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Dairy & Meat **MYTHS**

Industry-funded research
feeds the confusion

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Mood

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I hope you enjoy this issue of *Nutrition Action*.

As usual, it offers an unbiased dive into the science on food and health, tips to find the best—and dodge the worst—picks at the supermarket, and mouth-watering recipes.

Our award-winning health-letter is at the heart of our mission to serve as America's Food and Health Watchdog and provide you with science-based news and analysis of the latest research.

These days, that matters more than ever.

You can't check the news without seeing clickbait headlines about shocking new findings! The food industry is busy funding—and sometimes slanting—self-serving research.

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CSPI's deputy director of regulatory affairs speaks about Chipotle's food safety record.

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Dairy & Meat MYTHS

Industry-funded research feeds the confusion

BY BONNIE LIEBMAN

“Butter is back.” “Eating cheese and red meat is actually good for you.” “Skim milk isn’t any better for you than whole milk, so go nuts.” An endless stream of headlines about new research—much of it industry funded—has fueled confusion about meat and dairy. Here are five myths that may trip you up.

MYTH White meat or red meat? Doesn’t matter.

“White meat increases cholesterol levels similar to red meat,” declared [U.S. News & World Report](#) in June.

“When we planned this study, we expected red meat to have a more adverse effect on blood cholesterol levels than

National Institutes of Health.)

“Both the press release and the news reports were ridiculous,” says Marion Nestle, professor emerita of nutrition and food studies at New York University.

“The title made it sound like the study was about red or white meat. But if you look at the way it was designed, the researchers went to a lot of trouble to show that if you feed people diets with equivalent amounts of saturated fat, they’ll raise LDL levels equally. Well, duh.”

The study randomly assigned 113 people to eat diets made with red meat, white meat, or non-meat protein (beans, nuts, soy, etc.) for four weeks each.¹

Here’s the catch: in order to make the red meat (beef) and white meat (chicken and turkey) diets equal in saturated fat, the researchers had to pick the very leanest cuts of beef, like top round and top sirloin.

But those lean cuts account for only a fraction of the beef we eat.

Hello-o-o. That’s precisely why experts advise people to eat more chicken and turkey than beef and pork.

“Because animal protein sources in the present study were restricted to lean cuts...we cannot extrapolate our findings to the lipid and lipoprotein effects of higher-fat red meat products in comparison with generally leaner

white meats,” wrote the authors.

Too bad that didn’t end up in the press release. Nor did most press reports point out that LDL was higher when the researchers made all three diets—red meat, white meat, and non-meat—higher in saturated fat (by adding full-fat dairy and butter).

“Some people are arguing that saturated fat has no effect on heart disease risk,” says Nestle. “Here’s more evidence that saturated fat is really important.”

What’s more, we’ve seen this movie before. The beef industry has been funding studies using v-e-r-r-r-y lean meat since the 1990s.²

“It’s easy to design studies to give you the answer you want,” says Nestle. Her most recent book, *Unsavory Truth*, explores the food industry’s influence on scientists and their research.

Bottom Line: Most cuts of red meat raise LDL (“bad”) cholesterol more than white meat.

MYTH Red meat is healthy if it’s lean.

“You might not have to give up (lean) red meat, after all,” reported the [Washington Post](#) last year. “Modest amounts of lean, unprocessed red meat don’t appear to have major health risks.”

The news: an industry-funded study found that, lo and behold, lean beef and pork don’t raise LDL if they’re part of a “Mediterranean” diet! Gosh!



Cholesterol levels are equal on beef and chicken diets if both are equal in saturated fat? Duh.

white meat, but we were surprised that this was not the case—their effects on cholesterol are identical when saturated fat levels are equivalent,” said the study’s senior author, according to [U.S. News](#).

They were surprised? Since the researchers made sure that the red meat and white meat diets had the same levels of saturated fat, of course their effect on cholesterol—or more precisely, LDL (bad) cholesterol—was the same.

(Much of the author’s work has been funded by the dairy and beef industries, though this study, which also looked at TMAO—see p. 4—was funded by the



The beef industry touts its study showing that you can squeeze lean beef into a Mediterranean diet.

Remember those misleading red-meat-is-no-different-than-white-meat headlines? (See p. 3.) In fact, red meat *is* worse, not only for cholesterol but also for TMAO.¹

When microbes in our intestines “eat” carnitine or choline, they make TMA (trimethylamine), which gets converted to TMAO (trimethylamine N-oxide) in the liver.

Carnitine is found largely in red meat (beef, pork, lamb, and veal). Egg yolks and liver have the most choline.

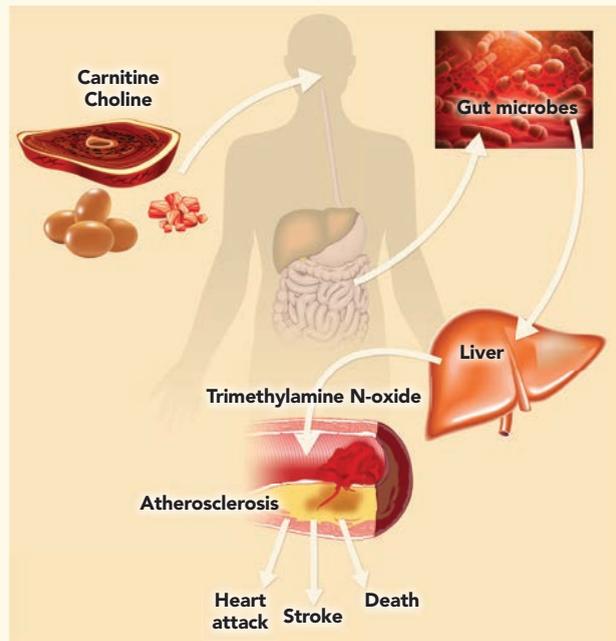
“Higher blood levels of TMAO predict a heightened risk of heart attack or stroke,” says the Cleveland Clinic’s Stanley Hazen.

(As a co-developer of a TMAO blood test offered by Quest Diagnostics, Hazen could receive royalties from its use.)

If you lower TMAO levels, does the risk of a heart attack or stroke drop? So far, no human studies have looked. But other evidence on TMAO is troubling.

“TMAO not only increases atherosclerotic plaque in animals’ arteries,” says Hazen. In a pilot human study, “higher blood levels caused blood cells called platelets to become more sticky.”²

Sticky platelets are more apt to form the blood clots that trigger most heart attacks and strokes.



When gut microbes “eat” carnitine or choline, they make TMA, which the liver converts to TMAO.

When people in the latest study ate lean beef (roughly 8 oz. a day) for a month, “blood levels in virtually every person moved into what we’d call the danger zone,” says Hazen. Why?

“Red meat increased the capacity of their gut microbiomes to make TMA.” It also made their kidneys excrete less TMAO.

What’s more, notes Hazen, “these people were all young and healthy.” TMAO may pose a greater risk for people with chronic kidney disease.

On the upside, he adds, “TMAO came down after four weeks on either a white meat or non-meat diet.”

One quirk about TMAO: a few deep-sea fish—like cod, haddock, and halibut—have

very high levels.

“It’s only in a subset of the deep-water fish that are harvested when they’re in cold waters,” says Hazen. “TMAO acts as an antifreeze, but enzymes chew it up when the fish reach warmer water.”

Bottom Line: TMAO aside, there’s plenty of reason to cut back on red meat. You can also avoid TMAO by ditching multivitamins or other supplements that contain carnitine, choline, or phosphatidylcholine (lecithin).

¹ *Eur. Heart J.* 40: 583, 2019.

² *Circulation* 135: 1671, 2017.

Photo: Maksym Yemelyanov/stock.adobe.com (gut microbes). Diagram: Adapted from N. Engl. J. Med. 368: 1575, 2013.

“Our results are not generalizable to all cuts of beef and pork because only tenderloins were provided to subjects,” wrote the authors.³

But even *lean* red meat may boost the risk of heart disease and cancer.

In the white-vs-red-meat study (see p. 3), TMAO (trimethylamine N-oxide) levels tripled when people ate red meat rather than white meat or non-meat proteins.⁴

TMAO has been linked to a higher risk of heart disease in people.⁵ A key source: gut bacteria that dine on the carnitine in red meat (see “TMAO: Troublemaker from Meat?”).

“Our study shows for the first time what a dramatic effect changing your diet has on levels of TMAO, which is increasingly linked to heart disease,” says author Stanley Hazen, head of

Preventive Cardiology and Rehabilitation at the Cleveland Clinic.

Though the evidence that TMAO harms the heart is still emerging, it could help explain why studies that track people for years find higher risks of heart disease and early death in people who eat more red meat.⁶

And then there’s colorectal cancer.

In 2015, the International Agency for Research on Cancer concluded that processed meats (like bacon, sausage, hot dogs, ham, and lunch meats) are carcinogenic to humans, and that unprocessed red meats (beef, pork, lamb, and veal) are *probably* carcinogenic.⁷

“The vast majority of observational studies show that people who consume the most processed or red meat have a higher risk of colorectal cancer,” says

Amanda Cross, a cancer researcher at Imperial College London.

Several lines of evidence could explain the link.

“Heterocyclic amines, polycyclic aromatic hydrocarbons, and N-nitroso compounds are all carcinogenic in animals,” explains Cross.

“The first two are formed when meats are cooked at high temperatures until well done.” That means grilling, barbecuing, or pan-frying.

“N-nitroso compounds can come from the nitrite that’s added to processed meats, but they can also form in the gut,” says Cross. “The heme iron in red meat may catalyze the reaction.”

Bottom Line: Even lean red meat may raise the risk of heart disease and colorectal cancer.

MYTH

Full-fat dairy is heart healthy.

“For the love of all that is dairy, why are we still eating low-fat?” asked *Bon Appetit* last year. “Science has come around on full-fat dairy. Why haven’t we listened?”

The science has come around, according to *Bon Appetit*, because “better designed studies found that saturated fat increased both good and bad cholesterol,” and “when both were raised, the net effect is zero.”

Simple? Yes. Correct? No.

Four recent studies randomly assigned people to eat diets that were either high or low in saturated fat, largely from dairy.^{1,8-10} The results: LDL (bad) cholesterol was higher—and HDL (good) cholesterol didn’t budge—in people who ate more dairy fat.

“Dairy fat is high in palmitic acid, a saturated fat that has potent LDL-raising effects,” says Frank Hu, who chairs the nutrition department at the Harvard T.H. Chan School of Public Health.

And there’s no question that a higher LDL puts the heart at risk.

“LDL is a major cause of heart disease, and lowering it with diet or drugs prevents heart disease,” says Frank Sacks, professor of cardiovascular disease prevention at the Harvard T.H. Chan School of Public Health.

“LDL isn’t just a marker for a higher risk. It’s the real deal.”

Dairy fat doesn’t raise LDL in some industry-funded studies, but there’s usually a reason why.

For example, one study—funded by the Australian, Canadian, Danish, Dutch, French, and U.S. dairy industries—reported no difference in LDL when people were randomly assigned to eat regular versus lower-fat cheese.¹¹

But the study was “underpowered”—

that is, too small to see a difference from the change in sat fat—noted Jan Pedersen of the University of Oslo in a letter to the journal’s editor.¹²

A second industry-funded study reported no higher LDL on a high-cheese or high-meat diet than on a lower-fat, higher-carb diet.¹³

No surprise there.

“The cheese and meat diets were enriched with foods rich in polyunsaturated fats such as nuts, canola oil, and sunflower oil, which are known to lower LDL cholesterol,” wrote Peter Marckmann of the Roskilde Hospital in Denmark in a letter to the editor.

“The diets were apparently designed so that the possibly desired conclusion could be drawn.”¹⁴

That said, butter may raise LDL slightly more than cheese.

In the largest study—funded by the Canadian dairy industry—LDL was 4 points higher when people ate about 10 pats of butter than when they ate about 3 ounces of cheese a day. (The two foods

cheese. It just means that when it comes to raising LDL, cheese is the lesser of two evils, and they’re both worse than unsaturated fats.”

That fits with studies that ask people what they eat and wait years to see who gets heart disease.¹⁶

“There’s certainly no good evidence that high-fat dairy is better than low-fat,” says Hu. And pushing high-fat dairy could also lead to worse diets.

“We eat much of our dairy in foods like cheeseburgers and pizza,” notes Hu.

“Promoting high-fat dairy would do more harm than good because when we eat those foods, we get not only saturated dairy fat but also processed meats, refined carbs, and sodium.”

Bottom Line: Dairy fat hasn’t earned a clean bill of health for your heart.

MYTH

Full-fat dairy wards off diabetes.

“Can type 2 diabetes be prevented by cheese?” asked the headline in *Newsweek* last year.

“People who had higher levels of biomarkers of dairy fat had a lower risk of developing type 2 diabetes,” wrote the author of a recent study.¹⁷ (*Newsweek* re-ran the article from theconversation.com.)

But something else about those people could have explained their lower risk.

And the biomarkers—primarily blood

levels of two fats (pentadecanoic acid and heptadecanoic acid) that make up about 2 percent of dairy fat—aren’t perfect.

“Those biomarkers are not equivalent to full-fat dairy in the diet,” says Harvard’s Frank Hu. Among the reasons:

■ **Lower-fat dairy:** The biomarkers may identify people who consume the most lower-fat dairy. “Low- or reduced-fat milk, yogurt, and cheese have less fat, but if you consume enough, they could



“Emerging evidence” indicates that saturated fat doesn’t increase the risk of heart disease and stroke, says “Dr. Dairy” (aka the dairy industry). How convenient!

supplied the same amount of sat fat.)

However, the researchers reported much bigger differences in LDL when they switched people from butter to polyunsaturated fat (18 points lower), monounsaturated fat (10 points lower), or carbs (7 points lower).¹⁵

“It’s conceivable that fermentation may mitigate the LDL-raising effect of the palmitic acid in cheese,” says Hu. “By how much, it’s hard to know.”

“But that doesn’t exonerate the palmitic acid and other saturated fats in



Do blood levels of two dairy fats tell us how much cheese (or other dairy) people eat? That's debatable.

supply as much fat as a daily serving of full-fat dairy," says Hu.

■ **Fish & fiber:** "You can get small amounts of those fats from some fish," notes Hu. Eating some types of fiber may also raise blood levels.¹⁸

■ **We may make them:** "The amount in our bodies could reflect metabolic pathways that we don't know or understand," says Hu.¹⁹ In one study, when people were fed extra high-fat dairy, one of the biomarkers didn't budge.²⁰

What's more, the results on blood fats don't match the results from studies that track what people eat for years.

When Dutch researchers looked at 22 studies on nearly 580,000 people, each daily serving of any dairy was linked to only a barely significant 3 percent lower risk of type 2 diabetes.²¹

And there were hints that the risk of diabetes was lower only in people who ate low-fat dairy and only in Asian, not European, populations.

Was the risk lower when researchers looked at cheese alone? Nope. Ditto for milk. People who ate a small (1/2 cup) daily serving of yogurt had a 12 percent lower risk, but the risk didn't drop further in those who ate more yogurt.

"In many studies, yogurt is a good marker for health-conscious people," notes Hu. Could that or something else about yogurt or dairy eaters explain their lower risk?

To find out, a few studies have tested high-fat dairy on blood sugar and other surrogates for type 2 diabetes risk.

But when researchers randomly assigned people to diets that were higher or lower in dairy fat for a month, they saw no difference in blood sugar or insulin levels.²²

The results of a three-month, industry-funded

study are expected soon. Stay tuned.

Bottom Line: So far, there's no solid evidence that full-fat dairy prevents type 2 diabetes.

MYTH Full-fat dairy keeps the weight off.

"How full-fat dairy helps keep you lean," ran the headline on Verywellfit.com in April.

"We have been brainwashed to believe these types of full-fat dairy foods contribute to weight gain and obesity," declared the author. "According to more recent studies, eating full-fat dairy may actually keep you thin."

How? "In order to make low-fat dairy products taste good, the fat has been replaced by sugar and other additives," explains Verywellfit.com. Really?

We looked at 10 popular brands of

yogurt—roughly 150 in all—that had both whole-milk and low-fat or fat-free flavors. Ounce per ounce, total sugars were typically no different.

Another key argument for full-fat dairy: it curbs hunger.

"But the evidence is very limited," says Harvard's Frank Hu. "In our studies, neither high-fat nor low-fat dairy is linked to less weight gain over time."

His studies track people for years or decades. But why wait that long when you can give people high-fat or low-fat dairy for a few months to see what happens to their weight?

In one of the few good studies, Spanish researchers gave 45 college students 3 1/2 servings a day of full-fat or low-fat milk and yogurt for two months each. They gained two pounds on the full-fat and zero on the low-fat dairy.²³

A new three-month study, funded by the dairy industry, may help answer the question.

Even so, "the most troubling problem with dairy research is that so much of it is funded by the dairy industry," says NYU's Marion Nestle.

Bottom Line: Don't assume that full-fat dairy helps keep you trim. 🍌



Dairy fats in blood are linked to a lower risk of type 2 diabetes, says the dairy industry's "Research Roundup."

¹ *Am. J. Clin. Nutr.* 2019. doi:10.1093/ajcn/nqz035.

² *Arch. Intern. Med.* 154: 1261, 1994.

³ *Am. J. Clin. Nutr.* 108: 33, 2018.

⁴ *Eur. Heart J.* 40: 583, 2019.

⁵ *J. Am. Heart Assoc.* 2017. doi:10.1161/JAHA.116.004947.

⁶ *Arch. Intern. Med.* 172: 555, 2012.

⁷ *monographs.iarc.fr/wp-content/uploads/2018/06/mono114.pdf.*

⁸ *PLoS One* 2017. doi:10.1371/journal.pone.0170664.

⁹ *J. Nutr.* 141: 2180, 2011.

¹⁰ *Eur. J. Clin. Nutr.* 66: 1229, 2012.

¹¹ *Am. J. Clin. Nutr.* 104: 973, 2016.

¹² *Am. J. Clin. Nutr.* 105: 1017, 2017.

¹³ *Am. J. Clin. Nutr.* 102: 573, 2015.

¹⁴ *Am. J. Clin. Nutr.* 103: 291, 2016.

¹⁵ *Am. J. Clin. Nutr.* 105: 800, 2017.

¹⁶ *Am. J. Clin. Nutr.* 104: 1209, 2016.

¹⁷ *PLoS Med.* 15: e1002670, 2018.

¹⁸ *Am. J. Clin. Nutr.* 105: 1544, 2017.

¹⁹ *Molecules* 20: 2425, 2015.

²⁰ *Sci. Rep.* 2017. doi:10.1038/srep44845.

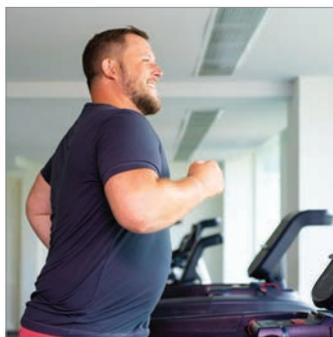
²¹ *Am. J. Clin. Nutr.* 103: 1111, 2016.

²² *J. Nutr.* 144: 1753, 2014.

²³ *J. Hum. Nutr. Diet.* 22: 336, 2009.

Quick Studies

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



Exercise & Weight Loss

When people exercise, they often don't lose as much weight as scientists expect. To find out why, researchers randomly assigned 171 sedentary overweight or obese people to burn:

- A: no extra calories,
- B: roughly 100 extra calories a day, or
- C: roughly 250 extra calories a day.

All exercise sessions were monitored.

After six months, group A had lost ½ pound, group B had lost about 1 pound, and group C had lost 3½ pounds. Based on how much the groups exercised, the researchers calculated that group B should have lost another 3 pounds and group C should have lost another 6 pounds. What happened? The people in groups B and C “compensated” for the exercise by eating roughly 100 extra calories a day.

What to do: If you want to lose weight, eat less. And exercise to lower your risk of type 2 diabetes, heart disease, stroke, some cancers, bone loss, muscle loss, and more.

[Am. J. Clin. Nutr. 2019. doi:10.1093/ajcn/nqz054.](#)

Hula-Hoop Your Waist?



Could weighted hula-hooping help shrink your waist?

Finnish researchers randomly assigned 53 overweight people (mostly women) to hula-hoop or walk for six weeks each. Each person was taught to use a 3½-pound hula-hoop. They hula-hooped for only 6 minutes a day the first week, and added 2 minutes a day each week until they reached 11 minutes a day. For the walking, most participants simply added 10 minutes a day to their usual walking time.

Waist size and fat around the waist fell only during the hula-hoop period. (Waist size dropped by about an inch.)

What to do: If this small study is replicated, it could offer a new option for people who want to shrink their waist fat, which is linked to a higher risk of type 2 diabetes and heart disease.

[Obes. Facts 12: 385, 2019.](#)

Cancers Up in Young Adults

Between 1995 and 2014, the risk of several cancers that are linked to obesity rose more quickly in people aged 25 to 49 than in older adults.

In people aged 25 to 29, for example, the yearly incidence of gallbladder, pancreatic, uterine, and colorectal cancers rose by roughly 2 to 4 percent, while kidney cancer rose by 6 percent. In each five-year age group over 49, the risk of four of those cancers rose no more than 1 percent (or dropped), and kidney cancer rose no more than 2 percent.

What to do: No matter your age, lose (or don't gain) excess weight. While this study can't show that obesity caused higher cancer risks, it reveals troubling trends.

[Lancet Public Health 4: e137, 2019.](#)



Spendthrift or Thrifty?

Why is it easier for some people to lose extra weight?

Researchers fed 35 young adults (mostly men) 40 percent more calories than they needed (1,160 extra calories a day, on average) for two months.

The average participant gained 17 pounds (it ranged from 5 to 24 pounds). Six months later, they had, on average, lost only 9 pounds of their

excess weight. Those who burned the most calories for their size (“spendthrifts”) while they were being overfed lost more weight later than those who burned fewer calories (“thrifty” types).

What to do: Don't assume you can overeat and lose the weight later. “Human metabolism evolved to protect against calorie deprivation, not so much against calorie excess,” wrote the authors. 🍌

[Am. J. Clin. Nutr. 2019. doi:10.1093/ajcn/nqz108.](#)



Gut Feeling

Can microbes boost your mood?

BY CAITLIN DOW

"Is your gut microbiome the key to health and happiness?" ran *The Guardian* headline in 2017. "Germs in your gut are talking to your brain," declared the *New York Times* in January.

Your microbiome—the ecosystem of bacteria, viruses, yeast, and other microbes living in your gut—may be sending signals to your brain that alter your mood, your behavior, and your nervous system's vitality. But scientists are only starting to bring the microbiome-brain picture into focus.

"It sounds a bit like science fiction, doesn't it?" says Valerie Taylor, head of the department of psychiatry at the University of Calgary.

She's talking about evidence that microbes in your gut may influence your brain. For example:

■ Mice are anxious and prefer dark, enclosed spaces. But if they're born and raised without gut microbes, they freely scurry around light, exposed areas.¹

■ When microbe-depleted rats get fecal transplants from people with severe depression, they act more sad and anxious than rats that get transplants from people without depression.²

Other research hints that the microbiome may play a part in autism, Parkinson's, and more.³

But there are enormous gaps in what we know. For one thing, the research has largely been done on rodents.

"Those rodent studies have advanced our understanding of the microbiome-gut-brain axis, but we don't know what the results mean for people," notes John Kelly, a lecturer in clinical psychiatry at Trinity College Dublin.

"In most cases, you can't compare what's going on in a mouse with a

human," says Gregor Reid, professor of microbiology and immunology at Western University in Ontario. "We've cured cancer many times in mice."

Here's what researchers know...and what they're still trying to figure out.

Your gut & brain are talking

Ever had "butterflies" in your stomach? That's the chatter between your brain and your gut. And some of those signals may come from microbes.

"But no one's exactly sure how gut bacteria are communicating with the brain," says Taylor.

One possibility: bacteria may send signals through the vagus nerve, which runs from the brain to the abdomen. In one industry-funded study, giving mice

via hormonal mechanisms, like by altering the stress hormone cortisol," Taylor explains.

"And gut bacteria may influence inflammation, which could have an impact on brain functioning."

What's more, she adds, "some

bacteria produce neurotransmitters like serotonin and dopamine, which help regulate mood and affect mental illnesses like depression and bipolar disorder."

But that's in the gut.

"Do those neurotransmitters even get to the brain?" asks Reid. "If so, are they having an influence? Are they reducing anxiety? We don't know."

It's time to do those studies, and not just in rodents, says Reid. "Researchers can publish all the mice data they want,

but until they do something in humans, I'm not sold."

So far, most human studies have merely observed that people with disorders like depression, bipolar, autism, and Parkinson's have different microbiomes than people without those disorders.⁵⁻⁸

In the best study, researchers analyzed gut bacteria in roughly 2,100 Belgian and Dutch adults.⁵

"Two types of bacteria were depleted in people with depression, even after taking antidepressant use into account," says Kelly.

But the cause and effect aren't clear. Did the missing bacteria cause depression? Or are they missing because



Gut microbes may be sending signals to your brain that alter your mood and behavior, but it's not clear what those signals are.

a probiotic—that is, live microbes that provide a health benefit—relieved anxiety, but it had no effect in mice whose vagus nerves were cut.⁴

"Microbes may also talk to the brain



"Promotes emotional well-being & relaxation," says Garden of Life's Mood+. More studies are needed.

depressed people eat differently or are different in some other way? This kind of study can't say. And it certainly can't prove that restoring the depleted bacteria will lift depression.

Can psychobiotics help?

"Psychobiotics refer to probiotics that, when ingested in appropriate amounts, have a benefit to the brain and mental health," explains Philip Burnet, associate professor in the department of psychiatry at the University of Oxford.

"We've proposed adding probiotics—foods or their components that feed beneficial bacteria already in the gut—to that list." (Most probiotics are indigestible carbohydrates like fiber.)

But so far, the evidence that any psychobiotics work is scanty. And some mood supplements—like Lifted Mood Boosting Probiotic and Renew Life Mood & Stress Probiotic—disclose their probiotics' genus and species, but not the strains, so it's impossible to know what they contain (see July/August 2017, p. 8).

That leaves only a few strains that have been tested on mood. For example:

Probiotics

"Promotes emotional well-being & relaxation," reads the label of Garden of Life's Mood+.

The supplement contains *Lactobacillus helveticus* R0052 and *Bifidobacterium longum* R0175. (The label lists 14 other bacteria, but doesn't identify their strains.)

Do those two popular strains work?

Only one (company-funded) study has tested them in people with what the researchers called "low mood." Among 79 New Zealanders who had some symptoms of depression but weren't on antidepressants, those who took the probiotic for two months fared no better than the placebo takers.²

(Somehow, Garden of Life's website

forgot to mention those results.)

In people without mood disorders, a handful of small studies—nearly all industry-funded—haven't found much.

For example, in one study of questionable quality, 55 French adults were randomly assigned to take the two strains or a placebo.¹⁰ After a month, the probiotic takers reported a greater drop in only 5 out of 20 scores of depression, anxiety, stress, and coping ability than the placebo takers. But it's not clear that those differences translate to "emotional well-being & relaxation."

Other probiotics have come up empty. For example, *Lactobacillus rhamnosus* JB-1 reduced anxiety in mice.⁴ But when Kelly randomly assigned 29 men without mood disorders to take a placebo or *L. rhamnosus* JB-1 for a month each, he found no effect on mood, anxiety, stress, or sleep.¹¹

"There's a potential for probiotics to improve mental health, but the small studies haven't been followed up with larger, better studies," says Reid. "Researchers aren't taking the next step."

Prebiotics

"You can't bottle feelings like this, but they are available in a sachet," says the British ad for Bimuno. "Experts have shown that a healthy gut can help you feel good."

Bimuno contains galacto-oligosaccharides. They're chains of two to five sugar units (saccharides) that our digestive enzymes can't break down, so they end up in the large intestine, where bacteria feed on them. That makes galacto-oligosaccharides a prebiotic.

"Unlike probiotics that contain just a few strains of bacteria, prebiotics feed and amplify many strains of your gut bacteria," Burnet explains.

Only a few studies have looked at Bimuno's effect on mood.

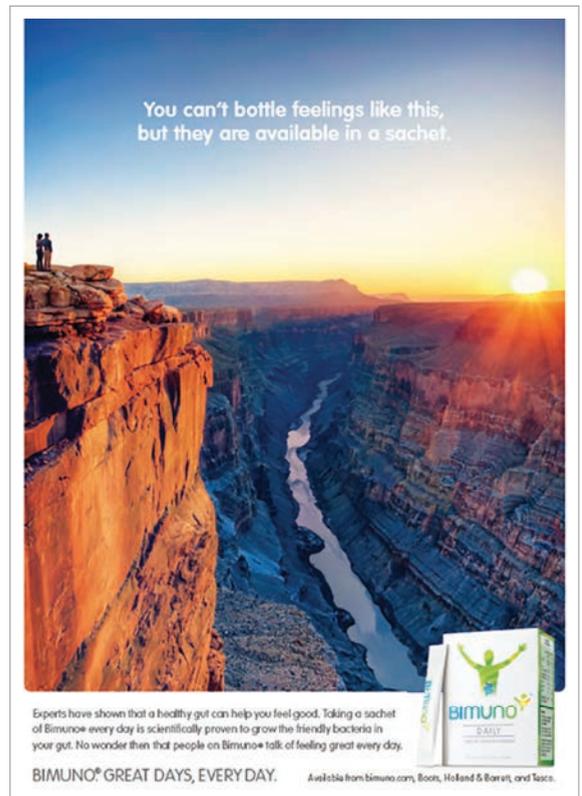
In a small trial funded by the company, Burnet randomly assigned 45 adults without mood disorders to take 5½ grams of Bimuno, a second prebiotic, or a placebo every day.¹²

"We found that three-week administration of Bimuno didn't change people's mood," says Burnet. "But it did affect one of the mechanisms that underlie mood."

That is, people who took Bimuno tended to focus for 20 milliseconds longer on positive than on negative words compared to the placebo takers.

Would that lead them to "feel good" over time? Seems like a stretch.

Few studies have tested other prebiotics on people. And even if future



It's not clear if prebiotics can lift mood, but they'll never replace a healthy diet.

research finds that prebiotics can lift your mood, they'll never be a substitute for a healthy diet.

"Some people want to sprinkle a prebiotic supplement on their burger and fries and say that they're healthy," says

Burnet. “But you’re better off eating a diet rich in many types of fiber.”

And don’t expect psychobiotics to replace antidepressants or other medications for mood disorders, he adds.

“Maybe psychobiotics will make drugs work better for some people. But that hasn’t been shown yet.”

Super poopers?

“Probiotics and prebiotics may have subtle impacts on the microbiome, but they’re not meant to reshape your entire microbiome,” notes Taylor.

A fecal transplant might. “In a fecal microbiome transplant, you transfer the gut microbiome from a healthy donor to a patient,” explains Taylor. “The goal is to restore a stable microbiome.”

The Food and Drug Administration allows doctors to use fecal transplants only in patients who have otherwise-untreatable *Clostridium difficile* infections, which are sometimes fatal. (*C. diff* bacteria cause severe diarrhea.)

Taylor is testing fecal transplants in people with bipolar disorder, who cycle through depressive and manic periods.

“They’re in the depressed phase of the illness, and they’re taking medications, but the drugs aren’t helping,” she says.

“Participants are randomly assigned to either a control group, where their own stool is given back to them, or a treatment group, where they receive stool from a healthy donor. Both are given by colonoscopy.”

Taylor will follow the volunteers for six months. “We’re looking for a change in their depression, anxiety, and how well they think and concentrate, as well as any side effects,” she says.

But even if fecal transplants help, researchers would have to conduct larger follow-up studies to make sure that the transplants are not just effective

but also safe.

“People are doing crazy things like getting donations from friends or family to do fecal transplants for themselves,” Taylor says. “That shows how desperate people are. But it’s quite unsafe.”

You can’t trust just anyone’s stool. In June, the FDA reported that two patients with weakened immune systems who received transplants from the same donor—as part of a study—contracted

constipation, or diarrhea. Taylor also screens for asthma, allergies, and autoimmune disorders, which may all be linked to the microbiome.

Could other conditions, like obesity, Parkinson’s, or autism be transmitted via fecal transplants? “We don’t know what we don’t know,” Taylor acknowledges.

Her team will keep tabs on their donors for years. “If they happen to develop anything that may be connected to the microbiome, we’ll follow up with everyone they donated to and see if there’s a link.”

The bottom line

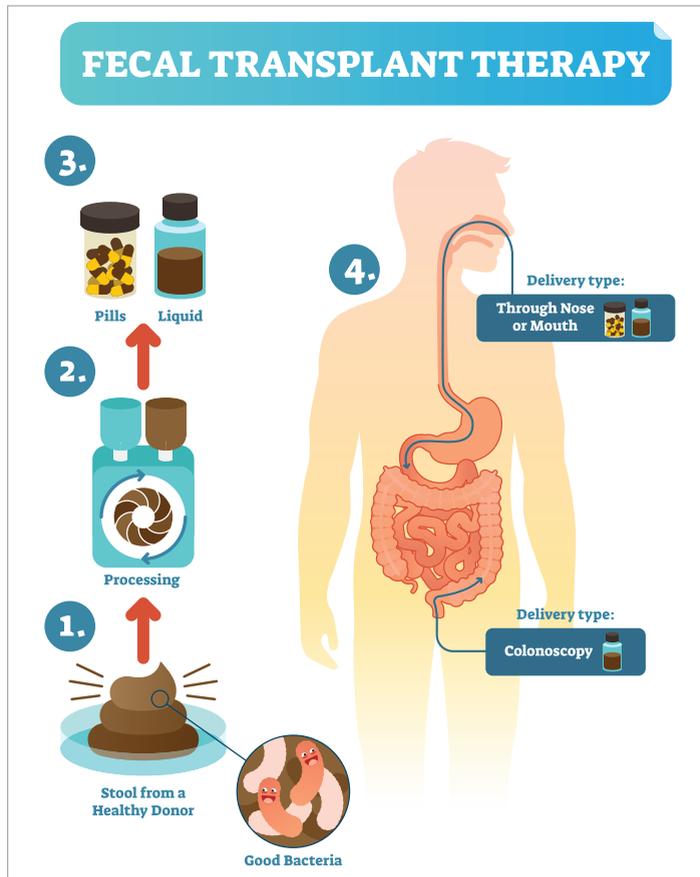
“There’s room to be optimistic that microbes could play a role in mental health,” says Reid. “But I’m trying to give people a reality check.”

That reality: large, well-designed trials haven’t demonstrated that the microbiome affects the brain.

“It’s good to be excited about this area of research, but it’s best to be cautious and not waste your money on supplements that make claims about mood or mental health that the science doesn’t support,” says Taylor.

What’s more, she adds, “mental illness may be related to the GI system in only a subset of people. If these treatments work, they may be another tool in the treatment toolbox, but not for everyone. The more pieces we have to this puzzle, the better.”

For now, at least, most of the pieces are still missing. 🍌



Scientists are in the early stages of testing fecal transplants for mood disorders. Stay tuned.

an invasive *E. coli* infection.¹³ One of the patients died. (The donor stool hadn’t been screened for the *E. coli*.)

Taylor recruits only people with superior stool. “If you think about the screening done for a blood donation and then add about 20 pages of restrictions, you start to get a sense of how rigorous these donors are screened,” she says.

They can have no family history of inflammatory bowel disease or colon cancer, no recent antibiotic use, and no recurring stomach issues like bloating,

¹ PNAS 108: 3047, 2011.
² J. Psychiatr. Res. 82: 109, 2016.
³ Cell. Mol. Gastroenterol. Hepatol. 6: 133, 2018.
⁴ PNAS 108: 16050, 2011.
⁵ Nat. Microbiol. 4: 623, 2019.
⁶ J. Psychiatr. Res. 87: 23, 2017.
⁷ PLoS One 8: e68322, 2013.
⁸ Mov. Disord. 32: 739, 2017.
⁹ Aust. N. Z. J. Psychiatry 51: 810, 2017.
¹⁰ Br. J. Nutr. 105: 755, 2011.
¹¹ Brain Behav. Immun. 61: 50, 2017.
¹² Psychopharmacology 232: 1793, 2015.
¹³ fda.gov/vaccines-blood-biologics/safety-availability-biologics.

Screen Test

How to decode a sunscreen label

BY CAITLIN DOW

Sunscreen helps prevent skin cancer (and wrinkles!). But many of its active ingredients are absorbed through the skin. Are they safe? The Food and Drug Administration wants more research. And *Consumer Reports* says that most sunscreens with two safe *unabsorbed* active ingredients—titanium dioxide and zinc oxide—overstate their SPF. Here's the scoop on sunscreen labels.

Broad Spectrum

Look for broad spectrum to block both UVB and some UVA rays (though there's no SPF rating for UVA, so you don't know how much is being blocked). The FDA wants all SPF 15-or-higher sunscreens to block some UVA rays and wants higher SPFs to block more.

PABA Free

Ignore PABA claims. The compound can cause allergic reactions, but it's rarely used in sunscreens anymore.



Unsafe Active Ingredients?

The FDA wants more safety data for 12 active ingredients, because they may be absorbed.¹ Zinc oxide and titanium dioxide are not absorbed.² But sunscreens that use them may overstate their SPFs, say *Consumer Reports'* tests. Solution: try Goddess Garden Everyday Natural Lotion SPF 30 or California Kids Supersensitive Lotion SPF 30+. Both fared better than others that CR tested.



Expiration Date

Sunscreens degrade over time. See no expiration date? That means the company has proven that the sunscreen is stable for at least three years.

SPF

The sun protection factor tells you how well a sunscreen blocks UVB rays. The FDA has proposed that labels not exceed SPF 60+ because higher SPFs don't offer much more protection. Even SPF 30 blocks 97 percent of UVB rays.

Reef Safe

Reef safe usually means no oxybenzone or octinoxate, which can harm coral reefs. But the claim is unregulated, and no sunscreen has been proven safe for all marine life.

Water Resistant

Swimming or sweating? Look for water resistant sunscreen, which retains its SPF value for either 40 or 80 minutes.

Oxybenzone Free

Oxybenzone is readily absorbed and has been detected in human blood, urine, and breast milk. It's a hormone disruptor in animal studies.³

¹ [regulations.gov/document?D=FDA-1978-N-0018-0841](https://www.fda.gov/regulatory-information/search/fda/document?D=FDA-1978-N-0018-0841).

² *JAMA* 321: 2082, 2019.

³ *Int. J. Androl.* 35: 424, 2012.

The Healthy Cook

Foolproof Fish



Gently poaching fish in a flavorful liquid just about guarantees a perfect outcome—juicy, tasty fillets. Bonus: you also get vegetables and a delicious sauce, all in one pan. 🍴

Poached Provençal White Fish

 SERVES 4

- | | |
|---|---|
| <ul style="list-style-type: none">1 onion, thinly sliced1 bulb fennel, thinly sliced1 clove garlic, thinly sliced¼ cup extra-virgin olive oil¼ cup dry vermouth (optional)1 pint cherry tomatoes, halved1 tsp. orange zest¾ tsp. kosher salt1½ lbs. tilapia, sea bass, snapper, or other firm white fish, skin removed and cut into chunksA few fennel fronds½ lemon, cut into wedges | <ul style="list-style-type: none">1. In a large, deep pan over medium heat, sauté the onion, fennel, and garlic in the oil, stirring often, until they start to brown, 3-5 minutes.2. Add the vermouth (if using) and simmer until reduced by half, 1-2 minutes.3. Stir in the tomatoes, zest, salt, and 1 cup of water. Simmer until the vegetables are tender, 5-7 minutes.4. Push the vegetables to one side. Add the fish to the open part of the pan. Spoon the vegetables over the fish. Gently shake the pan to distribute the fish evenly. Reduce the heat to low and very gently simmer until the fish flakes easily with a fork, 5-10 minutes.5. Garnish with the fennel fronds. Serve with the lemon wedges. |
|---|---|

PER SERVING (6 oz. fish with sauce): calories 330 | total fat 16 g | sat fat 2.5 g | carbs 11 g | fiber 3 g | total sugar 6 g | added sugar 0 g | protein 33 g | sodium 510 mg

More great poaching combinations

- Carrots, leeks, celery, & zucchini
- Ginger, scallions, miso broth, & spinach
- Bell peppers, onion, tomatoes, garlic, paprika, & lemon

To see my poached fish recipes using these combos, go to nutritionaction.com/poached

Have any good fish stories? Write to Kate Sherwood at healthycook@cspinet.org.

RAISING THE BAR

Real food in a wrapper?

BY LINDSAY MOYER

The bar aisle is buzzing. Nut, nut butter, egg white, probiotic, protein, “smoothie,” fruit, and even “fat” bars are competing with old standbys like granola and cereal bars.

Attention, shoppers: Fresh fruit, crunchy veggies, unsweetened yogurt, nuts, and other whole foods still beat bars any day. But if you want a bar that’s more real food than candy, read on.

Kaamilah Mitchell compiled the information for this article.

A BETTER BAR

Our top picks are *Better Bites*, not *Best Bites*, because they’re still processed snacks that squeeze hundreds of calories into four or five bites of food (though some “minis” hover around 100 calories). Here’s how we chose them:

■ **Real food.** More than a trivial amount of whole food—nuts, fruit, and/or intact whole-grain kernels—and little or no refined-grain flour.

■ **Sugar.** No more than 7 grams (1½ teaspoons) of total sugar. We couldn’t set a limit on added sugars because too few bars bear the new Nutrition Facts label, which discloses how much of the total sugar is added (for most bars, the rest comes largely from fruit).

We waived the sugar limit if most of the bar’s sugar came from fruit (like an RXBAR or Lärabar). But we

know from early label adopters that most bars get no more than 2 grams of their total sugar from fruit.

■ **Low-calorie sweeteners.** No aspartame, sucralose, or acesulfame potassium. All three are rated “avoid.” (See our website chemicalcuisine.org.) Some bars cut sugar by adding (safe) stevia leaf extract and erythritol, which is less likely to cause gastrointestinal distress than other sugar alcohols, like sorbitol or maltitol.

■ **Saturated fat.** No more than 2 grams. That knocks out nearly all bars that are coated or drizzled with chocolate- or caramel-flavored coatings. Both use sat-fat-rich palm and palm kernel oils to stay solid at room temperature.

Protein from Real Food?

Do you *need* a protein bar? Extra protein is unlikely to help you stay full, slim down, or build muscle. But if a bar is your mini-meal, you’re better off with one that packs a good dose of protein.

The best protein bars are mostly real food, like nuts or fruit. Here’s how they stack up:

■ **RXBAR.** This up-and-comer leads the pack with 16 Better Bites. That’s because every RXBAR is largely nuts and dates, plus enough dried egg white powder to hit 12 grams of protein. Too bad the chewy texture wasn’t a hit with some of our taste testers.

■ **Lärabar Protein.** Think of it as a plants-only version of RX. Lärabar Proteins start with the brand’s blue-print—nuts blended with dried fruit—and toss in enough pea protein powder to roughly double the protein. (The calories and protein are similar to RX’s.)

■ **KIND Protein from Real Food.** KIND’s protein bars have enough whole nuts to supply 7 or 8 of its 12 grams of protein. Nice! (The rest is from soy protein isolate and milk powder.)

But KIND may sell the only “real food” protein bars with a candy-like coating drizzled on top. There’s enough palm kernel oil to reach 3½ or 4 grams of saturated fat, so no KIND Protein bars are Better Bites.

■ **Perfect Bar.** Their hefty size and heavy dose of honey and nut butter means around 300 calories, 4 to 5 teaspoons of total sugar, and no Better Bites.

The worst? Think of **Quest** and **ONE** bars as high-protein junk food. Yes, they’re low in sugar because of sugar alcohols, sucralose, or stevia extract. But they have more processed protein and processed fiber than nuts or fruit. What’s more, ONE’s palm kernel oil coating tucks in a quarter of a day’s sat fat.



RXBARs add dried egg whites to fruit & nuts.



All of its sugar comes from fruit.



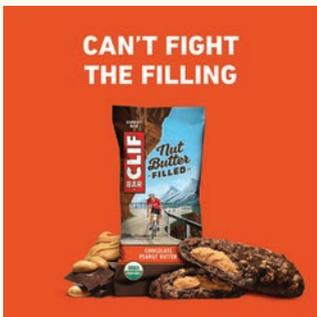
Go Nuts!

Bars that glom together whole nuts have a lot going for them. For starters, they taste great. But their nuts also supply healthy fats and nutrients like magnesium, zinc, vitamin E, etc.

■ **KIND.** KIND racked up eight nut-bar Better Bites, including some with just 2 or 3 grams of added sugar. To find the best, avoid those with chocolate or caramel coating (which didn't get a Better Bite).

■ **Nut butter filling?** Nut bars' latest spin: nut butter filling, often encased in a soft-baked oat bar.

They all had too much saturated fat, sugar, or both for a Better Bite. (And, so you don't waste time trying them, none delivered the thick, creamy layer of nut butter promised by their ads or labels.)



Most "nut butter filled" bars didn't wow us.



Fat Bars?

"Health research says to include lots of healthy fats in your diet and stay away from processed ingredients,

Want good fats? Stick with whole-nut bars like KIND.

sugar, and trans fats," declares **Love Good Fats' website.**

But Love Good Fats' "fats blend" is a mix of healthy nut or sunflower seed butter and unhealthy saturated fats like palm stearin.

The Mint Chocolate Chip, for example, is largely sunflower butter, palm stearin, coconut oil, and whey protein isolate, surrounded by a "chocolate flavored coating" of isomaltooligosaccharides, palm kernel and palm oil, milk protein isolate, etc.

Good? Unprocessed? Umm...



Probiotic Pitch

"Probiotics from your breakfast bar? We've done it," says **KIND Breakfast Probiotics.**

KIND adds the same *Bacillus coagulans* GBI-30 6086 strain that's in **ProBar Live** and **LOLA Probiotic** bars. What does it do? KIND's label doesn't say. Maybe that's because—despite what many people might expect—the evidence that the microbe leads to fewer GI symptoms or a healthier gut is unimpressive. (See Jul./Aug. 2017, p. 8.)

"Probiotics" are mostly about marketing.



Fruit Finds & Frauds

No substitute for fresh fruit, but a good bet.

The next best thing," say **KIND Pressed Strawberry Apple Cherry Chia Bars.**

It's true that no bar beats fresh fruit. (And since when are *apples* messy?) But at least KIND Pressed bars are indeed dried fruit. Another find: **Lärabars** ("food made from food") are mostly dried fruit blended with nuts.

The frauds:

■ **Clif Organic Fruit Smoothie Filled.** Some fillings—nut butter, date paste, dried fruit—are decent. But juice concentrates and fruit powders in a smoothie? Afraid so.

■ **Nutri-Grain.** "Made with real fruit" means "made with more sugar and corn syrup than fruit purée concentrate."

"In an ideal world, we'd be able to carry around a box of fresh strawberries everywhere we go, but since that could get a little messy, we've created the



Good Grains

Want grains (typically intact oats)? Some 100% whole-grain picks:

■ **KIND Healthy Grains.** All but one variety are Better Bites. Not too shabby.

■ **Kashi Chewy.**

Kashi: plenty of intact whole grains you can see.

Kashi's chewy granola bars are on a par with KIND's. And both sure beat **MadeGood**, which only stays below our sugar limit because its bars are tiny. Ignore MadeGood's "nutrients found in one serving of vegetables" claim. You want vegetables, not their "extracts."

■ **KIND Breakfast.** No "breakfast bars" are low enough in sugar for a Better Bite, partly because they're larger than most. But KIND's tasty Peanut Butter bar just missed.

Other grain bars missed by a mile:

■ **Bobo's.** The Nutrition Facts are for just half, so each (3 oz.) bar has 340 to 380 calories.

■ **Clif.** "Whether you're on a 150-mile bike ride or exploring a new trail, this energy bar is built to sustain your adventure," says Clif's [website](#). Maybe. But if your adventure is a between-meal snack, other bars beat 4½ to 6 teaspoons of total sugar (brown rice syrup is the first ingredient). 🍌

Bar None

Better Bites (✓) have no more than 2 grams of saturated fat and 1½ teaspoons (7 grams) of sugar. (We waived the limit if most of the sugar came from fruit.) They also have more than a trivial amount of whole food (nuts, fruit, and/or intact whole-grain kernels) and little or no refined-grain flour. And they're free of sucralose, aspartame, and acesulfame potassium. Bars are ranked from least to most saturated fat, then sugar, then most to least protein, then least to most calories.

	Calories	Sat Fat (g)	Total Sugars (g)	Protein (g)
Protein (weight of 1 bar)				
LOLA Probiotic (50 g) ¹	200	1	3.5	12
✓ Lärabar Protein—except Chocolate Peanut Butter Cup (52 g) ¹	220	1	4.5	11
✓ RXBAR—except Coffee Chocolate (52 g) ¹	210	1.5	3.5	12
Protein One (27 g) ¹	90	2	0	10
Quest (60 g) ¹	190	2	0.5*	20
✓ Kashi Go Dark Chocolate + Almonds + Sea Salt (50 g)	220	2	1.5	12
Luna (48 g) ¹	200	2.5	2	8
Special K Protein Snack (35 g) ¹	160	2.5	2.5	8
RXBAR Coffee Chocolate (52 g)	210	2.5	3	12
Lärabar Protein Chocolate Peanut Butter Cup (52 g)	230	2.5	4.5	11
Fiber One Protein Nut (40 g) ¹	190	3	1	10
Clif Organic Whole Lotta (56 g) ¹	240	3	4	10
Perfect Bar (62-71 g) ¹	310	3	4.5	14
Nature Valley Protein (40 g) ¹	190	3.5	1.5	10
Fiber One Protein (33 g) ¹	140	3.5	1.5	6
Luna Protein (45 g) ¹	180	3.5	3.5	12
ONE Basix (60 g) ¹	210	4	0	20
KIND Protein from Real Food (50 g) ¹	250	4	2	12
ONE (60 g) ¹	220	6	0 ⁵	20
Love Good Fats (39 g) ¹	200	7	0.5	8

Granola (weight of 1 bar)				
✓ Nature Valley Fruit & Nut Cranberry & Pomegranate (32 g)	130	0	1.5	2
Kashi Chewy Trail Mix (35 g)	140	0	2	3
✓ Nature Valley Fruit & Nut Trail Mix (35 g)	140	0.5	1.5	3
✓ MadeGood (24 g) ¹	90	0.5	1.5	1
Kashi Chewy Cherry Dark Chocolate (35 g)	130	0.5	2	2
Fiber One Chewy 90 Calorie (23 g) ¹	90	1	1	1
✓ Kashi Chewy—except Cherry Dark Chocolate or Trail Mix (35 g) ¹	140	1	1.5	4
✓ KIND Healthy Grains—except Dark Chocolate Chunk (35 g) ¹	150	1	1.5	3
KIND Simple Crunch (2 bars, 40 g) ¹	180	1	2	4
✓ Kashi Layered Dark Chocolate Coconut (32 g)	120	1.5	1.5	3
✓ Nature's Path Love Crunch Dark Chocolate & Peanut Butter (30 g)	150	1.5	1.5	3
KIND Healthy Grains Dark Chocolate Chunk (35 g)	150	1.5	2	2
Nature Valley Crunchy (2 bars, 42 g) ¹	190	1.5	2.5	3
Clif (68 g) ¹	250	1.5	5	10
Fiber One Chewy (40 g) ¹	140	2	2	3
Nature Valley Sweet & Salty (35 g) ¹	160	2.5	2	3

	Calories	Sat Fat (g)	Total Sugars (g)	Protein (g)
Clif Organic Fruit Smoothie Filled (50 g) ¹	230	2.5	2.5	5
Bobo's (86 g) ¹	350	9	4	6

Breakfast (weight of 1 bar)

Kashi Soft Baked (35 g) ¹	130	0	2.5	2
Nutri-Grain Soft Baked (37 g) ¹	130	0.5	3	2
KIND Breakfast Protein (2 bars, 50 g) ¹	220	1	2.5	8
KIND—Breakfast or Probiotics (2 bars, 50 g) ¹	220	1	2.5	4
Nature's Path Organic Sunrise Bars (35 g) ¹	140	1	2.5	3

Nut (weight of 1 bar)

✓ KIND Nuts & Spices—Honey Roasted Nuts & Sea Salt, Madagascar Vanilla Almond, or Maple Glazed Pecan & Sea Salt (40 g) ¹	210	1.5	1	6
✓ KIND Fruit & Nut (40 g)	200	1.5	1.5	6
✓ KIND Plus Pomegranate Blueberry Pistachio + Antioxidants (40 g)	180	1.5	2	4
✓ KIND Blueberry Pecan (40 g)	190	1.5	2	4
✓ KIND Apple Cinnamon & Pecan (40 g)	190	1.5	2.5	4
✓ Nature Valley Roasted Nut Crunch (35 g) ¹	190	2	1.5	6
✓ Special K Nourish Chewy Caramel Almond Sea Salt (33 g)	170	2	1.5	4
✓ KIND Blueberry Vanilla & Cashew (40 g)	180	2	1.5	4
Clif Mojo (45 g) ¹	210	2	2	7
KIND Nuts & Spices—except Honey Roasted Nuts & Sea Salt, Madagascar Vanilla Almond, or Maple Glazed Pecan & Sea Salt (40 g) ¹	190	3.5	1	5

Nut Butter (weight of 1 bar)

KIND Nut Butter Filled (37 g) ¹	170	2	2	4
Kashi Chewy Nut Butter (35 g) ¹	150	2.5	2	3
Clif Organic Nut Butter Filled (50 g) ¹	230	2.5	2.5	6
Nature's Path Organic Nut Butter (35 g) ¹	170	3.5	2	5
Nature Valley Crispy Creamy Wafer (36 g) ¹	200	5	2	5
Bobo's Stuff'd (71 g) ¹	330	7	4	7

Blended Fruit & Nut (weight of 1 bar)

✓ Lärabar with Superfoods Blueberry (45 g)	180	0.5	4.5	4
✓ Lärabar with Superfoods Turmeric (45 g)	180	0.5	5	4
✓ Pure Organic Wild Blueberry (48 g)	190	1	4.5	6
✓ Pure Organic Dark Chocolate Berry (48 g)	180	1	5	6
✓ Lärabar—apple, banana, blueberry, carrot, cherry, cinnamon, hazelnut, lemon, or pecan flavors (45-48 g) ¹	200	1.5	4	4
✓ Lärabar Peanut Butter Cookie (48 g)	220	2	4	6
✓ Lärabar Chocolate Coconut Chew (45 g)	210	2	4	4
✓ Lärabar Peanut Butter & Jelly (48 g)	210	2	4.5	6
✓ Lärabar Chocolate Chip Brownie (45 g)	190	2	5	4
ProBar Live (56-57 g) ¹	310	7	1.5	10

Fruit (weight of 1 bar)

✓ KIND Pressed—fruit flavors (35 g) ¹	120	0	4.5	1
✓ Lärabar Fruits + Greens (35 g) ¹	130	0.5	3.5	2
✓ KIND Pressed—chocolate flavors (38 g) ¹	130	1.5	4.5	1

✓ Better Bite. ¹ Average of the entire line or the varieties listed.

⁵ Contains sucralose. *Some varieties contain sucralose.

Daily Saturated Fat Limit (for a 2,000-calorie diet): 20 grams.

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



RIGHT STUFF



Got Protein?

“The future of milk,” [says Bolthouse Farms](#) about its **Plant Protein Milk**, which gets its protein from peas.

Plant milks are surging. One reason: switching to a flexitarian-style diet—one that has more food from plants and less from animals—can help curb the greenhouse gas emissions that are fueling climate change.

And a flexitarian diet that will protect our children’s and grandchildren’s future has no more than one serving of dairy a day, say researchers (see March 2019, p. 3).

Taste-wise, switching to plant-based yogurt or cheese is tough. And many brands are lower in protein and other nutrients than their dairy cousins. But moving to plant milk is a breeze.

We’re soymilk fans, but not everyone is. Good thing pea protein can also turn plant milk into a near-perfect match for dairy.

A 110-calorie cup of Bolthouse **Original** has just 4 grams (1 teaspoon) of added sugar, plus enough added protein (10 grams), potassium, and vitamins A and D to roughly match milk.

Bolthouse also has about twice as much vitamin B-12 and 50 percent more calcium than dairy. Taking a calcium supplement? You may want to cut back.

If you want to skip the Original’s added sugar, the **Unsweetened** has none. Either beats the **Vanilla** (3 tsp.) or **Chocolate** (4 tsp.).

“Rich and creamy with a touch of sweetness,” [says Bolthouse](#).

Sweet!

bolthouse.com—(800) 467-4683

Photos: Bolthouse (top left), TGI Fridays (top right), Kate Sherwood/CSPi (middle), Subbotina Anna/stock.adobe.com (bottom).

FOOD PORN



Be Afraido

“Simply put, Fridays always brings the sizzle,” said **TGI Fridays’** vice president of marketing in an April [press release](#).



“That’s why we decided to expand the Sizzling menu for a limited time only—with taste innovations that celebrate everyone’s favorite flavors.”

Thanks a lot, Fridays. Expanding seems to be your expertise. Take the **Sizzling Chicken & Shrimp Alfredo**.

“Garlic-marinated chicken breasts with shrimp served with fettuccine tossed in Alfredo sauce, Parmesan and Romano,” says the menu. “Served over melted cheese and topped with Parmesan, Romano, bacon and parsley.”

Yup. Just in case ordinary heart-attack-on-a-plate fettuccine Alfredo isn’t good enough, Fridays now dishes it out in a pool of cheese, topped with...bacon and more cheese!

Your expanding fat cells need to make room for 1,720 calories plus 48 grams of saturated fat (2½ days’ worth), 2,480 milligrams of sodium (a full day’s supply), and a nice load of refined white pasta.

It’s like being served three McDonald’s Quarter Pounders with Cheese all on one plate. So convenient!

“We bring the sizzle like no other,” says Fridays’ TV [ad](#). Don’t be so modest, TGIF. That’s not all you’re bringing.

tgifridays.com—(800) 374-3297



DISH of the month

Roasted Ratatouille

Chop 1 pint cherry tomatoes, 1 baby eggplant, 1 small zucchini, 1 onion, and 1 red or yellow bell pepper. Toss with 3 Tbs. olive oil. Roast in a 450°F oven until tender, 15-25 min. Season with ¼ tsp. kosher salt.

quick tip

For crisp celery that stays fresh longer, lose the plastic bag. Wrap it in foil instead. Use the large outer stalks for stocks, soups, and stews. Save the tender inner stalks and leaves for salads.

