutPods, and Sown churn out an impressive array of almond, oat, cashew, and almond-coconut plant creamers with no added sugars or sweeteners.

■ **Barista milks.** They're not labeled "coffee creamer," but barista plant milks, which are intended for lattes, cappuccinos, and more, are designed to hold up to foaming and not separate in coffee. A creamer-size serving typically has little or no added sugars.

■ **Shelf-life bonus.** Dairy creamers typically last for a week in the refrigerator after you open them, but many plant creamers last at least twice that long (check the label).



How two Best Bites dodge added sugars: NutPods is unsweetened. Chobani uses stevia extract plus allulose.

■ **Lactose-free.** Lactose intolerant? Plant creamers are free of the lactose that's found in dairy milk.

4 Plant-milk or "non-dairy" creamer? Make no mistake.

Plant-milk creamers tend to be healthier than "sugar & oil" creamers. At least that's our name for them. Those liquids, along with their powdered counterparts, typically call themselves "non-dairy creamers."

International Delight, Coffee-Mate, and similar sugar & oil creamers have no real milk. They're mostly water, sugar, oil, and a smattering of food additives (including milk derivatives like sodium caseinate).

Some sugar & oil creamers may be lactose-free (check the label). But if you have a milk *allergy*, don't assume that "non-dairy" means they're safe for you to consume.

5 Some sweeteners are safer than others. Most "zero sugar" creamers from big brands like Coffee-Mate and International Delight are sweetened with sucralose and acesulfame potassium, which we rate as "avoid" because they may pose a cancer risk (see chemicalcuisine.org).

On the upside, Natural Bliss Zero Sugar and Chobani Zero Sugar creamers shun both of those ingredients in favor of a safer low-calorie sweetener: stevia extract.

Chobani also adds a little allulose, a naturally occurring sugar that our bodies don't completely digest and absorb so it may cause GI troubles in sensitive people who consume too much at one time. That's why we rate allulose as "cut back."

On the downside, some people detect an aftertaste from low-cal sweeteners like stevia extract. If your taste buds prefer sugar, try any of our plant-milk Honorable Mentions. Silk Soy Original and flavored creamers from Elmhurst, Forager Project, and Malk add just 1 or 2 grams of sugars per tablespoon.

6 Some gums or emulsifiers are safer than others.

Many plant-milk and non-dairy creamers keep their oil, water, and other ingredients from separating by adding gums or emulsifiers like cellulose gel, gellan gum, and lecithin. That's fine.

But other creamers add cellulose gum, carrageenan, or polysorbate 60, all of which we rate as "caution" because they may pose a risk of cancer or digestive problems. With so many better options, we disqualified those creamers from earning a Best Bite or Honorable Mention.

Note: Cellulose *gel* (a.k.a. cellulose) and cellulose *gum* may sound similar, but they're different ingredients (the gum is made by reacting cellulose with another compound).

7 It's easy to avoid titanium dioxide.

The color additive whitens foods, so it used to be a regular in coffee creamers. But nowadays, most big brands of liquid creamers don't use titanium dioxide, which is linked to DNA damage. (Damaging DNA is one way that chemicals can lead to cancer or other health problems.) We rate titanium dioxide as "avoid."

It can still be used in creamers, though, so check the ingredients list. Unfortunately, that's no guarantee, since the additive can hide behind vague names like "color added" or "artificial color," which could mean titanium dioxide or safer colors. (There's no way to tell unless you ask the company.)

8 Want cold foam?

Cold foam has made its way from coffee shops to supermarkets. The whipped-cream-like cans dispense aerated creamer to top off iced coffees in style.

We found just one cold foam that's free of disqualifying additives. But with its 4 grams of added sugars in 2 tablespoons, Silk Cinnamon Caramel Oat exceeds our Honorable Mention cutoff. (Cold foams have more air, so their serving size is 2 Tbs.)

Another option: Make your own cold foam using a rechargeable milk frother. (They work on hot or cold milk or creamer.) Froth yours until it foams up, then pour it over your coffee. ☕



Silk Original Soy Creamer

A great-tasting splash of soy with a modest dose of sweetness.



Sown Unsweetened Organic Oat Creamer

An unsweet oat creamer that's so smooth, you won't miss the sugar.



Forager Project Brown Sugar Creamer

Creamy oats, cashews, and coconut plus only 2 grams of brown sugar.



Califia Unsweetened Almond Creamer

No sugar or sat fat and only 5 calories in every tablespoon.



Oatly Barista Edition Oatmilk

Slightly sweet "barista" plant milks can stand in for coffee creamers.

Not your average joe

Best Bites (✓✓) and **Honorable Mentions** (✓) have no more than 1 gram of saturated fat in a serving (2 tablespoons for cold foam creamers; 1 tablespoon for all other creamers). Best Bites have no added sugars; Honorable Mentions can have no more than 2 grams.

We disqualified creamers (marked with •) that contain one or more of these additives: acesulfame potassium, carrageenan, cellulose gum, polysorbate 60, sucralose, or titanium dioxide.

Note: Unless otherwise specified, the numbers apply to all flavors in a product line. Within each section, creamers are ranked from least to most added sugar, then saturated fat.

Dairy liquid creamers (1 Tbs.)				
	Added Sugars (g)	Saturated Fat (g)	Calories	Additives
✓✓ Fat-free milk	0	0	5	
Land O Lakes Fat-Free Half and Half	0	0	15	•
✓✓ Low-fat (1%) milk	0	0	5	
✓✓ Reduced-fat (2%) milk	0	0	10	
✓✓ Whole milk	0	0.5	10	
✓✓ Chobani Zero Sugar	0	1	20	
✓✓ Half and half	0	1	20	
✓✓ Natural Bliss Zero Added Sugar Cinnamon Coffee Cake	0	1	20	
Starbucks Zero	0	1	20	•
Organic Valley Real Dairy Lactose Free	3	0.5	25	
Too Good & Co.	3	1	30	
Lactaid Lactose Free	4	0.5	30	
Natural Bliss ¹	4	1	35	
Starbucks Sweet Cream ¹	5	0.5	35	
Chobani ¹	5	1	35	
Dunkin' Extra Extra	5	1	35	•
Horizon Organic Real Dairy	5	1	40	
Starbucks Cinnamon Dolce Latte	5	1	40	

Plant-milk liquid creamers (1 Tbs.)				
	Added Sugars (g)	Saturated Fat (g)	Calories	Additives
✓✓ Califia Farms Almond Unsweetened	0	0	5	
✓✓ Califia Farms Oat Unsweetened	0	0	15	
✓✓ Elmhurst Cashew Unsweetened	0	0	10	
✓✓ Elmhurst Oat Unsweetened	0	0	10	
✓✓ Forager Project Organic Plain Unsweetened	0	0	10	
✓✓ NutPods Almond+Coconut Unsweetened	0	0	10	
✓✓ NutPods Oat Unsweetened	0	0	10	
Planet Oat Zero Sugar Oatmilk	0	0	10	•
✓✓ Sown Organic Oat Unsweetened	0	0	20	
✓✓ NutPods Half & Half Alternative Almond+Coconut	0	0.5	10	
✓✓ Malk Coconut Unsweetened	0	1	20	
Silk Half & Half Alternative	0	1.5	15	
✓ Oatly Barista Edition Oatmilk	1*	0	10	
✓ Elmhurst Cashew	1	0	15	
✓ Elmhurst Oat	1	0	15	

	Added Sugars (g)	Saturated Fat (g)	Calories	Additives
✓ Silk Soy Original	1	0	15	
✓ Forager Project Organic Brown Sugar	2	0	20	
✓ Malk Coconut Sweet Cream	2	1	25	
✓ Malk Coconut Vanilla	2	1	25	
Califia Farms Almond ¹	3	0	20	
Califia Farms Oat Vanilla	3	0	25	
Califia Farms Organic Almond	3	0	20	
NutPods Organic Simply ¹	3	0	20	
Silk Soy Vanilla	3	0	25	
Violife Sweet Cream	3	0	30	•
Oatly Oatmilk	4	0	30	
Organic Valley Non-Dairy Oat	4	0	30	
Planet Oat Oatmilk	4	0	25	
Silk Almond	4	0	25	
Silk Oat	4	0	25	
Sown Organic Oat	4	0	30	
Natural Bliss Oat Brown Sugar	4	1	30	
So Delicious Organic Coconut French Vanilla	4	1	30	
Natural Bliss Almond Vanilla	5	0.5	30	
Starbucks Non-Dairy	5	1	30	

Sugar & oil liquid creamers (1 Tbs.)				
	Added Sugars (g)	Saturated Fat (g)	Calories	Additives
Coffee-Mate Zero Sugar ¹	0	0	15	•
Splenda	0	0	15	•
International Delight Zero Sugar ¹	0	0.5	15	•
Coffee-Mate The Original	1*	0	20	•
NutPods Non-Dairy Naturally	3	1.5	35	•
Coffee-Mate—except The Original ¹	5	0	35	•
Coffee-Mate Xtra	5	0	30	•
International Delight	5	0.5	35	•

Cold foam creamers (2 Tbs.)				
	Added Sugars (g)	Saturated Fat (g)	Calories	Additives
Coffee-Mate Zero Sugar Cinnamon Coffee Cake	0	0.5	10	•
Coffee-Mate	2	0.5	15	•
International Delight	3	0	20	•
Silk Cinnamon Caramel Oat	4	0	25	
Dunkin' Extra Extra	4	1	30	•

Powdered creamers				
	Added Sugars (g)	Saturated Fat (g)	Calories	Additives
Coffee-Mate The Original (¾ tsp.)	0	0.5	10	
Coffee-Mate Zero Sugar Hazelnut (¾ tsp.)	0	1	15	•
Coffee-Mate Hazelnut (½ tsp.)	1	0	10	

✓✓ Best Bite | ✓ Honorable Mention | * Contains less than 1 gram of added sugars. | ¹ Average of the entire line or of the varieties listed. | • Contains one or more of: acesulfame potassium, carrageenan, cellulose gum, polysorbate 60, sucralose, or titanium dioxide (to see which, go to cspi.org/AdditivesList).

Daily Values (DVs): Added Sugars: 50 g. Saturated Fat: 20 g.

Source: company information. Nutrition Facts and ingredients can change; always check the label. The use of information from this article for commercial purposes is strictly prohibited without written permission from CSPI.



FOOD FIND

Cool as a cuke

When the summer heat spikes, it's hard to find a better snack than a refreshing, water-rich **cucumber**.

Cukes may not compare to, say, leafy greens in the nutrient department, but all veggies are good veggies!

What are the best cucumbers for snacking? The ones you'll reach for again and again. Whether you care about their crunch, their skin and seeds, or something else, here's how they compare:

■ **American cucumbers.** These are the dark green ones you probably grew up with. On the upside, they often cost less than other varieties. On the downside, they have thicker skin and lots of seeds. (Of course, you can always peel them and scoop out the seeds.)

■ **English cucumbers.** They're thinner-skinned, sweeter-tasting, and less watery than their American cousins. And their seeds are smaller and less noticeable.

■ **Persian or mini cucumbers.** Think of them as personal-sized English cucumbers. Each one is roughly 4 to 6 inches long (see the photo).

■ **Baby cucumbers.** Just when we thought cucumbers couldn't get any cuter or crunchier, companies like **Sunset**, **Mucci Farms**, and **Nature Fresh Farms** found a way to shrink mini cukes down to *itty-bitty* ones with names like Cutecumber Poppers, Lil Chills, and Pop Its. Look for tubs of "baby" or "bite-sized" cucumbers that measure just a couple inches long.

How cool is that?



FOOD FAIL

Sugar rush

Why does **Starbucks** now offer dozens of different **Refreshers**? Simple. To get you—and your wallet—in the door after the morning coffee rush.

"Winning the afternoon means meeting customers where they are later in the day," wrote a Starbucks marketing exec before the launch of the chain's new **Energy Refreshers** in April.

To Starbucks, that means marketing caffeine in dressed-up sugary drinks. (The caffeine comes from an unroasted-coffee-bean extract, so you get coffee's buzz but not its flavor.)

It also means some later-in-the-day liquid calories: A venti (24 oz.) original or Energy Refresher will set you back about as many as a 12 oz. can of Coke. So will any grande (16 oz.) Lemonade Refresher.

And if you believe the names and think you're going to get a nice dose of fresh fruit from your Refresher, keep in mind that their base is mostly water, added sugars, and white grape juice concentrate plus "fruit and vegetable juice concentrate for color."

In fact, the Mango Dragonfruit has no actual mango (only "natural flavor"), and its only dragonfruit is some freeze-dried pieces. Likewise, the Strawberry Açaí has no açaí, the Mango Strawberry has no mango, and the strawberries in both are freeze-dried.

Want to win your afternoon with a truly refreshing fruit-filled drink? Try our Quick Dish.

QUICK DISH

CUCUMBER MELON REFRESHER

In a blender, combine 2 cups melon (honeydew, watermelon, or cantaloupe), 1 mini cucumber, 1 Tbs. freshly squeezed lime juice, and 1 cup ice cubes. Blend on high until smooth. Makes 2 cups. Tip: For a less slushy drink (think *agua fresca*), strain the blended mixture through a fine mesh strainer and serve over ice.

