

Nutrition *Action*

SEPTEMBER 2018 \$2.50

HEALTH  LETTER®

CENTER FOR SCIENCE IN THE PUBLIC INTEREST



Much of what you've heard about

PROTEIN

may be wrong

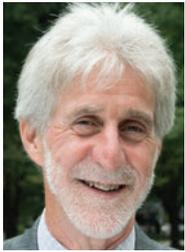
WATER
HOW MUCH?

**Smoothie
SCAMS**

Outbreak!
Lower your risk

M E M O

FOOD SAFETY AT STAKE



We should all be able to bite into a healthy salad, sandwich, or sauté without fear that invisible microbes might send us to the hospital with debilitating—and possibly lethal—food poisoning.

Yet each year, one in six Americans are sickened by contaminated foods or beverages and 3,000 die, according to the [Centers for Disease Control and Prevention](#) (see “Outbreak!” p. 10).

That’s why *Nutrition Action’s* publisher, the Center for Science in the Public Interest, led the fight to pass the 2011 Food Safety Modernization Act (FSMA). That law was intended to protect our food supply, from farm to fork.

But our work is far from done. CSPI is battling to ensure that the public’s health does not take a back seat to industry profits or government foot-dragging.

A few examples:

■ **Track & trace.** This past spring, a multi-state outbreak of *E. coli* infections linked to romaine lettuce sickened more than [200 people](#) (including 96 who ended up in the hospital and five who died).

In May, we and other consumer groups [urged](#) the Food and Drug Administration to make it easier for the agency to quickly trace the cause of food poisoning outbreaks.

With current technology, surely the FDA can swiftly determine where a bag of lettuce was grown and packaged.

■ **Limit poultry line speeds.** If the National Chicken Council had gotten its way, poultry producers would be slaughtering and processing chickens with no limit on line speeds, which typically reach 140 birds per minute as it is. If carcasses zip by much faster, inspectors could miss fecal contamination and diseased animals.

We and others objected, which led the U.S. Department of Agriculture to reject the industry’s proposal.

■ **Swine slaughter free-for-all.** In February, the USDA proposed a plan to shift some responsibility for inspecting pork from trained USDA inspectors to slaughterhouse employ-



Stop testing swine for *E. coli* and *Salmonella*?
Not if we can help it.

ees. (No. Really.)

The USDA also wants to end national testing requirements for *Salmonella* and *E. coli* and lift caps on line speeds in pork slaughterhouses. (You can’t make this stuff up.)

In May, we (and more than 9,000 of you)

urged the USDA to withdraw its “modernization” plan. No word yet.

■ **Naming names.** Under pressure from CSPI and others, the FDA published the names of retailers carrying items (cantaloupe, veggie trays, and dried coconut) that were later recalled following outbreaks. That’s progress!

To be healthy, foods have to be both nutritious *and* safe. We at CSPI are—and will continue to be—your voice in Washington for both.

Peter G. Lurie, MD, MPH, President
[Center for Science in the Public Interest](#)

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

EDITORIAL

Peter G. Lurie, MD, MPH
Executive Editor

Bonnie Liebman, MS
Director of Nutrition

Stephen B. Schmidt
Editor-in-Chief

Lindsay Moyer, MS, RD
Caitlin Dow, PhD
Senior Nutritionists

Kate Sherwood
Culinary Director

Jennifer Urban, BS
Jolene Mafnas, BS
Project Coordinators

Jorge Bach
Art Director

BUSINESS & MARKETING

Jennifer Green-Holmes
Director of Business Operations

Ken Waldmiller
Director of Information Technology

Chris Schmidt
Senior Circulation & Marketing Manager

Debra Brink
Senior Production Manager

SCIENCE ADVISORY BOARD

Kelly D. Brownell, PhD
Duke University

Caldwell B. Esselstyn Jr., MD
Cleveland Clinic Foundation

Stephen Havas, MD, MPH, MS
Northwestern University Medical School

Norman M. Kaplan, MD
*Southwestern Medical Center
University of Texas, Dallas*

JoAnn E. Manson, MD, PhD
Harvard Medical School

Julie Mares, PhD
University of Wisconsin

J. Glenn Morris, Jr., MD, MPH&TM
*Emerging Pathogens Institute
University of Florida*

Susan B. Roberts, PhD
*USDA Human Nutrition Research Center
on Aging, Tufts University*

Frank Sacks, MD
Harvard Medical School

Jeremiah Stamler, MD
Northwestern University Medical School

Regina G. Ziegler, PhD, MPH
National Cancer Institute

Nutrition Action Healthletter (ISSN 0885-7792) is published 10 times a year (monthly except bi-monthly in Jan./Feb. and Jul./Aug.) by the Center for Science in the Public Interest (CSPI), 1220 L Street NW, #300, Washington, DC 20005. Periodicals postage paid at Washington, DC and additional mailing offices.

POSTMASTER: Send address changes to *Nutrition Action Healthletter*, 1220 L St NW, Suite 300, Washington, DC 20005.

SUBSCRIBER SERVICES

The cost of a one-year subscription or gift (10 issues) is \$24; two years are \$42. For bulk subscriptions: please write for details. To change your address: send us your subscriber number and your old and new address. If you don’t want us to exchange your name: send us your name and mailing-label information.

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

E-mail: NutritionAction@customersvc.com

Tel: (866) 293-CSPI (2774)

Internet: myaccount.nutritionaction.com

For more offerings from **Nutrition Action:** store.nutritionaction.com



The contents of NAH are not intended to provide medical advice, which should be obtained from a qualified health professional.

For permission to reuse material, go to copyright.com and search for Nutrition Action.

The use of information from Nutrition Action Healthletter for commercial purposes is prohibited without written permission from CSPI.

©2018 Center for Science in the Public Interest.

Much of what you've heard about

PROTEIN

may be wrong

BY BONNIE LIEBMAN



"Conquer your cravings," says the box of Fiber One Protein Caramel Nut Chewy Bars. "Go strong," says the bag of Special K Protein Bites.

Getting enough protein matters. Eat too little and you'll lose muscle. But does extra protein help you eat less, stay trim, and build muscle? Or are companies just using protein to sell cookies, bars, shakes, and other junk foods?

Extra protein keeps you full?

"Satisfy your hunger," say Kellogg's Special K Shakes.

Does protein keep you satiated—that is, feeling full—for longer?

"The results of human studies are mixed," says Barbara Rolls, professor of nutritional sciences at Penn State.

One reason: many studies don't account for calorie density—that is, how many calories you're getting in, say, a bite of food.

"If you take some fat out and put some protein into foods, people are going to consume fewer calories because you're lowering the calorie density," explains Rolls. That's because, ounce for ounce, fat has more calories than protein.

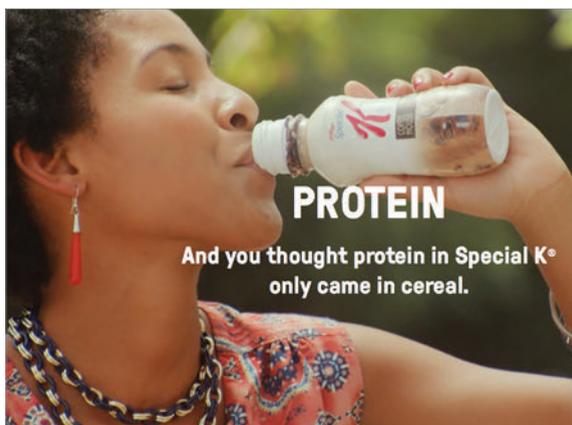
In a study that did take calorie density into account, women ate as much as they wanted of lunch and dinner entrées with 10, 15, 20, 25, or 30 percent of calories from protein, with starches making up the difference.¹ (Fat levels and calorie density didn't vary.)

"We used real food like chicken and shrimp, but everything was finely chopped in casseroles so people couldn't tell that there were differences in protein content," says Rolls.

The results: protein had no impact on how much people ate—or on how hungry or full they felt—throughout the day.

Of course, extra protein may curb appetite after a meal in some studies simply because people expect it to.

"Many people were raised to believe that protein is the center of a meal, and that a meal is more satisfying if it has meat or eggs or fish or legumes or



Protein may only "satisfy your hunger" if you think it does.

another protein source," says Rolls.

But that's a matter of expectations, not protein per se.

"If we're going to develop a high-satiety diet, it's not going to depend on one magic ingredient that you add to a food," says Rolls. "The hope that one simple tweak to your diet will automatically help you manage your food intake is way too simplistic."

Extra protein helps you lose—or not gain—weight?

Conquering cravings and satisfying hunger are ad-speak for a bigger prize: getting or staying trim.

"To many people, protein is good because protein is lean," says Bettina Mittendorfer, professor of medicine and nutritional science at the Washington University School of Medicine in St. Louis.

But even when studies—often funded by the dairy, beef, pork, or egg industry—find that extra protein makes people feel more full, it has little or no impact on their weight.

For example, when researchers gave 151 dieters an extra 45 grams a day of whey protein or soy protein for six months, the dieters felt slightly more full after consuming the whey supplements, but they kept off no more weight than those who got a control powder (maltodextrin) with the same calories.²

Nor is protein weight-loss magic. In Pounds Lost, the largest, longest clinical trial to look, dieters who were randomly assigned to eat higher-protein diets lost no more weight after two years than those assigned to eat normal-protein diets.³

"Over the long term, there's really no good evidence that protein makes you leaner or makes you eat less," says Mittendorfer.

And there's no reason to believe that if you *overeat* protein, it's more likely to end up as muscle, not fat.

In a carefully controlled study, researchers fed 25 healthy young people diets that got 5 (low), 15 (normal), or



Protein Counter

Looking for protein? Also check the calories and serving size.

	Calories	Protein (g)
Chicken or turkey breast, skinless (4 oz.) ¹	180	35
Beef or pork (4 oz.) ¹	280	30
Shrimp (4 oz.)	120	27
Salmon (4 oz.)	160	27
Tempeh (4 oz.)	220	23
Greek yogurt, plain, 0% (6 oz.)	100	17
Morningstar Farms Grillers Prime Veggie Burgers (1)	150	16
Starbucks Nonfat Caffè Latte (grande)	130	13
Cottage cheese, 2% (½ cup)	90	12
Canned tuna, light, in water (2 oz. drained)	50	11
Tofu, extra-firm (4 oz.)	110	11
Sliced deli turkey breast (2 oz.)	60	10
Soy nuts (¼ cup)	100	10
Yogurt, plain, nonfat (6 oz.)	100	10
Edamame, shelled (½ cup)	90	9
Spaghetti (1 cup cooked)	240	9
Milk, nonfat (1 cup)	80	8
Silk Original Soymilk (1 cup)	110	8
Beans (½ cup cooked) ¹	120	8
Quinoa (1 cup cooked)	220	8
Cheddar or Swiss cheese (1 oz.) ¹	110	7
Almond or peanut butter (2 Tbs.) ¹	190	7
Egg, large (1)	70	6
Brie or goat cheese (1 oz.) ¹	90	6
Gardenburger The Original Veggie Burgers (1)	110	5
Nuts (¼ cup) ¹	170	5
Whole wheat bread (1 slice, 1.5 oz.)	80	4
Campbell's Condensed Chicken Noodle Soup (1 cup prepared)	60	3
Frozen yogurt or ice cream (⅔ cup) ¹	160	3
Hummus (2 Tbs.)	70	2
Cream cheese (1 oz.)	100	2
Silk Original Almondmilk or Coconutmilk (1 cup) ¹	70	1

¹ Average. Source: USDA National Nutrient Database for Standard Reference and company information.

25 (high) percent of calories from protein.⁴ All three diets had 40 percent more calories than the participants needed (about 1,000 extra calories a day).

After two months, all three groups had gained the same amount of body fat. The only difference: the low-protein group gained less weight (7 pounds) than the normal-protein (13 pounds) and high-protein (14 pounds) groups.

Why? “Those who didn’t get enough protein lost some muscle,” explains Mittendorfer.

So if you justify that oversized steak as harmless muscle fuel, you’re fooling yourself. “As you gain weight, you mostly put on fat, not muscle,” says Mittendorfer.

Extra protein curbs muscle loss in dieters?

If you’re cutting calories, it makes sense to cut carbs and fat rather than protein. But does *extra* protein keep you from losing muscle as you lose weight?

Researchers randomly assigned 70 middle-aged women with obesity to a:

- **RDA-protein diet** that cut calories and averaged about 80 grams of protein a day, the Recommended Dietary Allowance (0.36 grams for each pound of body weight, which averaged about 215 pounds when the study started),

- **higher-protein diet** that cut the same number of calories but had about 50 percent more protein (115 grams, on average), thanks to extra whey protein, or

- **control group** that didn’t cut calories and had the RDA for protein.

After six months, women on the higher-protein diet had lost less lean body mass (mostly muscle) than the other dieters. But just slightly less.⁵

“The protein supplement blunted the loss of lean mass, but the difference was trivial,” says Mittendorfer.

Dieters who got the higher-protein diet lost a pound less lean body mass.

But that difference was so minimal

that their thigh muscles were no bigger or stronger than the muscles of dieters on the RDA-protein diet.

The surprise: the higher-protein diet had a downside.

In many people with excess weight, the body resists insulin’s attempt to admit blood sugar into cells. Losing weight should make their cells less resistant to insulin. But that didn’t happen in those who got more protein.⁶

“Protein supplementation during weight loss completely eliminated the beneficial effect on muscle insulin resistance,” says Mittendorfer. “It wasn’t just a blunting, but a complete elimination. The extent to which it happened was remarkable.”

And insulin resistance matters.

“Insulin resistance is at the core of many metabolic abnormalities,” she explains, especially type 2 diabetes.

Why might extra protein make cells more resistant to insulin?

“We know that when people consume protein, it causes an increase in insulin secretion,” says Mittendorfer. “If you chronically put out too much insulin, the body may adapt by making you more insulin resistant.”

Once someone has type 2 diabetes, replacing some carbs with protein may help, notes Mittendorfer. “In a person with diabetes, a higher-protein, low-carb diet may help control blood sugar. But that may be simply because it’s low-carb.”

But things are different in people with prediabetes.

“They already have high blood insulin levels to compensate for insulin resistance, so if they pump out more, it’s a vicious cycle that could be detrimental,” says Mittendorfer.

“It’s not proven,” she cautions. “But our study shows that there is a potential concern.”

Extra protein builds muscle?

Does more protein in your food mean more muscle in *you*?

Over the last few years, some experts have recommended higher-than-RDA protein intakes to keep older people from losing muscle as they age.⁷ In part, that’s because studies have reported that a high-protein meal boosts muscle protein synthesis for a few hours.

But many long-term studies have come up empty.

“You can’t simply increase your muscle mass by eating more protein,” says Mittendorfer. “That’s become quite clear.”

The latest evidence: the OPTIMen trial, which targeted people you’d expect extra protein to help—men aged 65 or older who were already eating just enough protein (the RDA) or less.⁸ The men also had below-normal scores on tests of walking speed, stair climbing, or other measures of physical performance.

Researchers randomly assigned 92 of the men to eat either the protein RDA or roughly 60 percent more than the RDA (thanks to supplements of whey and casein, two milk proteins).

After six months, those who got more protein had lost 2½ pounds more body fat. (The average man started the study weighing 200 pounds, including 70 pounds of fat.)

But the extra protein had no impact on the men’s muscle mass, strength, or power. Nor did it improve their ability to walk, climb stairs, or lift weights.

“It’s amazing how little evidence there is around how much protein we need in our diet, especially the value of high-protein intake,” said lead investigator Shalender Bhasin, director of the Research Program in Men’s Health at Brigham and Women’s Hospital in Boston.

“Despite a lack of evidence, experts continue to recommend high-protein intake for older men.”

No one is marketing a carb bar or a fatty cookie. But protein sells. Welcome to high-protein junk food.

Muscle Brownies?



“Filled with enough protein to feed your muscles and chase away hunger, our **Cookies & Cream Muscle Brownie** is the perfect meal replacement or snack,” says

Lenny & Larry’s. A 250-calorie brownie *should* “chase away hunger,” even without its 20 grams of protein.

Since when is a brownie that’s made (mostly) of whey, glycerin, soy protein, margarine, marshmallow nuggets, and cookie pieces a “perfect meal”?



Piece of Cake?

Now you can have your cake and eat it too! **Think Thin Protein Cakes**—they look like Girl Scout Thin Mints without the mint—have 12 grams of protein in each two-cookie package.

And they’ve got only 1 gram of sugar, thanks largely to low-calorie sweeteners (like stevia and monk fruit extract) and sugar alcohols (maltitol or erythritol).

It’s not clear how 170 calories’ worth of cookies can keep you thin. Of course, many people *think* that protein keeps you thin. Maybe that’s why the brand is called Think Thin.

Skinny Who?

“Thanks to our real, indulgent, full flavored desserts, protein never tasted so good,” says the box of **Skinny Cow Protein Sandwiches made with Light Ice Cream**.



Just what you needed: an excuse to indulge in a 170-calorie dessert. You’d get about the same calories in a Klondike Classic Vanilla ice cream sandwich.

How can they call that skinny? Oh, right. It’s just a name.

And yet, Bhasin’s study concluded, “protein intake equal to the RDA was sufficient to maintain lean body mass, muscle strength, and physical function in functionally limited older men.”

Extra protein boosts muscle gains from strength training?

No matter your age, the tried-and-true way to gain muscle is to lift weights or do other strength (resistance) training. Does extra protein boost those gains?

“Despite an abundance of conflicting evidence, the belief persists that protein supplementation during resistance exercise training will enhance muscle mass and strength,” says Blake Rasmussen, professor and chair of the department of nutrition and metabolism at the University of Texas Medical Branch in Galveston.

“Protein supplementation is a several-billion-dollar industry supported by strong dogma and heavily promoted. It’s a solidified notion for the recreational and even the professional athlete.”

However, adds Rasmussen, there is now “an impressive collection of scientific findings indicating otherwise.”

For example, Rasmussen’s team randomly assigned 58 healthy young men to get either whey protein isolate (22 grams a day), a soy-dairy protein blend (22 grams a day), or a placebo (maltodextrin) while they participated in a resistance training program.⁹ After 12 weeks, the protein groups had gained no more strength than those who got no extra protein. Studies on older adults had similar results.¹⁰

Some reviews or meta-analyses—which compile the results of many studies—agree.¹¹ Others don’t. But even some meta-analyses that do report a boost in muscle mass or strength find

only a minimal effect.

“It’s much, much smaller than what is marketed, and only a proportion of the population can actually benefit from it,” says Paul Reidy, a colleague of Rasmussen’s who is now at the University of Utah.

For example, in one recent meta-analysis, extra protein accounted for 11 ounces of extra lean mass and only

lean mass and negligible effects on muscle strength,” says Reidy.

The Big Picture

It’s not that protein doesn’t matter. “Adequate protein is very important,” says Mittendorfer. “If you eat too little, you will lose muscle. But do you need more? No.”

The question is: How much is adequate?

Recent studies suggest that the RDA (0.36 grams of protein for every pound you weigh) is enough. That’s especially true if you’re carrying extra pounds, which are mostly fat, not muscle.

But the final answer isn’t in.

In the meantime, keep in mind that the average woman gets 35 percent more—and the average man about 65 percent more—than the RDA.

“Are most Americans, especially the more obese population, at risk of not eating enough protein?” asks Mittendorfer. “Absolutely not.” (Exception: 19 percent of women and 13 percent of men over age 70 get below the RDA.¹³ To see how much is in some popular foods, check our “Protein Counter” on p. 4.)

And it’s far too early to say—based on Mittendorfer’s one study—that all adults

should cut back on protein to curb insulin resistance.

“There’s a potential risk,” she says, “but it’s not a given.”

Instead, aim for a healthy diet (see “The Bottom Line”). And don’t be tempted by high-protein cookies and ice cream.

“It’s a waste of money to buy anything that’s protein enriched,” says Mittendor-

Resist It or Lose It



Want to keep your muscles strong? Do resistance exercise at least twice a week, says the Centers for Disease Control and Prevention.

A few examples:

- lifting weights
- using resistance bands
- doing push-ups, sit-ups, and other exercises that use your body weight for resistance.

Repeat each exercise until you can’t do it again, and try for at least one set (8 to 12 repetitions). If you can do an exercise more than 12 times, it may be too easy.

And work all the major muscle groups (legs, hips, back, abdomen, chest, shoulders, and arms). For videos, go to cdc.gov/physicalactivity/basics/videos/index.htm.

9 percent of the gain in strength. (The rest was due to exercise.)¹² And protein had no impact on people who were untrained—that is, they hadn’t already done strength training—when they entered the study.

“Most people are just throwing away hundreds of dollars on protein supplements to gain maybe one pound of extra

The Bottom Line

It’s not clear if the RDA for protein is enough, but most Americans exceed it. So you can put away your calculator and aim for eating a healthy diet.

Here’s a guide—based on the DASH diet—of what to eat if you consume 2,100 calories a day. It’s got about 85 grams of protein (and about 105 grams if you choose poultry, fish, or lean meat as your “Wild Card”).

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

fer. “There’s plenty of protein in a mixed diet, and we don’t need that much.” 🍌

¹ *J. Am. Diet. Assoc.* 111: 290, 2011.
² *Am. J. Clin. Nutr.* 106: 684, 2017.
³ *N. Engl. J. Med.* 360: 859, 2009.
⁴ *JAMA* 307: 47, 2012.
⁵ *Obesity* 26: 854, 2018.
⁶ *Cell Rep.* 17: 849, 2016.
⁷ *Clin. Nutr.* 33: 929, 2014.
⁸ *JAMA Intern. Med.* 178: 530, 2018.
⁹ *J. Nutr.* 146: 1660, 2016.
¹⁰ *J. Nutr.* 142: 1532, 2012.
¹¹ *Osteoporos. Int.* 28: 1817, 2017.
¹² *Br. J. Sports Med.* 52: 376, 2018.
¹³ *Am. J. Clin. Nutr.* 108: 1, 2018.

Bodies of Water

How much—and which kind—of H₂O do you need?

BY CAITLIN DOW

“Keep your body deeply hydrated.” “Soothe soreness.” “Amp energy.” “Stay balanced.” “Replenish lost electrolytes.” “Neutralize acid.”

The bottled water aisle isn't what it used to be. Companies make it sound like drinking ordinary water would leave you weak, exhausted, and dehydrated. Here's a primer on how much water is enough. Turn the page for the lowdown on fancy (and pricey) waters.

How much water do you need? “You'd think we'd have a one-sentence answer,” says Colleen Muñoz, assistant professor of health sciences at the University of Hartford. “But it's much more complicated.”

The usual advice to drink eight 8 oz. glasses of water a day—the 8-by-8 rule—seems daunting. But it was never about water alone.

“The [National Academy of Medicine](#) now recommends about 9½ cups a day for women and about 12 cups a day for men,” notes Sam Cheuvront, a physiologist at the U.S. Army Research Institute of Environmental Medicine. “That includes all fluids: coffee, tea, juice, milk.” (It doesn't include the two to three cups of liquid you're likely to get from your food.)

In fact, that's how much the average adult consumes (which influenced the Academy's advice). Exception: people over 70 average only about 7 cups a day.¹

But the advice is just a rule of thumb. How much *you* need depends on how much *you* lose. What may matter:

■ **Heat or exercise.** Heat or physical activity boosts your fluid needs.

“It's not just sweat,” says Cheuvront, who notes that his views are not official U.S. Army or Defense Department policy.

“Heat or exercise also increases the water that's lost through breathing and the water that evaporates from the skin.”



Official advice: 9½ cups of fluids a day for women and 12 cups a day for men.

■ **Diet.** “If you eat a lot of salt or protein, your kidneys need more water to excrete the excess,” says Cheuvront. “So the more meat and high-sodium restaurant food and processed foods you eat, the more water you need.”

■ **Caffeine.** “The general consensus is that moderate caffeine intake doesn't dehydrate you,” says Muñoz.

In one study (funded by an industry-backed foundation), researchers randomly assigned 59 young men to get roughly 450, 225, or 0 milligrams of caffeine per day.² (A Starbucks grande Pike Place Roast has around 300 mg.) After five days, “there was no difference in hydration markers

measured over 24 hours,” says Muñoz.

■ **Alcohol.** “Alcohol turns down a hormone that tells the kidneys to retain fluid,” Muñoz explains, so it's a diuretic.

“If you drink alcohol, try to drink more water than you normally would,” she suggests.

■ **Older age.** “To say that we don't have a good understanding of hydration needs in older people is an understatement,” says Muñoz.

But some changes are well documented, she notes. For example, “older people aren't able to concentrate urine as well.” That means more trips to the bathroom.

What's more, the sensation of thirst gets weaker in older people, so they don't always realize when they need to drink fluids.

“And older adults are often taking a variety of medications that increase or decrease their fluid needs,” adds Muñoz.

How can you tell if you're getting enough fluid?

Urine color isn't a perfect measure of hydration, but it's useful. The sweet spot, says Muñoz: “the color of lemonade.” (If your urine is colorless, you could be *overhydrated*.)

For a more systematic approach, you can check what Cheuvront calls the WUT criteria first thing in the morning:³

Weight: Down more than 1 percent from your average morning weight.

Urine color: “Apple juice or darker.”

Thirst: “Not just a dry mouth, but so dry that it's hard to form saliva.”

“If two of these criteria are present, it's likely that you're not getting enough water,” says Cheuvront. “If all three are present, you're almost definitely dehydrated.”

¹ *BMC Public Health* 13: 1068, 2013.

² *Int. J. Sport Nutr. Exerc. Metab.* 15: 252, 2005.

³ *J. Am. Coll. Nutr.* 35: 185, 2016.

Protein Water



What it is: Water with added whey protein isolate.

Claim: “This low calorie protein drink maintains and replenishes muscle, increases

energy & endurance, curbs appetite, and provides hydration,” says [Trimino](#).

Evidence: “That’s quite a claim for the amount of protein that’s in only one ounce of chicken breast,” says the Army Research Institute of Environmental Medicine’s Sam Chevront. Each 16 oz. bottle of Trimino has just 7 grams.

In an industry-funded study on protein water and hydration, 10 young adults exercised until they were dehydrated and then drank about two liters of water either with or without roughly 40 grams of whey protein isolate. Over the next four hours, they were no better hydrated after drinking protein water than plain water.¹

Bottom Line: Extra protein in water doesn’t improve hydration...or pretty much anything else (see Cover Story).

¹ [Amino Acids 46: 1217, 2014.](#)

Raw Water

What it is: Unfiltered, untreated spring water.

Claim: “Flawless, gem-grade spring water...freely bubbling to the earth’s surface in Maine since the last Ice Age,” says [Tourmaline Spring](#). “Alive” with probiotics, says [Live Spring Water](#) (only available in parts of California).



Evidence: If you get your water straight from a spring—or if you take Live Spring Water’s advice about “visiting nature and gathering [y]our own spring water”—you’d be foolish.

“There’s a potential for contamination any time water reaches the surface,” says Glenn Morris, professor of infectious diseases at the University of Florida College of Medicine. “Gorgeous mountain springs or babbling

brooks are at risk of carrying disease-causing parasites like *Giardia* or *Cryptosporidium*.”

Tourmaline Spring and [Live Spring Water](#) provided results showing that they passed safety tests for ground-water (which don’t test for *Giardia* or *Cryptosporidium*). But if you’d pay \$59.70 for 12 liters of Tourmaline (with shipping), we’re still talking foolish.

Bottom Line: Raw water isn’t worth the price or risk.

Deep Ocean Water

What it is: Desalinated water from a deep ocean current.

Claim: “Kona Deep has a unique blend of electrolytes and trace minerals” that “hydrates you twice as fast as bottled spring water and a leading sports drink,” says the [company](#).

Evidence: Eight young adults exercised until they were dehydrated and then drank Kona Deep water, spring water, or a sports drink.¹ The level of particles dissolved in the participants’ saliva returned to normal twice as fast after they drank Kona Deep than after they drank the spring water or sports drink.

But particles in saliva “fluctuate in response to whatever you’re drinking, so they don’t really tell you anything useful about hydration,” says Chevront.²

What’s more, he adds, “this study is missing tremendous amounts of details and even plausibility.” That’s because there’s nothing special about Kona Deep’s electrolytes (roughly 2 milligrams of potassium and 45 mg of sodium in a 16.9 oz. bottle).

Bottom Line: Kona Deep is “basically just water,” says Chevront.

¹ [J. Int. Soc. Sports Nutr. 13: 17, 2016.](#)

² [Eur. J. Appl. Physiol. 114: 85, 2014.](#)



Alkaline Water

What it is: Water with a pH above 7. (On the 0 to 14 pH scale, 7 is neutral.)

Claim: “Alkaline water can help neutralize acid in the bloodstream,” says [PhURE](#).

Evidence: No studies have tested whether alkaline water can change the pH of the blood. But it’s unlikely. “Our bodies are really, really good at regulating and maintaining our blood’s pH within a very narrow range,” says Chevront.

And drinking alkaline water is unlikely to move the needle, even temporarily. “The average person has roughly 30 to 50 liters of water in their body,” explains the University of Hartford’s Colleen Muñoz. “Drinking a liter of alkaline water is basically a drop in the bucket.”

Nor is alkaline water better for hydration or good for treating acid reflux (see December 2017, p. 9).

Bottom Line: Your body is perfectly capable of regulating your blood’s pH without an assist from alkaline water.



Hydrogen Water

What it is: Water with added molecules of hydrogen.

Claim: “Boosts endurance, minimizes lactic acid, reduces fatigue,” promises [Htwo](#). “Improve athletic performance, reduce inflammation, deliver powerful antioxidants,” boasts [HFactor](#).

Evidence: In one study, researchers gave 10 male soccer players either plain water or hydrogen water for a week before having them cycle on a stationary bike and do knee extensions.¹

The hydrogen water had no impact on how much force the players could exert during knee extensions. However, post-workout blood lactate levels were lower after drinking hydrogen water than after drinking plain water.



And in a study that was partly industry funded, eight young female judo athletes had lower post-exercise blood lactate levels if they drank 10 ounces of hydrogen water instead of plain water 30 minutes before exercise.²

But “lactate doesn’t cause fatigue, despite what many people believe,”

Cheuvront explains.

In fact, muscle fatigue was no lower when the soccer players drank hydrogen water. (The researchers didn’t measure fatigue in the judo athletes.)

Bottom Line: There’s no good evidence to back up the claims for hydrogen water.

¹ [Med. Gas Res. 2: 12, 2012.](#)

² [Sci. Sports 31: 207, 2016.](#)

Electrolyte Water



What it is: Water with added electrolytes.

Claim: “Stay balanced with our electrolyte water!” says [Whole Foods 365](#)

Electrolyte Water. “Propel Electrolyte Water is made with more electrolytes than any other national water to support next level hydration,” says [Propel](#).

Evidence: “If you want to hold on to fluid, you need to consume electrolytes,” Cheuvront explains. That’s because sodium, potassium, and other electrolytes help keep fluid in your cells and blood.

“If you just consume water, you’ll retain some of it, but you’ll also excrete a lot of it,” he explains.

But for most people, electrolytes are a non-issue.

“There’s no need to consume extra electrolytes until you’ve been doing intense exercise for more than one hour,” says Cheuvront.¹

What if you exercise long enough to be drenched in sweat?

“It just so happens that we often consume fluids when we consume food, which has electrolytes,” adds Cheuvront. Problem solved!

At least Propel replaces what you lose in sweat. Many electrolyte waters—like Whole Foods 365—add just a touch of electrolytes for taste. It’s Marketing 101.

Bottom Line: After most exercise bouts, you can replenish your electrolytes with food and plain water.

¹ [J. Athl. Train. 52: 877, 2017.](#)

Coconut Water

What it is: The liquid inside a young, green coconut.

Claim: “Whether it’s post-workout or post night out, Vita Coco has electrolytes like potassium to help replenish you,” says [VitaCoco.com](#).

Evidence: Vita Coco is a good source of potassium—470 milligrams per cup. That’s a plus, since most people don’t get close to the recommended 4,700 mg a day.

But potassium alone isn’t ideal if you’re in a rush to rehydrate after *several* hours of exercise.

“You lose far less potassium than sodium in sweat,” says Cheuvront. And coconut water is low in sodium. (That’s a plus for blood pressure, but not for rehydrating.)

In two studies (one funded by Gatorade) on a total of 22 healthy young people, the volunteers drank plain water, coconut water, or a sports drink after exercising in 90° heat until they were dehydrated.

In one of the studies, the volunteers retained slightly more fluid (65 percent) from the coconut water over two hours than from the plain water (59 percent).¹ In the other study, there was no difference.² In both studies, the participants retained 68 percent of the fluid from the sports drink (which contained both sodium and potassium).

For most people, those differences are irrelevant.

“You can also replace those losses with plain old water and a sandwich,” says Cheuvront.

Bottom Line: You don’t need coconut water—or its 45 calories of (naturally occurring) sugar—after a workout. 🍌

¹ [Southeast Asian J. Trop. Med. Public Health 38: 769, 2007.](#)

² [Appl. Physiol. Nutr. Metab. 39: 1167, 2014.](#)



BREAK! OUTBREAK! OUTBR

BY LINDSAY MOYER

Contaminated foods and beverages sicken an estimated 48 million Americans each year. The five bugs most likely to cause an outbreak: *Norovirus*, *Salmonella*, *Clostridium perfringens*, *E. coli*, and *Campylobacter*. Together, they accounted for roughly 9 out of 10 illnesses from outbreaks from [2011 to 2015](#). (*Listeria monocytogenes* isn't in the top five, but it kills more people than most of the others.) Here's what you need to know about them—especially if you're pregnant, under age 5, or 65 or older, or you have a weakened immune system. Want to know more? See Dec. 2017, p. 3.

THE USUAL SUSPECTS



Norovirus

TYPICALLY FOUND IN: Fruits, vegetables, shellfish, any food an infected person touches.

LOWER YOUR RISK: Rinse fruits and vegetables. Avoid raw oysters and other shellfish. Wash hands with soap and water. (Don't rely on hand sanitizer.)



Clostridium perfringens

TYPICALLY FOUND IN: Cooked meat and poultry—think big roasts or stews—kept warm or at room temperature for hours.

LOWER YOUR RISK: Serve meat and poultry hot. Refrigerate leftovers within two hours. (Divide large amounts into shallow containers for quick cooling.)



Campylobacter

TYPICALLY FOUND IN: Raw milk, raw or undercooked poultry.

LOWER YOUR RISK: Don't wash raw poultry. (That can spread *Campylobacter* to foods, utensils, and kitchen surfaces.) Use a separate cutting board for poultry, and clean it well. Cook poultry to 165°F.

Salmonella

TYPICALLY FOUND IN: Almost any food: beef, pork, poultry, eggs, fruits, vegetables, spices, nuts, sprouts, and more.

LOWER YOUR RISK: Cook poultry, meat, and eggs thoroughly (or use pasteurized eggs). Rinse fruits and vegetables (but not packaged pre-washed greens).



E. coli (Shiga toxin-producing)

TYPICALLY FOUND IN: Beef (especially ground), unpasteurized milk and juice, raw fruits and vegetables (like sprouts).

LOWER YOUR RISK: Use a food thermometer to cook ground beef to 160°F. Avoid unpasteurized juices (like fresh apple cider). Don't eat raw sprouts.



Listeria

TYPICALLY FOUND IN: Raw milk, soft cheeses, raw sprouts, melon.

LOWER YOUR RISK: Avoid raw milk and raw sprouts. Look for pasteurized milk in the ingredients list of soft cheeses like brie and camembert. Refrigerate cut melon for no more than a week. 🍈



Sources: [Centers for Disease Control and Prevention National Outbreak Reporting System and Surveillance for Foodborne Disease Outbreaks United States Annual Reports \(2011-2015\)](#), [Food and Drug Administration](#).

Photos: stock.adobe.com (left to right, top to bottom): Minerva Studio, Gresei, Vit Kovalcik, nbxer, Sergey Ryzhov, George Dolgikh.

FOR MORE INFO

[cdc.gov/foodsafety](https://www.cdc.gov/foodsafety)

Quick Studies

A snapshot of the latest research on diet and exercise

Clues to the “Obesity Paradox”



A new study could explain what some call the “obesity paradox.” In some studies, people with a “healthy” weight had a higher risk of dying (over several years) than those with some (but not too much) extra weight.

Those studies used body mass index (BMI), which depends only on a person’s weight and height, as a proxy for body fat. The new study

estimated the body fat and lean mass (mostly muscle) of 38,000 men using weight, height, waist size, age, and race. Over 21 years, those with the least body fat had the lowest risk of dying. As body fat rose, so did the risk of dying—most often of cardiovascular disease or cancer.

In contrast, men with the least muscle mass had a higher risk of dying (especially of respiratory illness) than those with an intermediate level of lean mass. Why? Low muscle mass could be a sign of undiagnosed illness or frailty, even in people with a “healthy” BMI. And that could explain the obesity paradox.

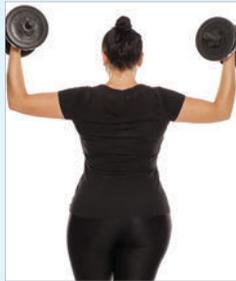
What to do: Don’t assume that those extra pounds are healthy.

[BMJ 2018. doi:10.1136/bmj.k2575.](#)

Less Fat, More Lean

How much strength training is enough to help you lose body fat?

Researchers randomly assigned 57 overweight or obese older women to do strength training for a half hour either two or three times a week. After 12 weeks, both groups lost equal amounts of belly and thigh fat and gained the same amount of lean mass.



What to do: Start training! Twice a week is enough.

[Int. J. Sports Med. 39: 527, 2018.](#)

Veggies & Breast Cancer

Certain vegetables and fruits may lower the risk of certain types of breast cancer.

Scientists tracked roughly 182,000 women for 24 years. Those who reported consuming more than 5½ servings a day of vegetables and fruit (but not fruit juice) had an 11 percent lower risk of breast cancer than those who ate no more than 2½ servings a day.



In particular, cruciferous, yellow-orange, and green leafy vegetables—like broccoli, cabbage, cauliflower, winter squash, and lettuce—were linked to a lower risk of breast cancer. The links were strongest for estrogen-negative and HER2-enriched tumors.

What to do: This type of study can’t prove that vegetables and fruit lower the risk of breast cancer (even though the researchers took other factors into account). But fruit-and-veggie-rich diets help lower blood pressure and are linked to a lower risk of stroke and heart attacks. How many reasons do you need?

[Int. J. Cancer 2018. doi:10.1002/ijc.31653.](#)

Good Doggy Bags

A doggy bag offer might help you eat less. Researchers randomly assigned 53 women to either a “to-go” group (which was told about the doggy bags before they ate) or a control group (which wasn’t told about the bags). Both groups were served dinners with one of four serving sizes: typical portions eaten by similar women in an earlier study or 25, 50, or 75 percent more.

Average calories consumed by the control group rose from 600 for the typical portion to

680, 780, and 760 for the three larger servings. The doggy bag group’s calories rose more slowly: from 600 to 610, 670, and, finally, to 690 for the largest serving.

What to do: Ask for a doggy bag (or bring your own reusable container). Most restaurants serve oversized portions of nearly everything. 🍴

[Appetite 2018. doi:10.1016/j.appet.2018.07.009.](#)



The Healthy Cook

Black Lentil Magic

BY KATE SHERWOOD



Rich. Earthy. Dramatic. That's black lentils. For two cups, simmer $\frac{3}{4}$ cup of lentils in $1\frac{1}{2}$ cups of water until just tender, 15-20 minutes. No black lentils? Try cooked white beans or French lentils. 🍴

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

Warm Black Lentils & Tomato SERVES 4

- 3 Tbs. extra-virgin olive oil
- 3 cloves garlic, sliced
- $\frac{1}{4}$ tsp. crushed red pepper (optional)
- 3 cups chopped fresh tomatoes
- 2 cups cooked black lentils
- 1 Tbs. capers
- $\frac{1}{2}$ tsp. kosher salt

1. Heat the oil in a large pan over medium heat until shimmering hot. Sauté the garlic and red pepper until fragrant, 30 seconds to 1 minute.
2. Stir in the tomatoes and simmer until softened, 2-3 minutes.
3. Stir in the lentils, capers, and salt.

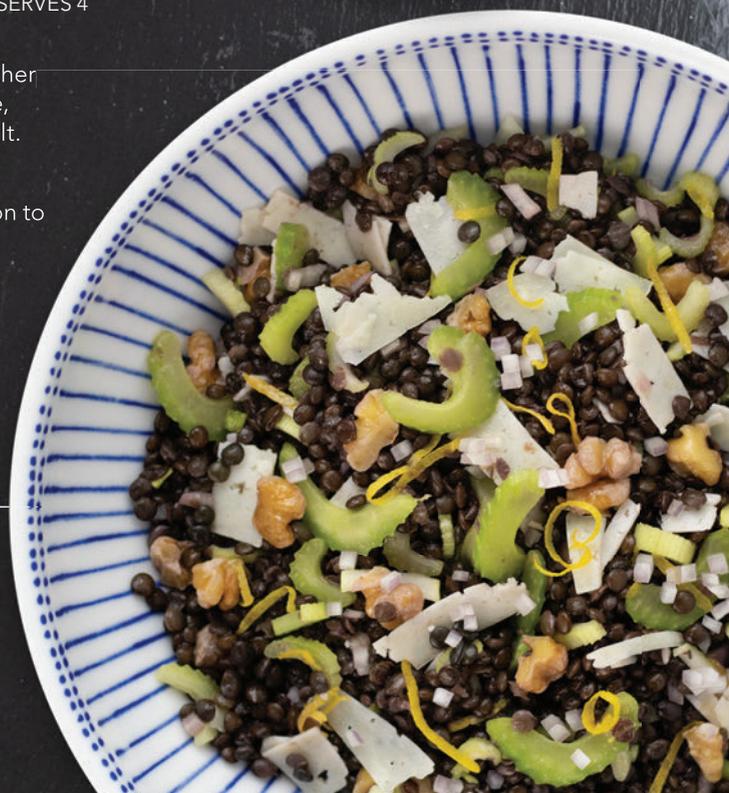


PER SERVING (1 cup): calories 250 | total fat 11 g | sat fat 1.5 g | carbs 28 g | fiber 13 g | total sugar 4 g | added sugar 0 g | protein 11 g | sodium 300 mg

Crunchy Black Lentil Salad SERVES 4

- 1 tsp. lemon zest
- 2 Tbs. fresh lemon juice
- 1 tsp. dijon mustard
- 2 Tbs. minced shallot
- 2 Tbs. extra-virgin olive oil
- $\frac{1}{2}$ tsp. kosher salt
- 2 cups cooked black lentils
- 1 cup sliced celery heart
- $\frac{1}{4}$ cup chopped walnuts
- $\frac{1}{4}$ cup shaved Manchego or parmesan cheese
- Freshly ground black pepper

1. In a large bowl, whisk together the lemon zest, lemon juice, mustard, shallot, oil, and salt.
2. Toss with the lentils, celery, walnuts, and cheese. Season to taste with the pepper.



PER SERVING ($\frac{3}{4}$ cup): calories 280 | total fat 14 g | sat fat 3 g | carbs 26 g | fiber 12 g | total sugar 2 g | added sugar 0 g | protein 13 g | sodium 340 mg

SMOOTHIE SHAKEDOWN

Drinkable fruit...or fruity sugar drink?

BY LINDSAY MOYER & BONNIE LIEBMAN

“Whole fruit!” says [Jamba Juice](#), where you can “power up with clean energy” and “start drinking” your greens.

“Smoothies with a purpose,” says [Smoothie King](#), where you can choose from Fitness Blends, Slim Blends, and Wellness Blends, among others.

Smoothies have a huge health halo. Do they deserve it? Even the best smoothie doesn’t hold a candle to a peach, a plum, carrots, or kale. Liquid calories don’t curb your appetite as well as fruits or vegetables that you chew.

But some smoothies are 800-to-1,000-calorie sugar drinks, while others can rival a homemade blend of your favorite fruit and plain yogurt. Here’s how to see through the marketing schemes and scams.

The information for this article was compiled by Jolene Mafnas.



A Tropical Smoothie Cafe smoothie typically has 14 tsp. of turbinado.

Jamba Juice? “Our blends have no pumps, no added purees, and no turbinado sugars,” the chain brags. “It’s all real at Jamba.” Yet there’s still plenty of “real” added sugar in the frozen yogurt, Chocolate Moo’d base (think chocolate milk), soy milk, almond milk, sherbet, or honey that Jamba adds to some of its smoothies. Ouch.

TIP: At Tropical Smoothie Cafe, you lose roughly 240 calories (and 14 teaspoons of sugar) if you axe the turbinado in most blends. You’d also be smart not to add Splenda (sucralose). Smoothie King’s “stevia plant-based sweetener”—stevia extract plus erythritol—is safe. (See [chemicalcuisine.org](#).)

No Sugar?

[Tropical Smoothie Cafe](#) sweetens nearly all of its smoothies with turbinado sugar (coarse brown cane sugar), but leaves it out if you ask.

And [Smoothie King](#) leaves raw cane sugar out of its Take a Break Blends if you ask. What’s more, the chain is dropping all added sugars from most of its smoothies.

A Word to the Size

Hold on to your straw. At [Jamba Juice](#), smoothies range from 16 oz. smalls (typically 200 to 400 calories) to 28 oz. larges (400 to 700 calories).

You’re also in for 400 to 700 calories at [Tropical Smoothie Cafe](#), where your only option is 24 oz.

[Smoothie King](#)’s small starts at

20 oz. and its large hits 40 oz. (1¼ quarts). Chalk up 300 to 1,000 calories. What’s next: the 64 oz. (half-gallon) bucket?

TIP: Stick with the smallest size. Even better: share with a friend or freeze some for later.

Whole Fruit?

“Whole fruit!” shout the signs at [Jamba Juice](#).

“That’s how we blend...why settle for anything less?”

Why, indeed.

Whole fruit is healthier than juice. You get more fiber and fewer calories. But at Jamba, nearly every fruit smoothie is made with fruit juice—though the menu board rarely says so—along with fruit.

And, several Jamba outlets told us, many are made with a juice blend that has more (cheap, nutrient-poor) apple, grape, or pear juice than the pomegranate, peach, mango, or other pricey fruit in the smoothie’s name. Others have “lemonade” (read: white grape juice and lemon juice from concentrate).

What’s more, many of Jamba’s smoothies are made with its sugary Chocolate Moo’d base, sherbet, or frozen yogurt (basically nonfat ice cream). So much for the website’s promise to “only use real whole fruit and veggies, and wholesome ingredients.”

And when [Tropical Smoothie Cafe](#)’s menu board says cranberry, lime, kiwi, or pomegranate, expect juice plus added sugar—not whole fruit—several outlets told us. As for “acai,” you’re looking at acai purée plus water and sugar. “Coconut”? It means coconut milk plus sugar.

TIP: Drop the juice. Ask for milk (nonfat at [Smoothie King](#) or 2% at Jamba) or unsweetened almond milk (at [Smoothie King](#)) plus fruit instead. Dairy milk means more protein and other nutrients.



All “whole fruit” at Jamba? Not even close.

Protein Smoothie Time?

“Blended to help you get toned, build muscle, last longer or recover faster,” says **Smoothie King**.

“Snack time? Workout time? Sounds like it’s protein smoothie time,” says **Jamba Juice**.

Companies push protein smoothies as a “snack” to help people “recover” from their workouts. Odds are, most of those smoothie calories will end up in your spare tire, not your biceps.

Thanks to hefty doses of juice or milk, frozen or dried fruit, nuts or nut butters, protein powder, and more, many smoothies start around 400 calories. Large ones rise to 700-plus.

For example, Jamba Juice’s **PB & Banana Protein Smoothie** (milk, banana, peanut butter, whey protein, honey) ranges from 490 calories in a (16 oz.) small to 740 in a (28 oz.) large. The **Cookies ‘n Crème**—think blended cookies instead of peanut butter and honey—is in the same ballpark. Some snack.

Tropical Smoothie Cafe’s 24 oz. **Chia Banana Max** hits 880 calories, thanks to banana, chia, almonds, oats, dates,



Most workouts don’t need protein...or cookies.

sweetened coconut milk, peanut butter, and whey protein, topped off with roughly seven teaspoons of turbinado sugar.

But super-sized Smoothie King takes the cake. Its **Peanut Power Plus Chocolate** (bananas, peanut butter, dates, “protein blend,” nonfat milk, cocoa) squeezes 580 calories into a (20 oz.) small and 1,160 into a (40 oz.) large. So much for that workout.

What’s more, Smoothie King’s “Lean1” and “Gladiator” protein powders have (unsafe) sucralose. So does Tropical Smoothie’s pea protein. And its soy and whey have (poorly tested) acesulfame potassium. At least Jamba’s soy and whey are unsweetened.

TIP: Protein smoothie fan? Stick to a small with just milk, fruit, and protein powder. A small Jamba **Protein Berry Workout** (soymilk, strawberries, bananas, whey) has 290 calories and 17 grams of protein. Ask for 2% milk to dodge the added sugar (6½ teaspoons per cup) in Jamba’s soymilk.

Slim Smoothies?

Slim Blends are “blended to help you slim down, lighten up or reduce calories as part of a sensible diet and exercise plan,” says **Smoothie King**.

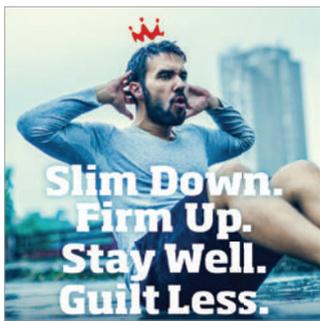
What’s so slimming about a small (20 oz.) **MangoFest** (mango plus juice blends) or **Pineapple Mango Lean1 Smoothie**

(mango, pineapple, protein powder, pineapple mango juice blend), for example? Each delivers nearly 300 liquid calories. Large ones top 550.

Smoothie King also pushes a **Diet Down** “enhancer,” including “green tea to increase fat metabolism” and “chromium to help burn carbohydrates and fats.” Will adding it (for an extra 99 cents) make a dent in the damage done by your 300-calorie smoothie? Fat chance.

The same goes for **Tropical Smoothie Cafe**’s **Lean Machine**, a 490-calorie fruit smoothie plus “fat burner” supplement cocktail with useless ingredients like *Garcinia cambogia* and raspberry ketone.

TIP: Don’t fall for slimming smoothies. Companies don’t need solid evidence to make claims about supplements, so they promise what sells. Rule #1 for dieters: Don’t drink your calories.



Smoothie King is unlikely to help you slim down.

Coffee with No Guilt?

“Kick start your day with Jamba’s new Cold Brew Coffee Blends,” says **Jamba Juice**. “Using sustainably-sourced coffee ingredients, our **La Vida Mocha** and **Lotta Horchata** smoothies have all the caffeine and flavor, with none of the added guilt.”

Time to swap your morning coffee for a coffee smoothie? Only if you’re looking to start your day with dessert.

Even a *small* (16 oz.) **Lotta Horchata Smoothie** (coffee, chia, honey, almond milk, nonfat frozen yogurt) has 210 calories and 26 grams (six teaspoons) of sugar—nearly all of it added. That’s around half a day’s limit. A large has 360 calories and 12 teaspoons of sugar. Yup, that’s a Lotta.

The **La Vida Mocha** blends coffee with nonfat frozen yogurt and Jamba’s sugary **Chocolate Moo’d** base. With 290 calories and 49 grams (12 teaspoons) of (mostly added) sugar, a (16 oz.) small is like drinking a Starbucks grande **Coffee Frappuccino**. A large—with 530 calories and 21 teaspoons of sugar—is almost like having a McDonald’s **Vanilla Cone** plus a large **Coke** (24 oz.). Ay, caramba!

Smoothie King’s **Coffee High Protein** smoothies may not add sugar, but they’re packed with enough protein powder, almonds, milk, and dates in each (20 oz.) small to rack up 390 calories. Double that for a large.

TIP: For “none of the added guilt,” have a cup of coffee.



Coffee...or dessert?

Drink Your Greens?



Ignore Jamba's advice. Eat—don't drink—your greens.

Jamba doesn't say how much sugar is from the juice and how much is from the fruit, but one thing is clear: it's no liquid salad.

Jamba's **Apple 'n Greens** and **Amazing Greens** smoothies also blend in sugary liquids (like apple-strawberry juice blend or lemonade).

Smoothie King's Veggie Blends smoothies play the same game. The **Apple Kiwi Kale** has apple juice and "kiwi juice blend" along with its kale and banana, and the **Lemon Ginger Spinach** has "papaya juice blend" along with its spinach, kale, carrots, and fruit. Of course, the menu doesn't let on that the kiwi juice or papaya purée is blended with (cheap) apple juice and other juices.

Similarly, **Panera's 200-calorie Green Passion** smoothie has more "peach mango base" (fruit purées, fruit juice concentrates, water, natural flavors) than spinach.

TIP: You can do better at **Tropical Smoothie Cafe**. The 24 oz. **Detox Island Green**—spinach, kale, mango, pineapple, banana, ginger—has no fruit juice and only 180 calories.

("Detox" simply means that you skip the hefty dose of turbinado sugar in the Cafe's regular **Island Green**, which packs more than *twice* the calories. You're detoxing the smoothie, not you.)

"Struggling to eat enough greens? Start drinking them!" says **Jamba Juice**.

Greens are a big draw in smoothie world. Watch out.

You're getting way more fruit-plus-juice than puréed kale and ginger in, say, a Jamba Juice **Greens 'n Ginger Smoothie**.

Even a medium (22 oz.) **Greens 'n Ginger** delivers 440 calories and 90 grams (21 teaspoons) of sugar.



A "yogurt" smoothie isn't a protein guarantee.

How Much Yogurt?

"Blended with creamy low fat yogurt," says **McDonald's** about its **McCafé Mango Pineapple** or **Strawberry Banana Smoothie**.

"Blended with *very little* yogurt," is more like it, judging by the paltry three grams of protein in a (16 oz.)

medium. Much of its 250-or-so calories comes from a "fruit base" (water, juice concentrates, and purées).

Likewise, **Tropical Smoothie Cafe** promises yogurt in its 450-calorie **Kiwi Quencher** (kiwi juice, strawberries, "non-fat yogurt") and 400-calorie **Mango Magic** (mango, pineapple, "non-fat yogurt"). Yet each 24 oz. smoothie delivers only 2 or 3 grams of protein.

What gives? The Cafe's "non-fat yogurt" is frozen yogurt, shops told us, which has no more protein than most ice creams.

TIP: **Jamba Juice** will "boost" any smoothie with the 5 grams of protein (and 25 calories) in a scoop of nonfat plain greek yogurt for 75 cents. Or, at no extra cost, you can swap greek yogurt for any smoothie's sherbet or fro-yo.

A Real Meal?

At **Smoothie King**, more than a dozen smoothies carry an "MR" (meal replacement) symbol, because they're "blended with at least 10 grams of protein to help keep you full," says the company.

And last year, the chain urged customers to "Sip Your Way to Your Goal Weight" by replacing one meal a day with an under-400-calorie smoothie.

But there's more to a healthy meal than 10 grams of protein. (Vegetables, anyone?) And it's not clear that protein helps "keep you full," especially when you're drinking your calories.



Don't count on a smoothie's protein to replace a meal.

What's more, even many of the King's small smoothies are no calorie bargain. The **Dark Chocolate Banana Smoothie** (banana, dates, blueberries, cocoa, protein powder), for example, has just 11 grams of protein. You'd get that from a 5 oz. container of greek yogurt...for less than half the smoothie's 350 calories.

TIP: Want a meal? Try **Jamba Juice's Fruit and Greek Yogurt Bowl** (31 grams of protein) for breakfast. Instead of a smoothie, you get greek yogurt with bananas, berries, granola, and honey for 390 calories. Better yet, get no honey and a light sprinkle of granola. 🍌



RIGHT STUFF

The Gentle Lentil



Think all lentils are brown? Wait until you meet these dazzlers.

“Dubbed the caviar of lentils, these mild-flavored beauties glisten when cooked,” reads the bag of **black lentils**. (We got **Whole Foods**’ store brand, but any well-stocked market should have them.)

Unlike their perfect-for-soup brown kin, black lentils hold their shape when cooked. That makes them great for salads, or a stand-alone bed for fish, chicken, or tofu.

Who needs rice or quinoa when you’ve got lentils? Come to think of it, who needs the fish or chicken (or red meat)? Lentils are more gentle on the environment.

Just one serving of black lentils— $\frac{1}{4}$ cup dry, which makes about $\frac{3}{4}$ cup cooked—has 13 grams of protein and a remarkable 15 grams of fiber, all for only 180 calories. And don’t forget lentils’ potassium, magnesium, iron, folate, and zinc.

Bonus: like all legumes, lentils may help lower LDL (“bad”) cholesterol. Is that a bargain, or what?

And lentils cook more quickly than dried beans. To preserve their deep, dark hue, heat black lentils in just enough water to cook. Simmer $\frac{3}{4}$ cup lentils in $1\frac{1}{2}$ cups water until just tender, 15-20 minutes. That makes two cups cooked.

Then what? These earthy legumes shine when paired with acidic dressings (like mustard vinaigrette), tomatoes, or curries. Try Warm Black Lentils & Tomato. Or Crunchy Black Lentil Salad. They’re both from our Healthy Cook (p. 12). Mmm...

So long, lowly lentil. Hello, black gold.

wholefoodsmarket.com—(844) 936-8255

Photos: CSPI; Jennifer Urban (top left), Jolene Mafnas (top right), Kate Sherwood and Jennifer Urban (middle and bottom).

FOOD PORN



Stack Attack

“A show-stopper breakfast sandwich with 2 eggs, 6 slices of hickory-smoked bacon, white Cheddar & sweet maple glaze, sandwiched between signature Belgian Waffle triangles infused with savory Cheddar.”



IHOP's Ultimate Waffle Stack is one of the new “IHOP Creations” that “capture the fun, creativity and inspiration one might find at local brunch spots,” the chain’s culinary vice president told the Los Angeles Daily News in March.

Talk about creative! Thank goodness you’ll no longer have to choose between a breakfast of waffles *or* bacon and eggs. Nothing like a pile of white flour, sugar, cheese, *and* bacon grease to start your day.

The “waffle stack” alone has more than half a day’s calories (1,390). But that’s without your choice of side—fruit, hash browns, or two pancakes. (Waffles with a side of pancakes? Why not add some toast? You can never have *too much* white flour.)

With hash browns, your “creation” hits 1,670 calories, more than two days’ worth of saturated fat (47 grams), over a day’s sodium (3,000 milligrams), and about half a day’s added sugar (30 grams).

You might as well top an IHOP Belgian Waffle with two McDonald’s Quarter Pounders with Cheese.

“Since 1958, IHOP has been the place where people connect over breakfast, enjoy study breaks, grab a bite before or after sporting events, and so much more,” says IHOP’s website. More, indeed.

ihop.com—(866) 444-5144



DISH of the month

Smokin’ Good Chicken

Whisk together 2 Tbs. olive oil, 1 Tbs. reduced-sodium soy sauce, 1 Tbs. tomato paste, 1 tsp. smoked paprika, 1 tsp. brown sugar, $\frac{1}{4}$ tsp. salt, and $\frac{1}{4}$ tsp. pepper. Toss with 1 lb. boneless, skinless chicken. Sauté or grill until cooked through, 4–10 minutes. Serves 4.

quick tip

Want bright green, tender-crisp broccoli or snow peas? Steam, blanch, or stir-fry them *quickly*. Don’t worry. They’ll finish cooking on the way to the plate.

