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Maxxed out

DO YOU NEED TO OPTIMIZE THAT?

BY CAITLIN DOW & LINDSAY MOYER

"Maxxing." It's "the suffix that tells us to ruthlessly optimize everything," says the *New York Times*. Apparently, that includes our health. Proteinmaxxing, fibermaxxing, strengthmaxxing...you name it, there's probably a maxxing for it. What works, what's risky, and what's a waste of money? Here's a look at 4 examples.

1 Proteinmaxxing? It's just a marketing ploy.

If you want "a stronger, leaner body," you need to start proteinmaxxing, says one social media influencer.

Really?

Protein matters for muscle, but most US adults already eat more than the Daily Value (50 grams). And while extra protein can slightly increase muscle gain in younger adults who strength train, the training has a much bigger impact than the protein (see Jul./Aug. 2025, p. 3).

Where else can extra protein deliver gains? To a food company's bottom line.

"We're focused on modernizing our menu with innovative, relevant, and hype-worthy products that will resonate with our customers," gushed a Starbucks exec in a statement announcing the chain's protein lattes.

Companies are "leaning into the protein-fortified food trend to unlock growth," says an article from the US Chamber of Commerce, a pro-business group. Brands are "rolling out products to meet consumer demand for protein that target not only 'gym bros' but women too."

Food manufacturers are tossing protein powder into everything from Doritos to Kraft mac & cheese. There's pumped-up popcorn, pretzels, chips, crackers, bars, cookies, brownies, donuts, soda, water, candy, mashed potatoes, ice cream—you name it!

But processed "protein" foods typically come with baggage.

One big problem: Because of their added sugars, fat, or white flour, they can easily cost you more calories per gram of protein than healthy lean protein foods do.

For example, 100 calories of chicken or turkey breast, egg whites, chunk light tuna, or low-fat cottage cheese deliver about 15 to 20 grams of protein. You'd have to eat a 440-calorie Lenny & Larry's Chocolate Chip Protein Cookie or a 340-calorie Peanut Butter Perfect Bar to get roughly that same number.

Two exceptions: Bottled protein shakes made with low-fat or fat-free ultrafiltered milk typically supply protein at a lower calorie cost. So do homemade shakes, as long as you're careful about what you mix the protein powder with.

Some people do need to pay attention to protein because they eat less. For example, appetite often drops in older adults and people on GLP-1 weight-loss medications.

But a lighter appetite makes it even more important to choose foods that supply protein with fewer calories... not protein junk foods.



Most people don't need to eat more protein, but proteinmaxxing is a marketer's dream. Why else would protein soda, sticky buns, cereal, and ice cream exist?

Photo: Marlena Koch - CSPI.

The bottom line: Most people get more than enough protein from the foods they eat every day. To see how much you need and what's in typical servings, go to cspi.org/proteinfoods.



New to strength training? Consider booking a few sessions with a trainer to learn proper technique.

2 Strengthmaxxing? Keep it simple.

Exercise fads come and go—remember "Buns of Steel"?—but one trend we can get behind is the recent push to optimize our muscles with strength training.

It's one of the few wellness trends where the data justifies the enthusiasm. Strength training helps maintain our independence as we age, prevents falls, lowers blood sugar, and more (see Dec. 2022, p. 8).

But if social media does one thing, it takes good, straightforward advice and makes it complicated...or extreme. We're talking about iffy, rigid prescriptions to optimize strength training based on your age, diet, sex, or hormones (see p. 18). Our advice: Ignore it all and stick to the basics.

One takeaway from the American College of Sports Medicine's latest guidelines on resistance (aka strength) training: Consistency beats perfection.

"The biggest jump in results happens when you go from no resistance training to any resistance training," the group writes on its website. "Keep it simple and focus on showing up regularly."

No single method is right for everyone. You can go to the gym or get strong at home. You can join a group class or go solo. And you can use elastic bands, your own body's weight (think pushups, planks, and lunges), dumbbells, kettlebells, barbells, or machines.

You can also personalize your workouts for what you want most. After reviewing the evidence from randomized trials that enrolled more than 30,000 participants, the guidelines' authors noted that you can tailor your workouts to build muscle strength, size, or power.[1]

For stronger muscles, lift heavier loads for 2 to 3 sets per exercise. For bigger muscles, aim for more sets (roughly 10 per week for each muscle group).

Then there's muscular power, which is the ability to apply strength quickly. That can keep you more agile and help prevent falls. To build power, lift moderately heavy loads as fast as possible. (Lower the weight slowly as you return to your starting position.)

What about all the social media posts about "complex periodization" or "training to momentary muscle failure"? Keep scrolling. Research hasn't found that either method consistently changes results for the average adult, the new guidelines note.

What *does* matter: proper form. If you're new to strength training, it's not a bad idea to book a few sessions with a personal trainer to hone your technique. That will help you maximize your workouts and prevent injuries.

Just don't push aside your walking, biking, jogging, or swimming habit in the name of maxxing your muscles.

Aerobic fitness is as important as ever. Aim for 2½ hours a week at a moderate intensity or 1 hour and 15 minutes at a vigorous intensity.

The bottom line: Work each muscle group at least twice a week with whatever form of strength training you enjoy.

3 Fibermaxxing? Do it right.

Social media influencers tout fibermaxxing for heart health, gut health, and more. One TikToker's take: "Fibermaxxing might be the most genius American diet fad ever."

They have a point. More than 9 out of 10 US adults fall short of fiber targets...and they miss by a mile.

The average man eats 18 grams of fiber a day, and the average woman eats 15 grams. The Daily Value is 28 grams. (That's based on getting at least 14 grams of fiber for every 1,000 calories you eat.)

To close the fiber gap, maxxers tend to promote recipes that contain naturally fiber-rich whole foods like chia seeds, beans, lentils, peas, and oats, as well as fiber superstar fruits and vegetables like Brussels sprouts, kiwis, pears, and berries.

That's great advice. If you follow it, you'll get most of your fiber from a variety of plants, each with its own mix of fibers.

And that matters because fiber isn't a single thing. To max out its health benefits, you need to play the field (see Mar./Apr. 2025, p. 3).

You also need to look at more than just the total amount of fiber in a food. That's because many manufacturers pad their fiber numbers by adding processed or synthetic fibers like chicory root (aka inulin) or soluble corn fiber. Just a few examples: Siggi's Fruit & Fiber yogurt, Fiber One Soft Baked chocolate fudge brownies, refrigerated Olipop prebiotic soda, Halo Top ice cream, and many brands of fiber gummies.

(The FDA allows inulin and soluble corn fiber to be included in the "fiber" number on Nutrition Facts labels because they can boost calcium absorption, not for the regularity or cholesterol-lowering benefits you'd expect from plant foods or psyllium fiber.[2])

Some ads even try to make you think that processed fibers belong in your "maxxing" program.

Photo: Jordi Mora - stock.adobe.com.

"Fibermaxxx your latte," says an Instagram ad for Poca, a brand of sugar-free flavored syrups that contain chicory root fiber.

What the ad doesn't tell you: Some digestive systems are sensitive to chicory, inulin, or other processed fibers, which can cause gas and bloating.

Digestive discomfort can also come from fibermaxxing with naturally fiber-rich foods...if you overdo them. The solution: Go slow. Not eating any beans yet? Add a half-cup once a day, not a cup at lunch and a cup at dinner.

If you're not sure where to start, consider a fiber audit. Log everything you eat for a week in a free phone app like Cronometer. That will tell you whether you're getting enough fiber and can help you track changes over time.

The bottom line: Most of us could use more fiber from healthy plant foods. Just don't max out too quickly. Go to cspi.org/fiberfoods to see how much fiber is in the foods you eat most often.

4 Wellness maxxing? Injections or IVs are risky.

"'It's a peptide wild west': how RFK Jr is clearing way for a market of untested drugs," ran the *Guardian* headline in July.

Peptides—short chains of amino acids that give specific instructions to the cells they bind to—took the wellness spotlight this year. Influencer posts promising that the largely unregulated group of injectables could boost muscle growth, melt away fat, and give your skin a natural glow flooded social media.

Too bad there's no evidence from randomized trials to support the craze (see Jul./Aug. 2026, p. 10). Even more troubling: People who take the understudied compounds could face serious safety risks like harmful immune responses, chest tightening, headaches, and diarrhea, as the FDA has noted.[3]

But none of that stopped Health Secretary Kennedy from declaring that he's "a big fan" of the injectables. So it came as no surprise when he reconfigured an advisory panel that would vote on whether to allow compounding pharmacies to prepare seven different peptides, stacking it with members who have financial ties to the peptide industry.

CSPI president Peter Lurie told the advisory panel at its July meeting that there is far too little evidence on the safety or effectiveness of the peptides to approve them for compounding. The FDA's own scientists agreed.

Nevertheless, the panel greenlit six of the seven peptides. That doesn't mean they are FDA-approved. Before they can legally be compounded, they have to pass through a long rulemaking process. (And, of course, legal doesn't necessarily mean safe.) Stay tuned.

America is not just injecting peptides. IV hydration therapy has taken the medspa near you by storm. Purveyors are happy to pump you full of intravenous compounds they claim can do everything from cure a hangover to slow aging.

Unsurprisingly, no good evidence supports any of that. (IV therapy can help people with known nutrient deficiencies or specific medical conditions, but those treatments will be given by a healthcare provider, not a medspa.)

Also unsurprisingly, no one is minding the store. In a 2025 paper co-authored by Lurie, researchers found that no state had enacted legislation to regulate IV hydration

Commonsense maxxing? Now *that* sounds good.



Social media lets you connect with old friends, watch cute animal videos, and find new recipes. But it's also a hotbed of poorly vetted information and conspiracy theories.

That's by design. "The algorithms used by social media platforms are largely shaped by emotions like rage and fear and play to our political leanings," says Timothy Caulfield, research director of the Health Law Institute at the University of Alberta in Canada.

And that keeps us "doomscrolling."

Here's what can help create a healthier relationship with your digital environment:

■ **Take a beat.** Before you share a post, pause. Verify the accuracy...and go beyond the headline. "That's even more important if the headline makes you feel enraged or self-righteous," says Caulfield. Fact-checking websites like Snopes.com or Google's Fact Check Explorer can help.

■ **Check health expertise.** For health information, ask yourself whether the sharer is an expert in a specific area. And keep in mind that being a doctor doesn't mean someone is an expert in, say, nutrition or a medical specialty outside of their own.

■ **Follow science communicators.** You're looking for people who clearly describe nuance and uncertainty in the evidence. "Overly complex language and what I call science-y word salad should give you pause," says Caulfield. "That suggests they're trying to confuse or manipulate you."

■ **Sales pitches are a red flag.** Be suspicious of people trying to sell you supplements or products that promise extreme—and unlikely—health outcomes.

Photo: Ilona - stock.adobe.com.

facilities (though Texas has since passed a law).[4]

And you can't count on medspas or wellness centers—or the companies that supply their peptides and other injectables—to keep you safe.

In July, dozens of people became sick and three were hospitalized after receiving IV glutathione, a popular antioxidant peptide, at medspas in at least four states. One of the three became critically ill after suffering shock and abnormal blood clotting.

Turns out the compounding pharmacies had prepared the injectables using dietary-supplement-grade glutathione meant for oral tablets or capsules. As a result, the medspa customers received IVs contaminated with bacterial endotoxins, which led to chills, fever, nausea, vomiting, and low blood pressure.

Also in July, a New York woman died after receiving an IV infusion at a wellness center. Air entered her bloodstream through the IV line and traveled to her heart, causing a fatal embolism that medical examiners have ruled a homicide.

The bottom line: Most injectables—peptides that you buy online or IVs that you get at a medspa or wellness center—are poorly regulated, lack evidence to support their use, and pose real health risks. Skip them.

[1] *Med. Sci. Sports Exerc.* 58: 851, 2026.
[2] fda.gov/media/113659/download.
[3] fda.gov/media/185641/download.
[4] *JAMA Intern. Med.* 185: 1455, 2025.

What matters more than maxxing

Even when nutrition advice for "maxxing" or optimizing is sound, it's often akin to a drop of water. These 6 evidence-backed basics are more like buckets.

1. PUT PLANTS FIRST

This one's a no-brainer. To put a steady diet of plants on autopilot, have a piece of fruit with breakfast, fill half your plate or bowl with vegetables at lunch and dinner, and reach for fruit at snack time.

2. FIND THE FIBER HEAVY HITTERS

Most people don't eat enough fruits and vegetables to rely on their fiber alone, so you've got to reach for whole grains or legumes a few times a day.

Most whole grains like whole wheat, barley, rye, teff, and quinoa will get you 3 to 5 grams of fiber per serving (exception: brown rice has just 2 grams). Most beans and lentils deliver 5 to 8 grams.

3. PICK A HEALTHY PROTEIN AT MEALTIME

The add-protein-to-everything obsession misses the point. Just try to work a serving of a protein-rich food like soy, chicken, seafood, or low-fat cottage cheese or Greek yogurt into every meal. For healthy plant foods that offer a smaller dose of protein—like beans, lentils, peas, nuts, or seeds—eat a larger serving or pair two together.

4. BE A HEART-HEALTHY COOK

Think substitute, not subtract. Limit unhealthy saturated fat from beef, pork, coconut milk, cream, butter, and full-fat cheese by shifting to healthy, largely unsaturated fats that still add richness.

Put pesto on your pasta instead of alfredo, toss toasted nuts on your salad instead of cheese, or spread avocado on your bagel instead of cream cheese.



For great-tasting lower-sodium soup, make your own. Find dozens of ideas at cspi.org/recipes.

5. WATCH WHAT YOU DRINK

Your safest bet is to minimize alcohol, if you drink at all. (Even moderate drinking is linked to an increased risk of some cancers.) For soda, juice, tea, and coffee, choose unsweetened or calorie-free drinks over sugary ones. You can't beat water.

6. SLASH SODIUM WHERE IT COUNTS

To keep a lid on your blood pressure without tracking every milligram of sodium, make simple swaps (see p. 21) and target salt-laden foods like canned soup (make your own).

And keep in mind that most restaurant food packs a salty wallop. So pump up the volume by ordering a side salad or a side of vegetables. That way, you can take home leftovers and have less sodium in one go.

Photo: Kate Sherwood - CSPI.



Does the dose make the poison?

A CONSUMER'S GUIDE TO TOXICOLOGY

There are thousands of chemicals in our foods and food packages. Getting a handle on them can feel like learning a new language. Without a solid foundation, it's tough to know what matters. How are they tested for safety? Why are some banned in Europe but not the US? CSPI's very own toxicologist walks us through it.



THOMAS GALLIGAN is Principal Scientist for Food Additives and Supplements at CSPI. Galligan works to improve the regulation of food chemicals and keep unsafe ones out of the food supply. He spoke with *Nutrition Action*'s Caitlin Dow.

HAZARD VERSUS RISK

What's the difference between a hazard and a risk?

TG: The two terms are often conflated, but they're distinct. Hazard is the inherent ability of something to cause harm, whereas risk is the likelihood that it will actually harm you.

Imagine a chef's knife with its sharp blade. That has the ability to hurt you. It's a hazard. But if you put the knife in a locked drawer, it poses no risk.

If you take that chef's knife out of the drawer and start cutting vegetables with it, the risk goes up. Now put it in your non-dominant hand, turn the lights off, and start cutting vegetables. You are almost guaranteed to be hurt by it.

So a hazard only poses a risk if there's some degree of exposure.

Is exposure the only thing that matters?

TG: No. In the case of the knife, its properties also matter. If the chef's knife were a butter knife, even in your non-dominant hand during an earthquake in the dark, it's probably not going to hurt you.

The same idea applies to chemicals. At CSPI, we focus more on the chef's knives than the butter knives of the food-chemical world. We want policymakers to enact regulations that ensure that those chef's knives don't hurt us.



Confused by hazard and risk? A hazard—like a chef's knife—only poses a risk if you're exposed to it.

Illustration: betka82 - stock.adobe.com. Photo: matartion - stock.adobe.com (bottom).

ASSESSING HAZARD & RISK

How do scientists determine if a chemical is dangerous?

TG: Risk assessment is a multi-step process. The first step is to identify and characterize the hazard, which means understanding how much a chemical can harm us.

To do that, the FDA and other regulators rely heavily on animal studies. But they bolster those findings with studies in cells and, more recently, with computer modeling and AI tools.

The next step is to determine exposure, then bring that together with hazard in order to understand risk.

What about studies in people?

TG: Human trials are rarely used to understand chemical safety.

For chemicals that are already in the food supply or the environment, scientists use observational studies to see whether exposures to hazardous chemicals are associated with risk in the real world.

But that data often isn't available, and isolating the effect of a chemical exposure is tricky.

What are the advantages of studies conducted in cells?

TG: They are very quick, low-cost, and efficient compared to animal or human testing. And if you're using human cells, the results can be directly relevant to humans.

What are the drawbacks?

TG: Humans aren't just cells in a test tube in a lab. We're complex organisms that are made of tissues and organs that interact with one another and with the real world. A cell experiment can't fully replicate that.

Why do researchers test chemicals in animals?

TG: The most direct way to determine the risk of a chemical to people is to study people, but that's impractical and could be unethical.

The average lifespan of humans is in the mid-70s. So doing a lifetime exposure study is out of the question.

And if you think a chemical might cause harm to people, research institutions rightly won't let you expose them to it.

At the moment, animal studies are the next best thing.

Why?

TG: Most studies use rats or mice, mammals with organs and physiological processes similar to humans.

For example, the liver may break down a chemical and detoxify it, the GI system excretes it, and tissues that are damaged can sometimes repair themselves. Testing in animals allows all of those processes—which are often similar in humans—to play out so we can see what effects emerge across the entire body.

So if you add a chemical to a rat's food, it's a decent analog for humans who eat that chemical in their food.

But lab rats aren't an exact mirror of humans, right?

TG: That's right. Humans live in a much more complex world. We eat different things, have different jobs. You live in DC. I live in Oregon. Our exposures are different. And all of that is happening against a backdrop of genetic diversity with more than 8 billion of us on the planet.

Animal studies are typically run with a few hundred genetically identical animals that are living in a highly controlled environment, eating the same diet.



Studies in lab animals can help identify risky food chemicals, but the animals' controlled world doesn't mirror the complexity of ours.

Can we really apply the results in animals to humans?

TG: We use animals as a red flag to identify possible harm in humans. To ensure that we're being protective, the baseline assumption is that if it causes harm in an animal, it will also cause harm in people unless clearly demonstrated otherwise.

Of course, rodents aren't little people and humans aren't big rats. There are differences between species that can influence how we respond to exposure to a chemical.

Sometimes humans are more sensitive than rats and mice, other times we're less sensitive or not sensitive at all.

Why do studies often give animals huge doses of a chemical?

TG: High doses are used to reveal hazards and characterize or understand them. A well-run animal study will use a wide range of doses, including high doses as well as doses that mimic the expected human exposure level.

High doses help ensure that we'll get a sense for which organs are affected. They help detect rare effects that might only show up in one out of a million animals at lower doses. And they compensate for the shorter lifespan compared to humans.

By using a broad range of doses, you can understand what's called the "dose response." If you expose the animal to more of the chemical, does the response go up? That's important in understanding the risk to humans.

Regulators use that data to estimate a safe dose in humans. They typically divide the safe dose in animals by 10 to account for the possibility that people might be 10 times more sensitive to the chemical than animals. Then they usually divide it by 10 again to account for the fact that some people might be more sensitive than others.

Bottom line, animal studies are relevant, but that doesn't mean they're perfect.

Do animal studies ever miss an effect?

TG: Yes. Synthetic food dyes are a good example. We know from human studies that these dyes can cause or worsen behavioral problems in some children. But the animal studies that the FDA relied on to approve the dyes didn't evaluate behavior.

On top of that, the FDA often reviews studies that are performed by the company that's seeking approval for a chemical, so there's an inherent conflict of interest.

Photo: Kurashova - stock.adobe.com.

That's why it's important to design studies to be broad, both in terms of doses and outcomes, and for the FDA to consider studies—when they exist—that haven't been designed by the chemical maker.

Is the field moving away from animal studies?

TG: Yes. There's been a growing push to do that, given the limitations of animal-based toxicology as well as the broader interest in reducing the use of animals in research for ethical reasons.

What's the alternative?

TG: They're called new approach methodologies, or NAMs. They combine cell-based studies and computer methods for assessing toxicology.

The idea is to go beyond the basic cell methods and do things like build an organ on what are called lab-on-a-chip devices. You have all the trappings of a liver on a single chip, so you can test how the whole liver might respond to a toxic chemical.

The goal is to make NAMs sophisticated enough to erase the need for animal studies.

Is that possible?

TG: It's the goal of the chemical industry as well as a number of regulatory agencies. The EPA, for example, has said that it wants to move beyond mammals in research by 2035.

While we're moving toward that goal, there's a long way to go before we get there. Right now, NAMs are nowhere near being able to replicate the cross-talk, if you will, between the organ systems of a whole body. If the transition to NAMs happens too quickly, we'll know less about the potential harms of a chemical. That may be why the chemical industry is so interested in NAMs.



Many factors—like life stage—affect susceptibility to toxic chemicals. Young children are typically more vulnerable than adults.

THE DOSE MAKES THE POISON?

What does the phrase "the dose makes the poison" mean?

TG: This is one of the core principles of toxicology. It's the idea that anything is toxic if you're exposed to a high enough dose. Or, looking at it the other way, a safe dose can theoretically be found for any chemical.

Is that true?

TG: It's a bit of an oversimplification. Determining a safe dose is complex and fraught with uncertainty.

It depends on the quality of evidence that you have for both hazard and exposure.

Have we accounted for the fact that some people may be more susceptible to a chemical than others? Are people exposed to other chemicals at the same time that could affect their response to the chemical in question?

Those questions and many others need to be answered, and that requires technical expertise and some degree of subjective decision-making.

So I think that when the average person hears "the dose makes the poison," they don't understand that nuance and complexity. They may believe that determining a safe dose is a straightforward, simple process.

Are there cases when the dose *doesn't* make the poison?

TG: Yes. There are types of chemicals that can theoretically cause harm at any dose.

For example, any amount of a genotoxic carcinogen—genotoxic means that it damages DNA—can cause cancer. Even a single molecule of a genotoxic carcinogen can interact with a single strand of DNA, cause a mutation, and theoretically give rise to cancer.

But even for those chemicals, it's generally true that as exposure increases, cancer risk also probably increases. But there's no amount that isn't a poison.

Does the harm always increase as the dose increases?

TG: Not always. For example, in animal studies of the plastic additive bisphenol A, or BPA, researchers have seen that low doses increased the risk of some negative outcomes like tumor growth that weren't seen at higher doses.

Finding a safe dose is difficult when you're dealing with chemicals that don't respond in a nice linear way.

And individuals vary?

TG: Right. A safety threshold will not be universal across the entire human population. So the dose that's safe for you may not be the dose that's safe for me. A person can be genetically, environmentally, or developmentally predisposed to be more susceptible, or less susceptible, to a toxic chemical.

Life stage also matters. Babies developing in the womb, infants, and young children are generally more susceptible to toxic chemicals than adults. Early-life exposure could cause an immediate effect that lasts forever—like the fact that lead can cause permanent brain damage in children.

Photo: M-image - stock.adobe.com

Or exposure could result in a disease later in life, like heart disease or cancer.

And the reality is that some pack-a-day smokers do—and others don't—get lung cancer. It's not just the dose that determines the outcome.

BANNING RISKY CHEMICALS

Many food chemicals are banned in Europe but not in the US. Is that a useful comparison?

TG: It can be helpful to look at what other authorities have said about whether a chemical is safe or how we should assess safety.

The EU is an interesting counterpoint to the US. One reason is that the European Food Safety Authority is required to consider what's called the precautionary principle. If EFSA has reason to believe that a chemical could pose a significant risk but there's uncertainty or a lack of data to assess that risk, it errs toward caution. It doesn't allow the chemical in food.

The US doesn't explicitly follow the precautionary principle, but we have a rule that requires that no substance, in any amount, can be intentionally added to food if it has been shown to cause cancer in people or animals.

What's an example of the precautionary principle?

TG: In 2021, the EU banned the color additive titanium dioxide because EFSA couldn't rule out genotoxicity.

CSPI recommends avoiding titanium dioxide—which is still used in foods sold in the US—for the same reason.

What's the FDA's approach?

TG: The FDA basically treats every chemical as safe until it's proven to be harmful. I think that's backwards. And I think a lot of researchers and the public agree. That's probably why we're seeing so many calls for change from consumers.

What's the right approach? Let's thoroughly test a chemical. Let's fully convince ourselves that it's safe before anyone eats it.

Should the FDA follow EFSA?

TG: No. It's not infallible. For example, both the FDA and EFSA still consider the sweetener aspartame to be safe, even though there are —at a minimum—valid questions about its safety and the World Health Organization considers it "possibly carcinogenic." CSPI has urged the FDA to ban aspartame.

I'd argue that EFSA didn't sufficiently employ the precautionary approach in the case of aspartame.

And, for some reason, the artificial sweetener cyclamate is still legal in the EU, even though the FDA banned it in 1970 after animal studies suggested that it causes cancer.



To see our safety ratings on more than 150 food additives, check out chemicalcuisine.org.

MANAGING TOXIC CHEMICALS IN YOUR LIFE

How can people figure out what's safe?

TG: They shouldn't have to. A strong federal government should be ensuring that food additives are safe so people don't have to think about them.

Unfortunately, consumers are currently bearing that unfair burden.

How should they manage it?

TG: First, recognize that chemical safety isn't binary. It's not "safe" or "avoid it all the time, and if you don't, you're going to get cancer."

I want people to find practices that fit their lifestyle that are realistic and sustainable.

It's impossible to fully eliminate your exposure to many chemicals. But taking small steps that feel within reach is still a good idea.

Don't microwave your food in plastic. Consume less processed meat and alcohol. To reduce your exposure to mercury, swap your albacore tuna for light tuna or, even better, salmon.

These types of things are achievable for many of us and don't require a PhD in toxicology or even that you review ingredient lists.

Where can people get reliable information?

TG: If they're reading this, they're already part way there. In addition to publishing *Nutrition Action*, CSPI has a database called Chemical Cuisine, which houses our food additive safety ratings.

But I'd also encourage people to stay in touch with CSPI, go to cspi.org/actionalerts to sign up for our emails, and write to their lawmakers when we identify instances where that could make a difference.

In the end, fixing the government's broken oversight system is what will solve the problem for everybody.

Photo: cspi.org.

The Healthy Cook



Sides that shine

These holiday-worthy recipes are more than side dishes. Their bright colors, tangy pops of fruit, and bold flavors might just steal the show. Bonus: None take up any valuable oven space.

DAZZLING FRUITS & GREENS SALAD

I adore this salad's bright bits of fruit, crisp greens, and tart-sweet vinaigrette. No pomegranate molasses? Use bottled balsamic glaze instead. If you're not serving the salad with a feast, add some walnuts and avocado for crunch and richness.

- 3 Tbs. red wine vinegar
- 2 Tbs. pomegranate molasses
- 1 Tbs. fresh lemon juice
- 1 Tbs. Dijon mustard
- ½ tsp. kosher salt
- 5 Tbs. extra-virgin olive oil
- 8 cups salad greens
- 1 cup raspberries
- 1 green kiwi, peeled and cut into small wedges
- ¼ cup microgreens

1. Make the vinaigrette: In a medium bowl, whisk together the vinegar, pomegranate molasses, lemon juice, mustard, and salt. Slowly drizzle in the olive oil while whisking continuously until all the oil is incorporated and an emulsion forms. Transfer to a small pitcher.
2. Arrange the salad greens in a serving bowl or on a platter. Top with the raspberries, kiwi, and microgreens. Serve with the vinaigrette.

TIME: 10 MINUTES | SERVES 6

PER SERVING (2¼ cups + 1 Tbs. vinaigrette): calories 150 | total fat 12 g | sat fat 1.5 g | carbs 10 g | fiber 3 g | total sugars 5 g | added sugars 2 g | protein 2 g | sodium 240 mg

Photo: Kate Sherwood - CSPI

PAN-ROASTED BRUSSELS SPROUTS WITH ORANGE MAPLE GLAZE

This dish pops thanks to the vivid color and tart tang of blood oranges. If you don't have any of the beauties on hand, substitute the juice of 1 navel orange plus 1 Tbs. lemon juice. Maple syrup is a staple in my family—we're lucky to have cousins who make it in upstate New York—but dark brown sugar would also be delicious.

- 2 blood oranges
- ½ tsp. cornstarch
- 1 Tbs. maple syrup
- 3 Tbs. extra-virgin olive oil
- 1½ lbs. Brussels sprouts, trimmed and halved
- 2 Tbs. reduced-sodium soy sauce
- freshly ground black pepper, to taste

TIME: 20 MINUTES | SERVES 6

PER SERVING (½ cup): calories 130 | total fat 7 g
sat fat 1 g | carbs 15 g | fiber 4 g | total sugars 7 g | added sugars 4 g
protein 4 g | sodium 220 mg



1. Zest 1 orange. Juice both oranges to yield ½ cup of juice.
2. Make the glaze: In a small bowl, whisk together the cornstarch and 1 Tbs. water. Combine in a small pan with the juice, zest, and maple syrup. Bring to a simmer over medium heat until thickened, about 1 minute. Set aside.
3. Add the oil and 2 Tbs. water to a cold large nonstick pan. Place the sprouts cut side down in a single layer. Turn the heat to medium-high and cover the pan. Cook until the sprouts turn bright green and start to brown, about 5 minutes.
4. Uncover the pan and reduce the heat to medium. Continue to cook until just tender, 2–3 minutes. Drizzle in the soy sauce and shake the pan to distribute. Cook until the pan is dry, about 1 minute more.
5. Transfer to a serving dish. Spoon the glaze over the sprouts. Season with the black pepper.

CRANBERRY GINGER CHUTNEY

I love raw ginger's spicy zing, so I add mine after the chutney has cooled. Prefer a milder chutney? Ginger mellows when you cook it, so add yours with the other ingredients in step 1. Got any leftover chutney? It freezes well...and it's great served with Swedish meatballs.

- 2 navel oranges
- ¼ cup sugar
- 12 oz. fresh or frozen cranberries
- 2 Tbs. minced or grated ginger, more to taste

TIME: 15 MINUTES | MAKES 2 CUPS

PER SERVING (¼ cup): calories 60 | total fat 0 g
sat fat 0 g | carbs 14 g | fiber 2 g | total sugars 10 g | added sugars 8 g
protein 0 g | sodium 0 mg



1. Zest 1 orange. Juice both oranges. Add enough water to the orange juice to make 1 cup of liquid. Combine the liquid with the zest, sugar, and cranberries in a small pot.
2. Bring to a boil over medium-high heat, stirring to dissolve the sugar. Reduce the heat and let simmer until the chutney thickens slightly and three-quarters of the berries have burst.
3. Transfer to a bowl and let cool to room temperature. Stir in the ginger. Serve at room temperature or cold. Keeps for up to 7 days in the refrigerator.

Photos: Kate Sherwood - CSPI.

APPLE & BLACK LENTIL SALAD

I'd serve this salad cold as a side dish or at room temperature as a main dish. Because the lentils absorb the vinaigrette, dress them as close as possible to serving.

- 3 radishes, thinly sliced
- 1 Tbs. + 2 Tbs. cider vinegar
- 2 Tbs. whole-grain mustard
- ½ tsp. kosher salt
- ½ tsp. freshly ground black pepper
- 1 tsp. fresh thyme leaves
- 3 Tbs. extra-virgin olive oil
- 2 crisp apples, diced (any kind, or a mix of colors)
- 3 cups cooked cold black lentils
- ½ cup crumbled goat cheese

TIME: 20 MINUTES | SERVES 8

PER SERVING (½ cup): calories 220 | total fat 8 g
sat fat 2.5 g | carbs 26 g | fiber 11 g | total sugars 5 g | added sugars 0 g
protein 10 g | sodium 240 mg



1. In a small bowl, toss the radishes in 1 Tbs. vinegar.
2. Make the vinaigrette: In a large bowl, whisk together the remaining 2 Tbs. vinegar with the mustard, salt, pepper, thyme, and oil. Remove 1 Tbs. of the vinaigrette to a medium bowl and toss with the apples to maintain their color.
3. When ready to serve, toss the lentils and about three-quarters of the apples in the large bowl with the vinaigrette. Divide the mixture into serving bowls.
4. Top with the remaining apples, the radishes, and the cheese.

SPICED SWEET POTATO & BUTTERNUT MASH

To unlock the flavor in dry spices like allspice, paprika, pepper, and nutmeg, heat them in oil. I often do that on the stovetop, where I can keep a close eye on things. Spices can burn—and develop an acrid smell and taste—in no time. Let yours go too far? Wipe out the pan and start again.

- 1½ lbs. peeled butternut chunks
- 1½ lbs. sweet potato, peeled and cut into chunks
- 1 Tbs. extra-virgin olive oil
- 1 tsp. ground allspice
- 1 tsp. smoked paprika
- ½ tsp. ground nutmeg
- ½ tsp. freshly ground black pepper
- ½ tsp. kosher salt (optional)
- ¼ cup toasted pumpkin seeds

TIME: 20 MINUTES | SERVES 6

PER SERVING (¾ cup): calories 180 | total fat 5 g
sat fat 1 g | carbs 32 g | fiber 6 g | total sugars 6 g | added sugars 0 g
protein 4 g | sodium 210 mg



1. In a large microwave-safe dish with the lid on, steam the butternut and sweet potato chunks on high until very tender, 10–12 minutes, stirring about halfway through.
2. Make the spice oil: In a small pan, heat the oil, allspice, paprika, nutmeg, and pepper over medium heat until fragrant, 1–2 minutes, stirring occasionally.
3. Mash the butternut and potatoes to your desired consistency with a potato masher or purée with an immersion blender. Stir in the spice oil and season with the salt (if using) and more black pepper, to taste.
4. Transfer to a serving dish. Top with the pumpkin seeds.

Photos: Kate Sherwood - CSPI.

Quick Studies

BY BONNIE LIEBMAN

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

Breakthrough treatment for pancreatic cancer



A new drug doubled survival times in patients with metastatic pancreatic cancer, who typically live for only 6 to 7 months after diagnosis.

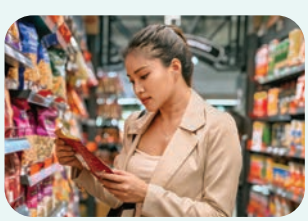
In a trial funded by the drug's manufacturer, researchers randomly assigned 500 people with metastatic pancreatic ductal adenocarcinoma (the most common type) to take either the new drug (daraxonrasib) or chemotherapy. All had previously been treated with chemotherapy, and 92% had cancers with a mutation called *KRAS*, which daraxonrasib targets.

After 1 year, 53% of patients on daraxonrasib—versus 17% of those on chemotherapy—were still alive. Patients who took daraxonrasib typically survived twice as long as those on chemotherapy (13 vs. 7 months).

WHAT TO DO: Ask your doctor about daraxonrasib. Survival times may be even longer for people who start taking the drug earlier. Experts hope it will also help treat lung and colon cancers that are driven by *KRAS* mutations.

N. Engl. J. Med. 395: 325, 400, 2026.

Adulterated avocado oil?



Many avocado oil chips, salad dressings, and mayonnaises aren't made with pure avocado oil.

Researchers analyzed 28 bags of chips, 14 mayos, and 12 bottles of dressing labeled as made with avocado oil (and no other oils). Yet their chemical "fingerprints" suggested that 93% of the chips, 71% of the mayos, and 100% of the dressings also contained oils like soy or canola. Foods labeled as made with only olive oil did far better. Pure olive oil was detected in 100% of the mayos and dressings and 90% of the chips.

WHAT TO DO: Be skeptical of avocado oil claims.

Appl. Food Res. 2026. doi:10.1016/j.afres.2026.102389.

Carotenoids & breast cancer



Do carotenoids like beta-carotene—found largely in orange and green vegetables and fruits—help prevent fatal breast cancer?

Scientists analyzed blood samples taken from 6,099 cancer-free women, then followed them for up to 30 years. Those who started out with the highest blood levels of carotenoids had a 48% lower risk of developing lethal breast cancer than those with the lowest levels.

WHAT TO DO: This study can't prove that carotenoids prevent fatal breast cancer because something else about women who eat carrots, cantaloupe, spinach, and other carotenoid-rich orange or green fruits and vegetables may protect them. But it's one more reason to indulge in your favorites.

Am. J. Clin. Nutr. 2026. doi:10.1016/j.ajcnut.2026.101514.

Plant vs. animal protein face-off



Does protein source matter for building muscle?

Researchers randomly assigned 45 healthy older men to consume:

- 20 grams of animal protein (whey),
- 20 grams of plant protein (soy plus pea), or
- 20 grams of plant protein plus 2 grams of leucine, an amino acid that's found at higher levels in most animal proteins and is thought to jump-start muscle protein synthesis.

Four hours later, muscle protein synthesis hadn't risen in any of the men.

(The study was funded by Danone, and some authors were Danone employees or had received funding from companies that sell protein-rich food ingredients.)

WHAT TO DO: Want to build muscle? Head for the gym.

J. Nutr. 2026. doi:10.1016/j.tjnut.2026.101789.

Photos: stock.adobe.com - Monkey Business (top left), C. Daniels/peopleimages.com (top right), Wasana (middle), ReadyATheEase/peopleimages.com (bottom).

A lumbar belt for low back pain



Got low back pain? A lumbar belt may help.

Researchers randomly assigned 155 adults aged 75 or younger with low back pain that had lasted 1 to 6 months and had no identifiable cause to either wear or not wear an adjustable non-rigid lumbar belt for 4 to 8 hours a day during their daytime activities. (Both groups were advised to remain active, use their usual pain meds, and avoid taking corticosteroids.)

After 12 weeks, 61% of those who wore a belt—versus 41% of those who didn't—reported at least a 30% improvement on a questionnaire about back pain while sitting, standing, walking, lifting, etc. The belt wearers also reported using less pain medication. (The study was funded by the belt's manufacturer.)

WHAT TO DO: This study isn't definitive because it wasn't blinded, but a lumbar belt may be worth a try. (See Jun. 2022, p. 8 for more on back pain.)

JAMA Network Open 9: e2629793, 2026.

Prostate cancer & fats



Do men with non-metastatic prostate cancer who curb saturated fat live longer?

Scientists tracked 4,884 men with prostate cancer that hadn't spread beyond the prostate for 4 to 36 (typically 13) years after their diagnosis.

Those who reported consuming the most saturated fat had a 24% higher risk of dying than those who consumed the least, largely due to a 42% higher risk of dying of cardiovascular disease.

WHAT TO DO: This study can't prove that men with non-metastatic prostate cancer who curb saturated fat will live longer, because something else about them may account for their lower risk. But with so much evidence that saturated fats harm the heart, why not cut back?

JAMA Network Open 9: e2630693, e2630595, 2026.



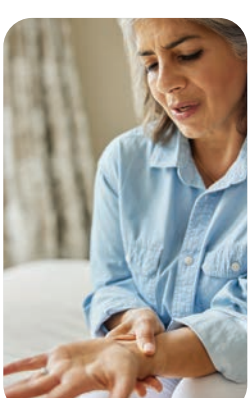
Planetary health diet & gout

Gout is a painful inflammatory arthritis caused by a buildup of uric acid crystals in joints. Could a diet that's good for the planet also lower your gout risk?

Scientists followed 91,479 people in the UK Biobank study, typically for 12 years. Those who reported eating a diet with a high "planetary health" (or EAT-Lancet) score had a 26% lower risk of gout than those with the lowest scores. A planetary health diet was linked to a lower risk even among people with a high genetic risk of gout.

WHAT TO DO: Aim for a diet that's healthy for both you *and* the planet. Fill your plate with vegetables, fruits, beans, lentils, tofu, whole grains, and nuts—with only modest amounts of poultry, dairy, and fish—while minimizing red meat, added sugars, and saturated fats (see Jan./Feb. 2026, p. 3). Something else about people who eat a planetary health diet may explain their lower risk of gout, but why not protect the planet if you can?

J. Nutr. 2026. doi:10.1016/j.tjnut.2026.101824.



A healthy Mediterranean diet & rheumatoid arthritis

Could a healthy Mediterranean diet help prevent rheumatoid arthritis?

Researchers followed 15,847 recent graduates of universities in Spain. Over roughly the next 15 years, those who had a high Mediterranean diet score had a 47 percent lower risk of rheumatoid arthritis than those with a low score.

The Mediterranean diet is rich in vegetables, fruits, beans, fish, and unsaturated fats (like olive oil) and low in meat and dairy foods. A lower meat intake was the only single food linked to a lower risk of rheumatoid arthritis.

WHAT TO DO: This study can't prove that a healthy Mediterranean diet can prevent rheumatoid arthritis because something else about people who consume that diet may curb their risk. (The same applies to cutting back on meat.) But filling most of your plate with vegetables, fruits, beans, fish, and healthy oils may protect your heart, so why not?

Am. J. Clin. Nutr. 2026. doi:10.1016/j.ajcnut.2026.101511.

Photos: stock.adobe.com - Krakenimages.com (top left), Volodymyr (top right), JackF (middle), Daisy Daisy (bottom).



Time to greenlight red light?

CAN RED-LIGHT THERAPY REVERSE SKIN AGING?

BY MADDY BENNETT

Got fine lines, roughness, or uneven skin tone? No problem. Just pick up a red-light mask, panel, laser, or wand. At least that's what some social media influencers would have you believe. But is red-light therapy the fountain of youth?

What does red light do?

Red and near-infrared light "get deeper into skin" than other colors of light, says Michelle Wong, a chemist and beauty science expert.

Red light waves penetrate just below the top layer of skin, while near-infrared light can penetrate an inch or two beneath the skin's surface. Both seem to speed up how quickly deeper skin cells generate energy.

"And more energy means more collagen production," says Debra Jaliman, an assistant clinical professor of dermatology at the Icahn School of Medicine at Mount Sinai. That energy also speeds up tissue repair, reduces inflammation and mild redness, and lessens the appearance of fine lines.

But it may not help with the pesky dark spots and uneven skin tone that too much sun exposure can cause. And at-home red-light devices haven't been well tested in highly sun-damaged skin, says Wong (who has received compensation for promoting several brands of red-light masks).

So if your skin shows signs like yellowing or deep wrinkles, see a dermatologist for better treatment options.

Do at-home devices work?

How's the evidence for at-home red-light therapy devices? Not great.

For starters, the studies are small and often funded by device makers, and they mostly recruit only women. The devices that are tested also differ from study to study, so the research is inconsistent and harder to interpret.

And it's tough to get your hands on clinical trial results because manufacturers tend not to share their data (if they've done a trial at all).

So what can you expect from an at-home device? Certainly not miracles. But your skin may start to look slightly smoother after a few months, according to a large study that tested one particular red-light mask. (The authors didn't reveal what mask they used.)

In that manufacturer-funded trial of 59 middle-aged adults, volunteers were randomly assigned to wear either a combination laser-and-LED mask that delivered red and near-infrared waves or a placebo mask that emitted red light at one-tenth the intensity of the combination mask and no near-infrared waves. Users wore the masks for nine minutes a day, five days a week.

After 12 weeks, 86% of those who wore the combination mask had a slight reduction in crow's feet, versus



Red-light therapy may modestly reduce the appearance of fine lines and mild redness, but it likely won't improve uneven skin tone caused by sun damage.

Photos: stock.adobe.com - Алина Бузунова (top), Марина Демешко (bottom).

17% of those who wore placebo masks.[1]

Other studies seem to agree with that potential anti-wrinkle benefit.

For example, in a trial testing the Skin Light Dior x Lucibel red-light LED mask in 20 middle-aged adults, the volunteers' skin was 50% denser from collagen growth and 20% firmer and more elastic after three months.[2]

But three of the study's co-authors worked for the mask's manufacturer, and the trial was small and lacked a control group, so we can't be sure what the results mean.

Without larger, more rigorous trials, it's hard to say whether the gadgets are worth it.

Are in-office devices better?

Looking for faster results?

"In-office treatments use more powerful devices, so you may see the effects more quickly, and treatments can be customized to your concerns," says Jaliman. (Dermatologists use panels of LEDs that deliver higher doses of light. Some also use lasers, which aren't typically found in at-home devices.)

In a randomized trial that tested LED panels, 76 middle-aged adults received red-light treatments, near-infrared treatments, both, or a placebo treatment on one side of their face twice a week for four weeks.

Twelve weeks later, those in the treatment groups had modestly less roughness, slightly improved skin elasticity, and a moderate reduction in wrinkles on the treated side.[3] Those receiving the placebo treatment showed no improvement.

And in a subgroup of participants, skin biopsies showed that those treated with red and near-infrared light had more, and thicker, collagen. (The trial was partly funded by the LED panel's manufacturer.)

Those results suggest that in-office treatments can work…albeit modestly.

The downside? Seeing a dermatologist for red-light treatments can cost more than $100 per session, and it requires repeat visits. (Some medspas, salons, and wellness centers offer treatments as low as $35 per session, but businesses like those usually lack adequate medical oversight.)

The tab can quickly surpass the price of at-home masks, which cost $400 or more but should last for years.

"At-home masks and wands are convenient and less expensive than in-office visits over time," says Jaliman. But "results tend to be subtler and require long-term use."



In-office red-light devices are more powerful than typical at-home devices and may deliver results more quickly.

Is red-light therapy safe?

Red-light therapy appears to be safe for most adults, at least over the short term. That said, treatments can pose some risks.

For example, "the light may irritate sensitive eyes with prolonged exposure," says Jaliman. "So eye protection is important, especially with near-infrared devices." Not all at-home devices come with eye coverings. Choose one that does, or buy your own.

And don't use an at-home device longer than the instructions recommend. "Overuse can lead to irritation or dryness, particularly in sensitive skin," says Jaliman. Pain, redness, swelling, and blistering are also possible.

Is long-term use safe? We don't know yet. Red and near-infrared light don't seem to cause the damage that ultraviolet light does, but skin cancer is still a theoretical risk, notes Wong.

One final caution: Red-light therapy may not be for you at all if you have:

- **Skin prone to discoloration.** If you have darker skin or a history of dark spots that took a long time to fade, red-light therapy could backfire, causing irritation that can lead to discoloration, says Wong. If that's you, opt for medically supervised treatments or skip red-light therapy.
- **Sun-sensitive skin.** "People who take medications that increase their skin's sensitivity to light may not be good candidates," says Jaliman.

Many drugs can make you sun sensitive. Commonly prescribed ones include antibiotics like doxycycline, retinoids for wrinkles and acne like tretinoin or isotretinoin, and the antirheumatic drug hydroxychloroquine.

People with lupus or other health conditions that can make their skin more sensitive to light should also avoid red-light therapy.

The bottom line

Red-light therapy doesn't live up to its hype. It isn't right for everyone, it hasn't been proven safe over the long term, and while it may modestly improve the appearance of your skin, it can't outshine the basics: sunscreen and a good topical anti-aging skincare regimen (see Sept./Oct. 2026, p. 10).

[1] *Medicine* 104: e41596, 2025.
[2] *Skin Res. Technol.* 29: e13391, 2023.
[3] *J. Photochem. Photobiol. B* 88: 51, 2007.

Photo: Space_Cat - stock.adobe.com.



Balancing act

HOW TO THINK ABOUT YOUR HORMONE HEALTH

BY MADDY BENNETT

Women's health gurus want you to "balance" your hormones. Their latest obsession? "Cycle syncing"—harmonizing your diet and exercise routine with your monthly cycle to cure your "hormone imbalance." But the online wellness crowd gets hormones all wrong. Here's why...and what really matters.

Can hormones be 'imbalanced'?

Your body makes more than 60 hormones every day. "These chemical messengers are released from one part of the body to tell another part what to do," explains Rashmi Mullur, an endocrinologist and clinical professor of medicine at UCLA.

Normally, "hormones are tightly regulated by the body's signaling systems," she adds.

But they can go haywire when you have health issues like type 1 diabetes, where the body can't make the hormone insulin, or PMOS (formerly called PCOS), where women have insulin resistance and high levels of the hormone testosterone.

In cases like those, the body produces too much or too little of a hormone or can't respond properly to normal hormone levels.

That's called a disorder, and it's very different from an imbalance.

A disorder typically has a known cause and can be diagnosed with testing, notes Mullur. It has predictable consequences, and it requires treatment.

An "imbalance" has no clear definition, which leaves it ripe for wellness-industry exploitation. In fact, modern medicine doesn't even formally recognize the term "hormone imbalance."

Why not?

Hormones fluctuate in predictable patterns over minutes, hours, days, or weeks. But they also respond to what's going on around you—like a tense situation that pumps up your stress hormones.

"Your hormones are constantly fluctuating based on your body's needs," says Mullur.



Got period cramps? Your body's response to normal hormone fluctuations—not a "hormone imbalance"—is likely to blame.

"Those fluctuations keep your body functioning the way it needs to and are not considered imbalances."

In other words, the term "imbalance" doesn't capture how hormones act. It's just a marketing buzzword pretending to be a medical fact, and it's not what's to blame for common health complaints like fatigue, mood swings, or acne.

But our *normal* hormonal ebbs and flows can be the source of symptoms that affect how we feel. For many people—especially women—that's exactly what happens.

The real hormone connection

Period cramps, hot flashes during menopause, and nausea during pregnancy …those are just some of the symptoms that can accompany shifting hormones.

Consider the hormones that coordinate the menstrual cycle: estrogen and progesterone. It's no wonder that so much content on social media zeroes in on those two, or that many women see their doctors for worries about an imbalance.

"People often associate 'hormonal balance' with women's health issues related to the menstrual cycle or hormone replacement therapy," says Mullur.

For example, some forms of HRT for symptoms of menopause can

Photos: stock.adobe.com - ronstik (top), Malambo/peopleimages.com (bottom)

cause breast pain, a possible sign of too much estrogen exposure. In that case, says Mullur, it may make sense to dial back a patient's dose.

But in a premenopausal woman, recurring breast pain a week before a menstrual period isn't tied to a specific hormone level.

And the common belief that the pain is a sign of an estrogen-progesterone imbalance isn't true, either. (The two hormones naturally flip-flop throughout a typical cycle.)

We still don't know why breast pain, mood changes, fatigue, or other cycle-related symptoms affect some women and not others.

"Even when their hormones are in the normal range, some women still have difficult-to-manage periods," says Mullur.

They may just be more sensitive to the roller coaster of normal hormone *fluctuations*—not specific hormone levels or hormone "imbalances."[1]

For women who are suffering, that can be tough to hear, acknowledges Mullur, who adds that when patients don't meet the criteria for any diagnosable conditions, modern medicine can often only treat symptoms without dealing with their root cause.

Cycle syncing

It's frustrating when doctors can't fix our health woes.

On top of that, "gaslighting and disenfranchisement in medical settings may make women lose trust in the medical system," says Emily Pfender, an assistant professor of communication at the University of Delaware who specializes in women's health. (Pfender has received sponsorships for social media posts from the Wisp Women's Health telehealth platform.)

That breakdown in trust could be fueling a trend called "cycle syncing," says Pfender.



Soup's on? Cycle syncers say warm foods are best for a period, but that's never been tested.

That's a set of dietary and lifestyle rules (sometimes including a costly supplement regimen) that purportedly correct a woman's hormonal imbalances and curb her period and acne problems.

To cycle sync, women modify "what they eat, how they exercise, and how they work" based on which phase of the menstrual cycle they're in, Pfender explains.

The belief is that fluctuating menstrual hormones are so sensitive to the slightest insult (say, eating too much sugar) that women must align their lifestyles with "female biological processes" to maintain optimal hormonal balance, says Pfender.

(Lifestyle matters, but our bodies aren't *that* fragile.)

"Some cycle-syncing content," adds Pfender, "pushes the idea that you've got to get off hormonal birth control" to balance your hormones. (Systemic forms of birth control, like pills and injections, work in part by suppressing cyclical hormonal changes—a big no-no for cycle syncers.)

▸ How, exactly, does one sync their cycle?

To find out, Pfender and her team created a profile for a fictitious 22-year-old on TikTok, then analyzed the top 100 videos that appeared after the fake user searched for "cycle syncing."[2]

The videos' advice wasn't consistent, but a recurring theme was that women should rest, walk, or stretch during their periods, then switch from one exercise routine to another (like cardio to strength training or vice versa) at other points in their cycles.

The videos also recommended eating iron- and magnesium-rich foods and warm foods during periods.

We found other cycle-syncing posts on Instagram that recommended broccoli, carrots, dandelion root, nettle leaf, and vitamin C supplements, among other things, for different phases of the menstrual cycle.

Some of those were touted for their "estrogen-balancing" or "progesterone-supporting" qualities, while others offered no explanation. In any case, not a single post we found cited any evidence to back up its claims.

▸ Does cycle syncing work?

No peer-reviewed studies have tested a diet-and-exercise-based cycle-syncing approach for its impact on women's health, says Pfender.

But researchers have looked into whether exercise performance changes across the menstrual cycle.

Did they find even a kernel of truth in the idea that a woman should tailor her workouts to each menstrual cycle phase?

Not exactly.

While research hasn't tested cycle syncers' claims that different forms of exercise can affect a woman's "hormone balance," dozens of studies have looked at whether cyclical hormone changes affect athletic performance.

Those studies, which measure outcomes like strength, endurance, and speed at different points in the menstrual cycle, have mixed findings.

In one analysis of 78 studies, the evidence didn't support the idea that menstrual cycle phase affects performance—except maybe while having a period.[3] But most of those studies had fewer than 15 volunteers, and some of the

Photo: New Africa - stock.adobe.com.

studies suffered from design flaws like not testing participants' hormone levels to determine which phase they actually were in.

In one higher-quality trial that *did* use hormone testing, 13 women in their 20s rode a stationary bike for a set distance as fast as they could at three points in their menstrual cycle: during or just after their period (when the uterus sheds its lining), near ovulation (when a mature egg is released from the ovary), and during the luteal phase (when the uterine lining thickens).[4]

The only difference: the women rode about 5% faster just before ovulation than during or just after their periods. (That may matter for a competitive cyclist, but it's unlikely to register for an everyday exerciser.)

That makes sense, since "some women report feeling weaker and less motivated to exercise during menstruation," says Pfender. Even so, another high-quality study found no performance differences by phase.[5]

It will take better evidence from larger trials to know whether menstrual cycle phase truly makes a difference.

In the end, it may come down to individual experience.

Of course, none of this means that you should avoid vigorous exercise and only do, say, yoga while on your period.

If you need to rest or exercise at a lower intensity on days when your symptoms are worse, do what's best for you. Just don't assume that scaling back is a must while menstruating…or that intense exercise during that time will wreck your hormones.

And speaking of hormones, what about the claim that cycle syncing can "balance" them? We couldn't find any published studies that have tested it (probably because "hormone balance" isn't a real thing).



Cycle syncing requires women to ditch the pill because it suppresses their monthly cycles.

Pfender's take: "A lot of conversation online makes women believe that their hormones are not balanced, but I don't know what 'hormonal imbalance' means, and I don't think people who use that term know what it means, either."

▸ Is cycle syncing safe?

Cycle syncing might seem harmless—even empowering—but it has risks:

- Trying to "fix" bothersome symptoms on your own could delay the diagnosis or treatment of conditions like endometriosis, PMOS, or uterine fibroids.
- Loading up on supplements could lead to serious problems like allergic reactions, interactions with medications, or exposure to contaminants.
- For women who don't need to slow down while on their periods, avoiding exercise for one week out of every month does their long-term health no favors.
- Rejecting hormonal birth control could lead to an unwanted pregnancy since the method is more effective than, say, using condoms based on when you think you're ovulating. And while hormonal birth control comes with its own low risks of serious outcomes like blood clots, it's necessary for some women who have painful periods, and forgoing that treatment would cause them needless suffering.



Powerlifting while on your period will not "wreck" your hormones.

What actually matters to hormone health?

No supplement or lifestyle hack can "balance" your hormones or treat a hormonal disorder, says Mullur.

But taking care of yourself—both your body and your mind—can help keep your hormones functioning normally.

"If you feel that your hormones are not 'in balance,' the first step is to identify what symptoms are bothersome and what makes you feel well," says Mullur.

For you, that may mean getting enough sleep—at least seven hours a night for most adults.

"Good sleep is what sets us up to have the most normal response to our hormonal demands," says Mullur, who adds that eating on a consistent schedule, getting enough fruits and vegetables, exercising regularly, staying hydrated, and managing stress are also important factors.

Her advice: "Shift your thinking from 'balanced hormones' to 'balanced living.'"

[1] Jen Gunter, *Blood: The Science, Medicine, and Mythology of Menstruation* (Citadel, 2024).
[2] *Perspect. Sex. Reprod. Health* 57: 127, 2025.
[3] *Sports Med.* 50: 1813, 2020.
[4] *Eur. J. Appl. Physiol.* 94: 268, 2005.
[5] *Eur. J. Appl. Physiol.* 109: 659, 2010.

Photos: stock.adobe.com - Thitiporn (top), Real Sports Photos (bottom).



Salt showdown

12 SWAPS TO SAVE ON SODIUM

BY LINDSAY MOYER

A day's worth of sodium is 2,300 milligrams, max, but it's not always easy to stick to that target. These 12 salt swaps between competing foods—some of them may surprise you—can help. *(Take our examples with, um, a grain of salt. They apply to most brands, but you might occasionally run across an outlier. So always check the Nutrition Facts label.)*

Greek yogurt vs. Cottage cheese



WINNER: Greek yogurt. A 4 oz. serving of cottage cheese typically has 300 to 500 milligrams of sodium, but a 6 oz. serving of plain Greek yogurt has a mere 50 to 90 mg.

That's because, unlike cottage cheese, yogurt has no added salt. (No-salt-added cottage cheese exists, but most people find it too bland.) Plus, you'll get at least as much protein and calcium from the yogurt.

Love cottage cheese? Your best bet is a brand that stays below 400 mg of sodium per serving (like Good Culture or Daisy).

Raisin bran vs. Shredded wheat



WINNER: Shredded wheat. Cereal doesn't taste salty, but added salt is common. That explains how a serving of most raisin brans (as well as bran flakes, Wheaties, or Grape-Nuts) fills roughly 10% of your daily sodium allotment.

Not so for shredded wheat (plain or sweetened). While Kellogg's Raisin Bran has 210 milligrams of sodium, a typical shredded wheat cereal has 0 mg...but just as much fiber as the raisin bran (7 grams).

And you can always add your own raisins!

Cheddar vs. Swiss



WINNER: Swiss. The bad news: Cheese is a top source of sodium in the typical American diet. The good news: Swapping Swiss for cheddar can cut the amount you get from cheese. While 1 oz. of cheddar has around 200 milligrams of sodium, Swiss generally has no more than 100 mg.

More ways to cut sodium from cheese: Top salads or bowls with soft goat cheese instead of feta, or make pizza with slices of fresh mozzarella instead of the usual shredded ("low moisture") mozzarella.

Flour tortillas vs. Corn tortillas



WINNER: Corn tortillas. Choosing soft corn over flour can save you hundreds of milligrams of sodium. (It doesn't matter whether the corn tortillas are white, yellow, or blue, or the flour tortillas are whole wheat or white.)

That's because flour tortillas are made with salt and other sodium-containing ingredients. Corn tortillas have neither. That explains why a Mission soft taco flour tortilla has 410 mg of sodium, while the same-size serving of Mission corn tortillas has next to none (just 20 mg).

Photos: stock.adobe.com - Charlize D/peopleimages.com (top), fahrwasser (yogurt), Vladislav Noseek (cottage cheese), jlmcanally (raisin bran), Brent Hofacker (shredded wheat), bit24 (cheddar), Sea Wave (Swiss), Africa Studio (flour tortillas), gossip7 (corn tortillas)

Pico de gallo vs. Jarred salsa





WINNER: Pico de gallo. Refrigerated fresh salsas like pico de gallo or salsa fresca are typically made with chopped tomato, onion, and jalapeño, plus a little salt. In contrast, shelf-stable jars of salsa have a tomato paste or purée base and, usually, more than a little salt.

In every 2 Tbs. serving, you can expect at least 200 milligrams of sodium from most jarred salsas, but only 100 mg or so from most refrigerated ones.

A 100 mg difference may not sound like much, but two tablespoons is a pretty small serving. If you're dipping a pile of chips, the servings (and the sodium) can stack up quickly.

So why not try a refrigerated salsa? They're not just lower in sodium. You might also prefer their taste or texture. Bonus: Pico de gallo makes a great topping for fish, chicken, or tacos.

Bagel vs. English muffin





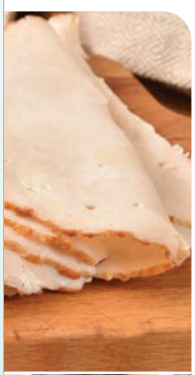
WINNER: English muffin. English muffins and bagels are both mostly flour, water, yeast, and salt. Yet English muffins typically have less sodium than bagels. Why? It's largely a matter of portion size.

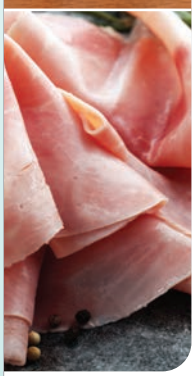
Take Thomas'. Its English muffins weigh 2 oz. and its plain bagels weigh 3 oz. So it's no surprise that the muffins have roughly two-thirds as much sodium as the bagels (240 vs. 390 milligrams). Whole-wheat varieties are similar (230 vs. 320 mg).

If you like eating English muffins *and* saving salt, it pays to compare labels.

A Dave's Killer Bread Rockin' Grains English Muffin has 300 mg of sodium, while a Thomas' 100% Whole Wheat English Muffin has 230 mg and a Food for Life Ezekiel 4:9 Sprouted Grain English Muffin has just 160 mg. (Ezekiel is often found in the freezer case, not the bread aisle.)

Deli turkey vs. Deli ham





WINNER: Deli turkey. Deli turkey generally has less sodium than deli ham, but the turkey doesn't exactly deserve a victory lap.

A serving of Hormel's Natural Choice Oven Roasted Deli Turkey, for example, has less sodium (460 milligrams) than the same-size serving of its Smoked Deli Ham (560 mg) or its Honey Deli Ham (590 mg). But with 20% of a day's sodium limit, the turkey is still pretty high.

Like smoked turkey? You could end up with more sodium than you would with plain roasted. (Hormel's smoked deli turkey has 490 mg.)

Two things to keep in mind: Servings are modest (just 2 oz.), and all deli meats are processed meats, which have been linked to an increased risk of colorectal cancer.

You're better off putting fresh cooked chicken or turkey on your sandwich when you can.

Kosher salt vs. Table salt





WINNER: Kosher salt. This one's tricky. If you're talking volume (teaspoons, say), kosher salt wins. If you're talking weight, it's a tie.

All salt we use for cooking is 40% sodium and 60% chloride. So if you weigh out 1 gram of kosher salt and 1 gram of table salt, they will have the same amount of sodium.

The catch: Kosher salt crystals are larger, which means there's more air between them than between the tiny crystals of table salt. So if you measure out a teaspoon of kosher salt, it will contain less salt than a teaspoon of table salt. And less salt means less sodium.

How much less? A quarter-teaspoon of Morton table salt has 590 milligrams of sodium. The company's Coarse Kosher Salt Flakes have 480 mg. And Diamond Crystal Kosher Salt Flakes have hollow crystals, so you get just 280 mg in ¼ tsp.

Photos: stock.adobe.com - Nelea Reazanteva (pico de gallo), khosrork (Pace), -Marcus- (bagels), itablue (English muffins), MSPhotographic (turkey), beats_ (ham), SRP (kosher salt), Daniel Vincek (table salt).

Regular oats vs. Instant oats





WINNER: Regular (plain) oats. Most flavored instant oatmeal packets come with added salt, even sweet varieties like cinnamon and maple brown sugar. That's how a packet of Quaker Apples & Cinnamon Instant Oatmeal ends up with 160 milligrams of sodium. (Other flavors are in the same ballpark.)

But oats have no sodium. So if you buy your quick-cooking oats plain in a multi-serving tub—Quaker labels theirs "Quick 1-Minute Oats"—you start with 0 mg. After you add your own fruit, nuts, and spices, you may not miss the salt.

Do packets of plain, unsweetened instant oats also have added salt? It depends on the brand. Quaker Original Instant Oatmeal has 75 mg of sodium per packet, but Nature's Path Organic Original Instant Oatmeal packets have none. If you want to skip the salt, check the label.

Pretzels vs. Popcorn





WINNER: Popcorn. Popcorn outmatches pretzels...if you pick your popcorn wisely. (It's easier to find lightly salted popcorn in pre-popped bags than in microwave bags.)

While a 1 oz. serving of most pretzels has 250 to 400 milligrams of sodium, 1 oz. of pre-popped popcorn can have less than 200 mg. Among the brands that make the cut: Skinny Pop Original (130 mg), Smartfood Simply Sea Salt (150 mg), Smartfood Simply White Cheddar (180 mg), and Whole Foods 365 Organic Classic Salted (190 mg).

What makes pretzels so salty? Unlike popcorn (or chips), the sodium isn't just sprinkled on top; it's also baked inside. So even if you buy "unsalted" pretzels—like Snyder's of Hanover Unsalted Mini Pretzels—you still get some sodium (90 mg for a serving of Snyder's). That's true for both crunchy and soft pretzels.

Whole wheat bread vs. Rye bread





WINNER: Whole wheat bread. You'd be surprised by how much sodium we get from bread. That's not because a slice of bread is as salty as, say, a cup of soup or a slice of pizza. It's because we eat so much bread.

And that means finding a lower-sodium bread that you like can make a big difference over time.

Among the saltiest bread varieties: rye and pumpernickel. While brands differ, every 1 oz. slice typically contains about 200 milligrams of sodium.

That's twice as much as whole wheat bread's 100 mg. In a two-slice sandwich, it's a difference of 400 vs. 200 mg...*before* you add any salty fillings like cheese, meat, or condiments.

Another way to cut back on sodium in bread: Lighten your loaf. Thin-sliced varieties have less bread—which means less salt—per slice.

Shrimp vs. Salmon





WINNER: Salmon. Like all meat and seafood, salmon and shrimp with no added salt still have a little naturally occurring sodium: roughly 60 milligrams for salmon and 130 mg for shrimp in a raw 4 oz. serving.

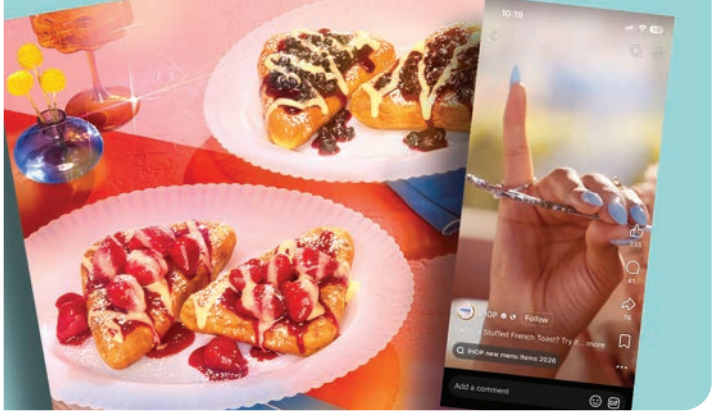
But that's about as high as plain salmon goes. Not so for shrimp.

Many brands add extra salt or sodium-containing additives (like sodium tripolyphosphate) to help retain moisture or color. That means a single serving of shrimp can end up with as much as 500 mg of sodium.

So make sure to check the Nutrition Facts label. That's easy to do on a frozen package, but it won't help when you're standing at the seafood counter. To dodge sodium additives there, ask for "untreated" shrimp. (To avoid the same problem with scallops, check the label or ask the fishmonger for "dry-pack.")

Photos: stock.adobe.com - kuvona (oats), miro (Quaker), Ozgur Coskun (pretzels), Fydorov (popcorn), Moving Moment (whole wheat bread), kuvona (rye bread), New Africa (shrimp), chernikovatv (salmon).





FOOD FIND

Taste the rainbow

Maybe it's the fiber. Maybe it's the eye-popping colors. Maybe it's the refreshing tang.

Whatever the reason, kiwi seems to be having a moment. The best way to enjoy the fun fruit? Play the field.

For a no-fuss treat, you can't go wrong with a smooth-skinned **gold kiwi**. Compared to its green cousin, it has less-tangy flesh, fewer seeds, and a smaller core.

Want something to dazzle in your fruit salad? Pick up a stunning **red kiwi** or two, with their delicate, pink-tinged flesh (thanks to natural plant pigments called anthocyanins).

Looking to fibermaxx? A peeled **green kiwi** has roughly twice as much as a peeled gold. (Red kiwi falls roughly in the middle.)

And speaking of peeling, don't feel like you have to.

The un-fuzzy skin of gold and red kiwis means you can eat them without reaching for a peeler or knife. And though most people peel green kiwis (or cut them in half and spoon out the flesh), the skin is perfectly edible if you don't mind the fuzz. (It's not just edible. It comes with extra fiber and vitamins!)

At roughly 50 calories apiece, any kiwi will give you a healthy dose of folate, fiber, potassium, and vitamin C.

So pick a color. Any color.

FOOD FAIL

The wrong stuff

In many ways, **IHOP's Stuffed French Toast** is nothing new. It debuted in 2003, went off the menu in 2020, and resurfaced this year after becoming the chain's "number one requested item on social media," IHOP president Lawrence Kim told *Nation's Restaurant News* in September.

But one thing *is* new: more stuffing.

"We worked with the supplier and actually created a new proprietary injection process to get more cream into the Stuffed French Toast," Kim boasted.

Surprise! It also gets more cream into *you*.

In fact, the dish's two pieces of battered toast topped with vanilla sauce and glazed strawberries or blueberry topping deliver a full day's supply of saturated fat (21 grams), along with 13+ teaspoons of sugar and more than 900 calories.

You might as well start your day with a stack of three Dunkin' Vanilla Crème Donuts.

An ad campaign depicts dressed-up customers eating Stuffed French Toast with their pinkies up, "celebrating the idea that a little everyday luxury can be found at IHOP," said the press release announcing the dish's return.

And nothing says luxury like white flour, oil, butter, gums (cellulose and carrageenan), and synthetic food dyes (Red 40, Blue 1, Yellow 5, and Yellow 6).

Yum.

QUICK DISH

ROASTED CARROTS & CHIMICHURRI

Roast 1 lb. carrots in 1 Tbs. olive oil at 425°F until tender and browned in spots, 20–30 minutes. In a small food processor, pulse 1 cup flat-leaf parsley, 1 cup cilantro, 1 seeded chopped jalapeño, ¼ cup olive oil, 1½ Tbs. red wine vinegar, 2 Tbs. diced white onion, ¼ tsp. dried oregano, and ¼ tsp. kosher salt. Spoon 4 Tbs. over the carrots and save the rest for another dish. Serves 4.



Photos: Ewelina Thepphaboot - stock.adobe.com (top left), IHOP (top right), Kate Sherwood - CSPI (bottom).