

# Nutrition *Action*

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CENTER FOR SCIENCE IN THE PUBLIC INTEREST

## Six Reasons to Eat Less Red Meat

The latest links to heart disease, cancer, & diabetes

BY BONNIE LIEBMAN

“**R**esearchers believe they have found a new link between the consumption of red meat and heart disease,” explained the NBC News report in April. “That’s something called carnitine.”

Heart disease. Cancer. Diabetes. Stroke. All have been tied to red meat in recent years. Yet Americans still eat more red meat (beef, pork, lamb, and veal) than poultry and seafood combined.

Here’s why you might want to think twice before you toss that burger or steak on the grill.

*Continued on page 3.*



MEMO FROM MFJ

# Getting to Safe Sodium



Eating less red meat? Check. Avoiding trans fat? Check. Eating more vegetables and fruit? Check. Limiting sodium to a healthful level? Oops.

Of all the aspects of a healthy diet, perhaps the toughest one to achieve is

keeping sodium down. *The Dietary Guidelines for Americans* recommends that younger adults consume no more than 2,300 milligrams of sodium per day. Middle-aged and older people, African Americans, and anyone with high blood pressure should aim for no more than 1,500 mg per day.

But the average American consumes roughly 3,800 mg of sodium a day—men more, women less. That extra sodium may be the most dangerous thing in our diet, unnecessarily

killing tens of thousands of people every year due to heart attacks and strokes.

To give you a sense of how hard it is to get down to 1,500 milligrams of sodium, consider this: two slices of bread have 200 to 400 mg, just half a cup of a typical spaghetti sauce has 300 to 600 mg, and a mere cup of canned soup has 400 to 800 mg. And you'd blow your daily sodium allowance to smithereens by eating a Smoked Turkey Breast sandwich at Panera (1,650 mg) or a Lasagna Classico at Olive Garden (2,830 mg).

Roughly 80 percent of the sodium we consume—most of it from salt—comes from prepared foods. That's why the Center for Science in the Public Interest (publisher of *Nutrition Action*) and others have pressed the food industry to stop dumping so much salt into their products. What's more, we've urged the Food and Drug Administration to set specific limits on sodium.

Food manufacturers argue that reductions should be voluntary, but in 2010 the Institute of Medicine concluded that voluntary reductions over the previous 40 years had no effect. (We're actually consuming *more* sodium now than we did then.) The FDA should limit sodium in packaged foods, the IOM declared.

But if we waited for the FDA to regulate sodium or for industry to voluntarily make major reductions, we'd be eating too much salt for decades.

And even if all companies cut their sodium by 25 percent—which may not be feasible—

we'd still be consuming about 3,000 mg per day. They'd have to slash the sodium in half for us to reach 2,300 mg a day. Forget about 1,500 mg!

The good news: we don't have to wait. We can change our own diets today, starting with reading labels and choosing lower-sodium brands.

Better yet, we can

eat more fresh, unprocessed foods. After all, most natural foods, especially fruits and vegetables, are low in sodium. (A whole pound of broccoli has just 150 mg.) And many are rich in potassium, which helps lower blood pressure. A roasted chicken breast has only around 100 mg of sodium (if it hasn't been injected with salty broth). Oatmeal? It's virtually sodium free.

See you at the farmers' market or the produce display!



To cut the salt, eat more fresh, unprocessed foods.

*Mike Jacobson*  
Michael F. Jacobson, Ph.D.  
Executive Director  
Center for Science in the Public Interest

## Correction

In our March cover story, we incorrectly stated that researcher Katherine Flegal of the Centers for Disease Control and Prevention (CDC) "refused to participate" in a study on weight and mortality. We apologize for the error.

The next *Nutrition Action* will be a combined July/August issue. It should be in your mailbox by late July.

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

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# Six Reasons to Eat Less Red Meat

## The latest links to heart disease, cancer, & diabetes

**H**ow strong is the evidence that we should eat less meat? “We’ve seen that a high-red-meat intake is associated with coronary heart disease, stroke, diabetes, and premature death,” says Adam Bernstein of the Cleveland Clinic. “Other investigators have looked at colorectal cancer. So when you look at the whole picture, I’d say the evidence is very strong at this point.”

And that doesn’t even consider meat’s impact on the health of the planet. Here’s half a dozen reasons to eat less red meat.

### 1. Live longer

In 2012, scientists at the Harvard School of Public Health published data on more than 120,000 participants in the Health Professionals Follow-Up Study and the Nurses’ Health Study. After 28 years, those who ate the most red meat (roughly two servings a day) had a 30 percent higher risk of dying than those who ate the least (about half a serving a day).<sup>1</sup>

“Eating red meat increases the risk of dying early,” says co-author Adam Bernstein, now research director at the Cleveland Clinic’s Wellness Institute.

“We estimated that 8 percent of deaths in women and almost 10 percent in men could be prevented if people consumed less than half a serving per day of red meat,” adds Bernstein. “That’s remarkable.”

(In this study, a serving was three ounces of cooked steak, hamburger, pork chop, or other unprocessed meat, but only one ounce of sausage, ham, or other processed meat and half an ounce of bacon.)

It wasn’t the first time a major study had linked red meat to shorter lives.

In 2009, the NIH-AARP

Diet and Health Study reported results on half a million people.<sup>2</sup> After 10 years, those who ate the most red meat (about five ounces a day) were 30 percent more likely to die than those who ate the least (about two-thirds of an ounce a day). That’s not much compared to what you get in a typical restaurant steak, sandwich, or burger (see “One Serving?”).

“You don’t have to stop eating meat entirely,” says Walter Willett, chair of the department of nutrition at the Harvard School of Public Health, who co-authored the Harvard study with Bernstein. “Eating meat only once a week can eliminate most of the risk.”

### 2. Protect your heart

“Many recommendations for limiting red meat intake are based on its saturated fat and cholesterol content,” says Bernstein.

That’s because red meat is one of the largest sources of saturated fat in the average American’s diet.<sup>3</sup>

“We know that saturated fat can raise LDL, or bad, cholesterol levels,” adds Bernstein. “But what do we know about the whole food?”

So the researchers set out to find whether some sources of protein are

linked to a higher risk of heart disease. “Lo and behold, we saw that people who eat the most red meat have a higher risk,” says Bernstein.

Bernstein, Willett, and their colleagues tracked more than 84,000 women in the Nurses’ Health Study for 26 years.<sup>4</sup> Those who ate the most red meat (at least two servings a day) had a 29 percent higher risk of heart disease than those who ate the least (half a serving a day).

And sticking with lean meat may not eliminate that risk. “Probably a combination of half a dozen different compounds and nutrients lead to the ill-health effects of meat,” suggests Bernstein.

Among them: heme iron, nitrite, salt, and compounds that are created when meats are cooked at high temperatures. “If

## One Serving?



**Panera Smoked Ham & Swiss sandwich**

4 servings



**Outback 14 oz. Ribeye Steak**

(11 oz. cooked)

3 2/3 servings



**Five Guys Bacon Burger**

2 1/2 servings

What some studies call a “serving” of meat isn’t much (3 oz. cooked steak or burger; 1 oz. ham or sausage; 1/2 oz. bacon). Here’s how many of those servings you get in some restaurant foods.



people just zero in on the fat and buy, say, lower-fat deli meats or other processed meats, that's not the healthiest choice," says Bernstein.

In April, Stanley Hazen and colleagues at the Cleveland Clinic published a study pointing a finger at a potential new culprit in meat: carnitine.<sup>5</sup>

"We believe that carnitine ingestion leads to accelerated atherosclerosis, or hardening of the arteries," says Hazen, chair of cellular and molecular medicine at the Cleveland Clinic's Lerner Research Institute.

But carnitine, a nutrient that ferries fuel into our cells' furnaces—the mitochondria—may not cause damage on its own.

"Both in animals and in humans, when

you ingest carnitine, microbes that live in your intestines digest the carnitine," explains Hazen. "And as a byproduct, the microbes make something that gets converted into a compound called TMAO."

And TMAO, which stands for trimethylamine-N-oxide, may be the true troublemaker, says Hazen. (See "TMA Uh-Oh.")

Your everyday diet can affect how much TMAO your microbes make. Hazen and his team fed a large dose of carnitine to omnivores (who reported eating beef, pork, lamb, or other meat almost every day) and to six long-term vegans (who for at least one year had eaten no meat, fish, dairy, or eggs).

The omnivores had a rise in blood

levels of TMAO, but the vegans had virtually none. When Hazen put the omnivores on a cocktail of oral antibiotics (which wipe out gut bacteria) for a week, they made no TMAO either. Three weeks after stopping the antibiotics, they once again did, confirming that gut microbes have a role in forming TMAO.<sup>5</sup>

"In omnivores, who are constantly eating meat, the microbes that like to eat carnitine are more abundant, and they're more likely to make more TMAO from carnitine," notes Hazen.

Then there's the mice. Those fed chow with carnitine from the time they were weaned had twice as much plaque in their aortas as mice that got no carnitine.<sup>5</sup> "They had accelerated heart disease," says Hazen.

## TMA Uh-Oh

How did researchers zero in on TMAO as a new culprit in heart disease? "We've long recognized that two individuals could have the same LDL—or bad—cholesterol, yet one goes on to develop heart disease and one doesn't," says the Cleveland Clinic's Stanley Hazen.

That started the hunt. "First we said, 'Let's look at all the compounds in the blood that differ between people who have heart disease and people who don't,'" recalls Hazen. "And we discovered that TMAO was one of the top things that tracked with risk." But where did the TMAO come from?

When bacteria in our intestines "eat" carnitine or choline, they make TMA (trimethylamine), which gets converted to TMAO (trimethylamine-N-oxide) in the liver (see illustration). Carnitine is found largely in red meat. Egg yolks and liver have the highest levels of choline, but it's also in meat, poultry, fish, grains, vegetables, and other foods.<sup>1</sup>

"You can't get away from choline," says Hazen. "It's in everything, and you don't want to completely eliminate it from your diet. If you got absolutely none, you'd get a deficiency, just like you'd get scurvy if you didn't get any vitamin C. So you can't eat your way out of that problem."

Until we know more, you can hedge your bets by cutting back on red meat and ditching supplements of carnitine, choline, or choline's most common form, phosphatidylcholine (lecithin).

"Unless you've been instructed by your physician to take carnitine, which can happen with mitochondrial disorders or with long-term dialysis, you probably don't need it," says Hazen. "Your body can make all the carnitine it needs even if you're a vegan or never eat any meat."

You don't need choline supplements either. "Deficiencies are exceedingly rare," says Hazen. "We just don't see it in the United States. You have to be very malnourished."

"There's a potential for long-term risk from both carnitine and choline," he adds. "And I know of no clear, hard benefit for



Source: Adapted from *N. Engl. J. Med.* 368: 1575, 2013.

an otherwise healthy person. Supplement companies may argue that they're helpful because they're nutrients. But cholesterol is a nutrient too, and we don't take cholesterol tablets."

And don't bother asking your doctor to test your TMAO. "Unfortunately, the test isn't currently available for clinical use," says Hazen. "It should be before the end of the year."

<sup>1</sup> [www.ars.usda.gov/SP2UserFiles/Place/12354500/Data/Choline/Choln02.pdf](http://www.ars.usda.gov/SP2UserFiles/Place/12354500/Data/Choline/Choln02.pdf).



What's more, he could see *how* the animals' arteries got clogged. The cells that deposit cholesterol in the artery walls were more active, and the animals' livers made fewer bile acids, which shuttle cholesterol into the gut and out of the body.

"The net effect was increased depositing of cholesterol in the artery wall and decreased removal of cholesterol from the artery wall," explains Hazen.

That's mice. Researchers can't feed carnitine to people for years to see if it clogs their arteries. Instead, they look at whether people with high carnitine or TMAO levels have a higher risk of heart disease.

First, Hazen and his team studied roughly 2,600 people who had gone to the Cleveland Clinic for a cardiac catheterization—a procedure that enables doctors to see if the arteries feeding the heart muscle are clogged.

"We found that increased blood carnitine levels in patients strongly predicted increased risks for cardiovascular disease and major adverse events like heart attack, stroke, and death," says Hazen. "But that was only true in subjects who also had high TMAO levels."<sup>5</sup>

In a second study, the researchers reported on roughly 4,000 stable patients who were undergoing a heart evaluation.

Those who had higher blood levels of TMAO were about 50 percent more likely to have a heart attack, stroke, or other cardiovascular event over the next three years (once the researchers took into account risk factors like high blood pressure, smoking, and high LDL cholesterol).<sup>6</sup>

"TMAO was a strong and independent predictor of future heart attack, stroke, and death," says Hazen.

His second study showed that gut bacteria can also make TMAO out of choline, a nutrient that's especially high in egg yolks and liver (see "TMA Uh-Oh").

That's not to say that TMAO's role in heart disease is a done deal. "Our results have to be replicated by others," says Hazen. "We need to look at other populations."

For example, does TMAO predict heart disease in people who have no symptoms or known risk factors for heart disease? Even more important, does lowering TMAO reduce the risk of heart disease?

"There's more that needs to be done," says Hazen. But "these studies identify a new target involved in heart disease."

### 3. Cut your cancer risk

"Limit consumption of processed meat and red meat," the American Cancer Society has been advising Americans since 2002.<sup>7</sup>

"To reduce your cancer risk, eat no more than 18 oz. (cooked weight) per week of red meats, like beef, pork, and lamb, and avoid processed meat such as ham, bacon, salami, hot dogs, and sausages," said a joint 2011 report by the American Institute for Cancer Research and the World Cancer Research Fund.<sup>8</sup>

## Not Nitrite Free



"No nitrites added" may not mean less nitrite. Nitrite and nitrate (which the body can convert to nitrite) occur naturally in meats, and nitrite occurs naturally in the celery powder and sea salt that Applegate and some other brands add.

"That report is very detailed and comprehensive," says the National Cancer Institute's Amanda Cross. Its conclusion: the risk of colon and rectal cancer rises by about 20 percent for every serving of red or processed meat you eat per day.

A few studies have found that red-meat eaters have a higher risk of pancreatic, prostate, or esophageal cancer.<sup>9-11</sup> "But the report considered the evidence convincing only for colorectal cancer," says Cross.

She and her colleagues have spent years trying to find out *how* fresh or processed red meat may lead to colorectal cancer. So far, they've pursued two main pathways.

■ **N-nitroso compounds.** N-nitroso compounds cause cancer in laboratory animals. They're created by the nitrite that's used to color and preserve processed meats like bacon, sausage, and lunch meats.

N-nitroso compounds don't show up in the meat itself (now that companies must add sodium ascorbate or sodium erythorbate to keep N-nitroso compounds from forming in meats that have added nitrite). Instead, the N-nitroso compounds form in the gut in a reaction that's "probably catalyzed by bacteria," says Cross.

That might explain why processed-meat eaters have a higher risk of colorectal cancer. But what about people who eat *unprocessed* red meat?

"When we fed people increasing doses of unprocessed red meat, we saw levels of the N-nitroso compounds that are formed in the gut increase," says Cross.

In contrast, "when we fed the same amount of white meat, we saw absolutely nothing," she adds. "So the obvious question is: What's the difference between red and white meat?"

One possibility: the iron attached to hemoglobin in blood.

"We fed people a low-red-meat diet and then supplemented that diet with blood sausage," explains Cross.<sup>12</sup> "And we saw the same increase in N-nitroso compounds as we did with a high-red-meat diet."

In the NIH-AARP study, the risk of colorectal cancer was higher in people who ate more heme iron, which is found in all meats but predominantly in red meat.<sup>13</sup>

"But we haven't got enough studies that have looked at heme, so we don't have enough data to say how much it or other potential mechanisms matter," says Cross.

■ **Meat mutagens.** "Starting many years ago, scientists found that heterocyclic amines and polycyclic aromatic hydrocarbons are formed when meats are cooked to well done at high temperatures," explains Cross. "Animal studies showed that they are both carcinogenic."

When Cross and co-workers looked at roughly 300,000 men and women in the NIH-AARP Diet and Health Study, they found about a 20 percent higher risk of



colorectal cancer among people who consumed the highest levels of two key heterocyclic amines (HCAs). But they found no link with the major polycyclic aromatic hydrocarbons (PAHs).<sup>13</sup>

“AARP was a large study, but until you’ve seen the association with HCAs in multiple studies, it’s hard to make too much of it,” says Cross.

The good news is that it’s fairly easy to avoid these meat mutagens.

“Studies have shown that the levels of HCAs and PAHs are much lower in meats that are cooked at lower temperatures and are not well done,” says Cross. Marinating the meat before you cook it—and pouring off the marinade—also cuts the mutagens. (See “Good Grilling.”) That advice also applies to poultry and fish.

“The levels of HCAs are quite high in barbecued chicken,” says Cross. But studies find a lower risk of colorectal cancer in chicken eaters. “So the HCAs aren’t the be all and end all of this story.”

#### 4. Skip a stroke

“If you want to reduce your risk of stroke, there are healthier choices than meat,” says the Cleveland Clinic’s Adam Bernstein.

That may come as no surprise, given that most strokes that strike Americans are caused by a clogged artery—rather than a ruptured artery, or hemorrhage—in the brain.

When Bernstein and Willett followed more than 125,000 people for more than 22 years, the risk of a non-hemorrhagic stroke rose by 30 percent for every one to two ounces of processed meat—and by 21 percent for every four to six ounces of unprocessed meat—eaten per day.<sup>14</sup>

And in a meta-analysis of six studies on more than 300,000 people, Swedish scientists reported that the risk of a

## Good Grilling

**You can’t take the heme iron out of meat, but you can minimize the heterocyclic amines (HCAs) when you grill meat, chicken, or fish. Here’s how:**

■ **Marinate.** It doesn’t seem to matter what’s in the marinade or how long the food sits in the liquid. You can dip it in right before you throw it on the grill.

■ **Microwave before cooking.**

You can eliminate 90 percent of the HCAs if you microwave meat or chicken first for 1½ to 2 minutes and pour off the juices.

■ **Try seafood.** As long as you don’t char seafood, it should have fewer HCAs than meat or poultry.

■ **Keep it moist.** The drier and more well done the meat, the more HCAs you get. Hot dogs and sausages seem to have fewer HCAs, perhaps because their casing prevents drying.

■ **Bake, roast, or stir-fry.** Grilling and barbecuing create the most HCAs. Next come broiling and pan-frying (though frying at a lower temperature helps). Baking, roasting, and stir-frying create less.

■ **Flip frequently.** Turning over meat or poultry every minute cuts the HCAs by 75 to 95 percent because the surface temperature stays lower.

■ **Don’t eat the pan drippings.** If the meat or poultry is well done, the drippings can have more HCAs than the meat or poultry itself.

■ **Cook in liquid.** Boiling, steaming, poaching, or stewing generates no HCAs because the temperature never tops the boiling point of water. Ditto for microwaving.

■ **Eat your veggies.** Veggieburgers and cooked vegetables generate few or no HCAs. And cruciferous vegetables like broccoli and brussels sprouts may actually help the liver detoxify HCAs.

Sources: *Nutrition Reviews* 63: 158, 2005 and *Comp. Rev. Food Sci. Food Safety* 10: 52, 2011.



non-hemorrhagic stroke was 12 percent higher for every serving of red meat eaten per day.<sup>15</sup>

Bernstein and Willett’s study estimated that swapping one serving a day of red meat for poultry would cut the risk of stroke by 27 percent, that trading a serving a day for fish or nuts would cut the risk

by 17 percent, and that trading a serving a day for dairy would cut the risk by about 10 percent.

“Switching to poultry stood out as a way to reduce stroke risk,” says Bernstein.

What’s more, high blood pressure is the biggest risk factor for stroke. And the diet that lowered blood pressure in the DASH (Dietary Approaches to Stop Hypertension) study has only about two servings of meat a week.<sup>16</sup> Instead, it’s loaded with nutrient-rich vegetables and fruits, with two daily servings of low-fat dairy foods.

“At the same time you’re eating the red meat, you’re not eating the healthier protein sources,” says Bernstein. So it’s not just the bad stuff in red meat—but what you’re missing when you eat red meat—that causes problems.

#### 5. Dodge diabetes

Processed red meats have been linked to a higher risk of type 2 diabetes in several studies.<sup>17</sup> Now some studies are also picking up a link with unprocessed red meats.

One example: Harvard researchers tracked more than 200,000 men and women for up to 28 years. The risk of type 2 diabetes increased by 32 percent for every two ounces of processed meat—and by 12 percent for every three ounces of unprocessed meat—eaten per day.<sup>18</sup>

“We’re not yet sure just how red meat raises the risk of diabetes,” says Willett. “We have some evidence that the high amounts of heme iron found in red meat may play a role.”

People with iron overload (hemochromatosis) were the first clue.

“We know that the accumulation of iron due to hemochromatosis can cause diabetes by damaging the cells that secrete insulin,” says Willett.

The fats in red meat may also play a role. “Polyunsaturated fatty acids are

related to lower risk, and red meat has very low amounts,” notes Willett.

In the Harvard study, people who ate about a quarter cup of nuts a day—nuts are rich in polyunsaturated fat—had a 21 percent lower risk of diabetes than those who ate one serving of red meat.

“At a minimum, red meat will displace healthier fatty acids found in other sources of protein,” says Willett. Another possibility: the N-nitroso compounds generated by red meats may be toxic to insulin-making cells in the pancreas.

“Carnitine metabolites could also damage cells that secrete insulin,” says Willett, referring to the new findings on TMAO. “I suspect that more than one factor is involved,” he adds. “This is usually the case for the most damaging risk factors like smoking or obesity.”

## 6. Protect the Earth

How does red meat harm the environment? The core problem is that growing meat is so inefficient.

“It takes 7 to 8 pounds of feed to produce a pound of beef and 5½ to 6 pounds of feed to produce a pound of pork,” says Robert Lawrence, professor of environmental health sciences, health policy, and international health at the Johns Hopkins Bloomberg School of Public Health in Baltimore.

In fact, most of U.S. farming is devoted to growing animal feed.

“About 60 to 70 percent of soybeans and a slightly higher percentage of corn goes for animal feed rather than as feed for humans or other uses,” Lawrence notes.

The water and fossil fuels needed to grow all that grain and the sheer number of animals consumed in the United States cause considerable damage:

■ **Water.** “It requires about 1,000 tons of water to produce a ton of grain,” explains Lawrence. “Worldwide, it’s estimated that 80 percent of groundwater from shallow and deep aquifers is used for agricultural purposes, and, increasingly, that purpose is irrigating crops for animal feed.”

And it takes fuel to get that water.

“As we rely more and more on groundwater for irrigation in areas that aren’t getting enough natural rainfall, we

## Climate & Cows



Cows emit greenhouse gases. So does the fertilizer, deforested topsoil, and fuel that we use to irrigate and transport their feed.

need more and more energy to pump and distribute water to produce the feed.”

■ **Methane.** “As ruminants, cattle digest the cellulose in feed in their rumens,” explains Lawrence. That produces methane gas that the cattle get rid of either by belching or passing wind.

And methane is a potent greenhouse gas. “It has 23 times the heat-trapping capacity of carbon dioxide,” says Lawrence.

■ **Nitrous oxide.** “Molecule for molecule, nitrous oxide has about 200 times the heat-trapping capacity of carbon dioxide,” says Lawrence. “Nitrous oxide comes from the intense application of nitrous fertilizers for the soy and corn being grown for animal feed.”

■ **Deforestation.** When forests are cut down to make pasture or farmland to feed animals, we lose a “carbon sink”—that is, we lose the trees that soak up and store heat-trapping carbon dioxide.

“But worse than that, the soil is exposed and often tilled to prepare it for seeding for pasture,” says Lawrence. “As soon as you begin to turn over soil to create pastureland, the organic material that’s trapped in the topsoil is exposed to the oxygen in the air and carbon dioxide is released.”

And then comes fertilizer. “Particularly in tropical areas, the soil is lacking in nutrients, and when you start fertilizing that land, nitrous oxide is released.”

■ **Solid waste.** “Big open cesspits can contain as much as three million gallons of urine and feces in a typical hog CAFO,” says Lawrence. (“CAFO” stands for concentrated animal feeding operation.)

“A lot of anaerobic digestion goes on in the waste, which leads to methane production,” he adds. And using tarps to trap the methane “has been a big disappointment.”

It’s not just pigs. “The waste in big cattle feedlots can be properly composted, but it almost never is,” says Lawrence. “In a typical operation, the manure is just bulldozed into big mounds, so there’s a release of methane.”

■ **Transportation.** “When animals in smaller numbers were grown on smaller farms, the feed was in the pasture or in the hay that was laid up for the winter,” says Lawrence. “Now we’ve moved animals into confinement, so we have to transport feed to them.” And that takes more fossil fuels. 🍌

<sup>1</sup> *Arch. Intern. Med.* 172: 555, 2012.

<sup>2</sup> *Arch. Intern. Med.* 169: 562, 2009.

<sup>3</sup> [riskfactor.cancer.gov/diet/foodsources/sat\\_fat/sf.html](http://riskfactor.cancer.gov/diet/foodsources/sat_fat/sf.html).

<sup>4</sup> *Circulation* 122: 876, 2010.

<sup>5</sup> *Nature Med.* 2013. doi:10.1038/nm.3145.

<sup>6</sup> *N. Engl. J. Med.* 368: 1575, 1647, 2013.

<sup>7</sup> *CA Cancer J. Clin.* 62: 30, 2012.

<sup>8</sup> [www.dietandcancerreport.org/cup/current\\_progress/colorectal\\_cancer.php](http://www.dietandcancerreport.org/cup/current_progress/colorectal_cancer.php).

<sup>9</sup> *Cancer Epidemiol. Biomarkers Prev.* 16: 2664, 2007.

<sup>10</sup> *Am. J. Epidemiol.* 170: 1165, 2009.

<sup>11</sup> *Am. J. Gastroenterol.* 106: 432, 2011.

<sup>12</sup> *Cancer Res.* 63: 2358, 2003.

<sup>13</sup> *Cancer Res.* 70: 2406, 2010.

<sup>14</sup> *Stroke* 43: 637, 2012.

<sup>15</sup> *Stroke* 43: 2556, 2012.

<sup>16</sup> *N. Engl. J. Med.* 336: 1117, 1997.

<sup>17</sup> *Diabetologia* 52: 2277, 2009.

<sup>18</sup> *Am. J. Clin. Nutr.* 94: 1088, 2011.

## The Bottom Line

- Eat as little red and processed meat as possible.
- Replace red meat with beans, nuts, soy-based veggie meats, poultry, or fish.
- Don’t take carnitine, lecithin, or choline supplements.



## Ginkgo Gone



**G**inkgo biloba—one of the top-selling herbal supplements—causes cancer in laboratory animals.

Scientists with the National Toxicology Program (NTP), which is part of the National Institutes of Health, gave male and female rats and mice three different doses of *Ginkgo biloba* extract five times a week. After two years, the researchers found “clear evidence” that the ginkgo caused liver cancer in mice and “some evidence” that it caused thyroid cancer in rats. Some of the mice had especially aggressive liver cancers, and some had more cancers than had ever been seen in an NTP lab.

The Food and Drug Administration has been telling companies to stop adding ginkgo to foods or drinks, but in 1994 Congress passed a law that makes it harder for the agency to ban unsafe ingredients in supplements than in foods.

**What to do:** Don’t take ginkgo alone or in drinks or multivitamins. Although the cancers showed up in animals given large doses, no amount of a carcinogen is safe. And keep in mind that ginkgo doesn’t improve memory or concentration, as some supplement makers claim. Several large clinical trials have found no evidence that the supplement delays memory loss or other cognitive decline.

[www.ntp.niehs.nih.gov/ntp/htdocs/LT\\_rpts/TR578\\_508.pdf](http://www.ntp.niehs.nih.gov/ntp/htdocs/LT_rpts/TR578_508.pdf)

## Mercury & Diabetes

**S**tudies in animals suggest that mercury can damage the pancreatic cells that produce insulin. Now scientists have found a link between mercury and diabetes in people.

Researchers followed 3,875 adults aged 20 to 32 in the Coronary Artery Risk Development in Young Adults (CARDIA) study. All supplied toenail clippings when they entered the study.

Those with the highest levels of mercury in their toenails had a 65 percent greater risk of diabetes over the next 18 years than those with the lowest levels.

Interestingly, people with higher mercury levels were healthier—they were less likely to be overweight, had smaller waists, did more exercise, and were less likely to smoke. They were also more educated and consumed more magnesium, omega-3 fats, and fish (which is probably where they got the mercury).

Yet when the researchers took those and other factors into account, the high-mercury group still had a higher risk of diabetes.

**What to do:** This study doesn’t prove that mercury causes diabetes, but to protect the developing nervous system, health authorities already advise children and some women (those who are nursing, pregnant, or may become pregnant) to avoid mercury.

Our advice: those groups should eat no *albacore* tuna, shark, swordfish, king mackerel, or tilefish, and should limit *light* tuna to 2 ounces a week (half that much for children under 55 pounds). Other adults can eat up to 3 ounces of albacore—or 12 ounces of light—tuna a week.

Everyone should shoot for two servings of fish a week. Low-mercury fish include salmon, freshwater trout, catfish, and tilapia.

*Diabetes Care* 2013. doi:10.2337/dc12-1842.

## Folic Acid: Not Guilty

**F**olic acid is a B vitamin that lowers the risk of spina bifida and other neural tube birth defects. But some scientists have worried that it might cause cancer at high doses.

So researchers examined data from 13 trials on nearly 50,000 people who took, on average, 2,000 micrograms of folic acid a day or a placebo for five years. The results: folic acid takers had no higher risk of cancers of the large intestine, breast, prostate, lung, or any other site. Nor did the investigators find a trend toward greater risk in participants who took folic acid for more than five years.

**What to do:** You can get the Recommended Dietary Allowance (400 micrograms a day) by eating a diet rich in fruits and vegetables. However, women who could become pregnant should play it safe by getting 400 mcg of folic acid from a daily multivitamin.

*Lancet* 381: 1029, 2013.

## Happy Eating?

**E**motional eaters report overeating when they’re unhappy. Could they also eat more when they’re feeling upbeat?

Dutch researchers randomly assigned 86 college students to watch movie clips that were selected to make the viewers’ moods better, worse, or no different. Before and after watching the clips, the students filled out questionnaires about their mood.

Then the experimenters brought them bowls of ketchup-flavored potato chips, salty chips, chocolates, and a glass of water. For 15 minutes, while alone with the food, the students filled out more questionnaires.

Among students whose responses indicated that they were “emotional eaters”—that is, their emotions influence what they eat—those who had watched the happy movie clip ate about 100 more calories than those who had watched the sad or neutral clip. Non-emotional eaters ate the same number of calories no matter which clip they saw.

**What to do:** If you’re watching your weight, beware of overeating when you’re happy. And if you know that you overeat when you’re sad, don’t let this study convince you otherwise. Those movie clips might not have triggered the unhappiness that leads some people to overeat. 🍌

*Appetite* 67: 74, 2013.



# BEYOND THE BUZZ

Is what you've heard *true...or just new?*

BY STEPHANIE SCARMO

Should you drink chocolate milk after your daily brisk walk? Do dairy foods raise the risk of ovarian cancer? If you cut out wheat, will those extra pounds melt away?

With so much information—and misinformation—out there, it's hard to know what to believe. Here's the truth about some of the latest buzz.

## Drink chocolate milk after exercise?

"Got milk? Try chocolate after your workout," urged the FitnessMagazine.com article.

When it comes to recovering from intense exercise, a classic childhood beverage has taken the spotlight.

When you're inactive or moving slowly, your body gets energy mostly from burning fat (assuming you haven't just eaten). But for more intense activity (brisk walking, running, cycling, etc.), you can't burn fat fast enough to get all the energy you need. So if you're, say, running for several hours, your body is going to rely more on carbs for the *extra* energy it needs.<sup>1</sup>

"When we're talking about recovery from endurance exercise, you're generally trying to restore muscle glycogen," explains Beth Glace, a sports nutritionist at the Nicholas Institute of Sports Medicine and Athletic Trauma at Lenox Hill Hospital in New York City.

Glycogen is essentially a long chain of glucose (blood sugar). The body converts glucose to glycogen in order to store the glucose in muscles and in the liver. But we don't have much glycogen, especially compared to our vast stores of fat.

So during an intense, prolonged activity, you can run out of glycogen. That's what marathoners are talking about when they say they "hit the wall."

"In more seriously trained athletes, let's say a triathlete, they might do a run in the morning and a swim or bike workout later in the afternoon," says Glace. "So it really becomes crucial for them to restore their glycogen reserves quickly. This is where chocolate milk comes in."

In some studies, drinking chocolate milk immediately after a strenuous workout is one of the best ways to recover quickly—better than sugary sports drinks like Gatorade.<sup>2,3</sup> The milk's naturally occurring sugar (lactose) is half glucose, its protein speeds up glycogen synthesis in the body, and its electrolytes (like potas-



**Unless you're doing intense exercise for several hours several times a day, don't even think about chocolate milk.**

sium and, to a lesser extent, sodium) help you rehydrate. Why *chocolate* milk?

"The extra sugar provides more carbohydrates for energy storage," explains Glace. A typical low-fat chocolate milk has roughly four times more carbs than protein, which may be the optimal ratio to rapidly replenish glycogen stores in muscles.<sup>2,4</sup>

Can you get the carbs and protein in your next meal? Probably, if you eat soon. You restore glycogen more quickly if you eat the carbs and protein within an hour.

Of course, most of us aren't running marathons or cycling competitively for two hours and then doing another intense activity within 24 hours. Do we need a recovery beverage? Not likely.

"A recovery food or drink becomes important if you're doing another hard workout that day," says Glace. "If you're just going for a walk, it probably doesn't matter because you're not burning that much glycogen."

And if you're taking that brisk walk to lose weight, you don't want the 170 or so calories in a cup of chocolate milk...or *any* extra calories, for that matter.

**Bottom Line:** Unless you're doing prolonged, intense exercise on successive days, or more than one strenuous workout on the same day, you don't need chocolate milk (or any food) to recover.

<sup>1</sup> *Am. J. Clin. Nutr.* 61: 968S, 1995.

<sup>2</sup> *Med. Sci. Sports Exerc.* 44: 682, 2012.

<sup>3</sup> *Int. J. Sport Nutr. Exerc. Metab.* 16: 78, 2006.

<sup>4</sup> *Int. J. Sport Nutr. Exerc. Metab.* 13: 382, 2003.

## Skipping breakfast makes you fatter?

"Skipping breakfast to lose weight makes you fatter," reported the UK's *Daily Mail* in October 2012.

"The idea is that people end up overeating later in the day because they think, 'Oh, I skipped breakfast, so now I can eat more at lunch or dinner,'" explains Rania Mekary, a nutrition researcher at Harvard University.

But in a recent effort to debunk common obesity "myths," researchers concluded that there's not enough evidence to prove that eating breakfast protects against weight gain.<sup>1</sup> They relied largely on one of the only clinical trials—and a weak one, at that—that compared how much weight people lost after they were randomly assigned to either eat or skip breakfast.

Among 50 obese women, those who were told to eat breakfast every day for 12 weeks didn't lose (or gain) more weight than those who were told to skip breakfast.<sup>2</sup> (Interestingly, women who had to change their eating habits for the study—that is, breakfast skippers who were told to eat and breakfast eaters who were told to skip—lost more weight than those who didn't change.)

Some large surveys have reported that breakfast eaters weigh less than skippers, but those kinds of studies can't prove cause and effect.<sup>2,3</sup>

**Bottom Line:** There's no good evidence that eating—or skipping—breakfast makes you lose or gain weight.

<sup>1</sup> *N. Engl. J. Med.* 368: 446, 2013.

<sup>2</sup> *Am. J. Epidemiol.* 158: 85, 2003.

<sup>3</sup> *Am. J. Clin. Nutr.* 88: 1396, 2008.



**There's no good evidence that eating—or skipping—breakfast helps you shed pounds.**



## Avoid fast food to dodge asthma?

"Fast food linked to severe asthma in children," said *U.S. News and World Report* in January.

The online news magazine was reporting on a survey of more than half a million children and adolescents in 51 countries. Those who reported eating fast food at least three times a week were 27 to 39 percent more likely to have severe asthma (as well as allergy symptoms and eczema) than those who said that they ate fast food less than once a week or never.<sup>1</sup>

"It's a clue, but it's not nearly the discovery that the media made it out to be," explains Carlos Camargo, an asthma researcher and physician at Massachusetts General Hospital in Boston. "While the study was large, this type of research can't say whether fast food *caused* asthma."

Most asthma gets diagnosed in childhood, but the disease can also strike in adulthood. In fact, asthma affects about 7 percent of U.S. adults aged 18 and over.<sup>2</sup> In 1980, it was just 3 percent.<sup>3</sup> Asthma inflames and narrows the airways in the lungs, which leads to wheezing, coughing, and shortness of breath.

What accounts for the increase in asthma worldwide? It's not clear, although some researchers have speculated that the rise may be due to an increase in "Westernized" diets. But so far, studies haven't found any foods that raise the risk.

Nor do foods seem to help relieve symptoms. "No specific food has been shown to help with asthma control," says Camargo. "It's possible that ensuring adequate intake of specific nutrients, like omega-3 fatty acids or vitamin D, may help," he notes. "But we need large randomized trials to test those possibilities."

One thing that may help control asthma symptoms: losing

excess pounds.

In a small trial, 46 overweight or obese adults were divided into three groups. A third were counseled to cut calories to (on average) 1,170 a day, a third were given pedometers and encouraged to take 10,000 steps per day, and a third were asked to do both.

After 10 weeks, people in the groups that lost the most weight—those who cut calories or cut calories and exercised—reported fewer symptoms (like less wheezing and shortness of breath, and fewer puffs from an inhaler).<sup>4</sup>

**Bottom Line:** There's no good evidence that eating fast food—or any other food—increases your risk of developing asthma. If you have asthma, losing extra weight may help control symptoms.



Food doesn't seem to cause asthma, but losing extra pounds may curb symptoms.

<sup>1</sup> *Thorax* 68: 351, 2013.

<sup>2</sup> *MMWR Surveill. Summ.* 60 Suppl: 84, 2011.

<sup>3</sup> *MMWR Surveill. Summ.* 56: 1, 2007.

<sup>4</sup> *Clin. Exp. Allergy* 43: 36, 2013.

## Taking garlic pills protects your heart?



Don't expect garlic to lower your cholesterol.

for hundreds of years, trying to ward off everything from gangrene and the plague to vampires. And they've been taking garlic pills since the 1980s to lower their cholesterol.

In a 2007 study, Christopher Gardner,

"Supports your cardiovascular system," say the Kyolic bottles.

"Cholesterol's Natural Enemy," boast the Garlique packages.

Sounds like taking garlic supplements keeps heart disease at bay. Not so fast.

People have been eating or using garlic

an associate professor of medicine at Stanford University, put raw garlic and two popular garlic-pill formulations to a rigorous long-term test in 192 adults with moderately high LDL ("bad") cholesterol.

Supplement manufacturers market garlic in a dizzying array of formulations. "But the compounds that end up in garlic oil, aged garlic, and garlic powder, for example, wouldn't necessarily be the same compounds or amounts or proportions that are in fresh garlic," explains Gardner.

So his team randomly assigned roughly a quarter of the participants to eat four grams (around 1½ teaspoons) a day of raw garlic. Another quarter were given Garlicin (powdered garlic) pills, while a quarter got Kyolic (aged garlic) pills and a quarter were told to take a placebo.<sup>1</sup> (The garlic-pill takers were given enough Garlicin or Kyolic to match the active compounds in the raw garlic.)

No matter how hard the researchers tried—they mixed the raw garlic into sandwiches—the raw-garlic eaters could

tell which group they were in. "Our garlic pills, however, were successfully blinded," notes Gardner.

After six months, LDL cholesterol, HDL ("good") cholesterol, and triglycerides were no different in the garlic eaters and the garlic-pill takers than in those who got the placebo.

"The backlash we got when we published our study! I must have had 50 offers from supplement companies of, 'Hey! I know why your study didn't work. You didn't use my pill,'" recalls Gardner.

"But the industry, they want to sell pills. I wouldn't buy any of these supplements to lower my blood cholesterol."

**Bottom Line:** Leave the garlic pills on the shelf. If your LDL ("bad") cholesterol is above "optimal" (if it's 100 or more), cut calories (if you need to lose weight), exercise more, and eat a healthy Omni-Heart diet (see "Mediterranean Mix-Up," May 2013).

<sup>1</sup> *Arch. Intern. Med.* 167: 346, 2007.



## Eating wheat packs on the pounds?

“Lose the wheat, lose the weight, and find your path back to health,” proclaims cardiologist William Davis in his best-selling book, *Wheat Belly*.

Wheat consumption and obesity rates have increased in the United States since the mid-1980s, as Davis notes. We’re also eating more calories now, although wheat—along with sugars, fats, and oils—accounts for much of the increase.

And cutting bread, bagels, pasta, tortillas, pizza crust, muffins, pancakes, crackers, croissants, cereal, cookies, cakes, doughnuts, pies, pita chips, pretzels, and dozens of other wheat foods out of your diet would certainly make a dent in your weight...assuming you didn’t replace their calories with calories from other foods.

However, no good studies have tested whether wheatless diets are any better for losing weight—or keeping weight off—than other popular weight-loss diets.

The truth is that you can lose weight on just about *any* diet that cuts calories. Unfortunately, after six months or a year, most people begin to regain the weight they lost, no matter which foods they cut to lose the weight.<sup>1</sup>

“What we’re really interested in is a scenario that helps you lose weight and keep it off in the long term,” says Julie Jones, professor of foods and nutrition at St. Catherine University in Saint Paul, Minnesota. And there’s no good evidence that slashing carbs helps you do that.

“Avoiding wheat isn’t the answer,” says Jones, who recently reviewed the evidence for many of *Wheat Belly*’s claims.<sup>2</sup>

Some people—those who have celiac disease or gluten intolerance—need to avoid wheat. “But don’t do it to lose weight,” says Jones. “This, like the rest of all fad diets, will run its course.”

**Bottom Line:** Unless you cut calories, eliminating wheat won’t help you lose weight or keep it off.

<sup>1</sup> *N. Engl. J. Med.* 360: 859, 2009.

<sup>2</sup> *Cereal Foods World* 57: 177, 2012.



For losing weight—and keeping it off—there’s nothing magical about going wheat free.

## Dairy foods cause ovarian cancer?

“Milk linked to ovarian cancer,” reported CBS News in 2004.

Dairy foods—especially low-fat milk, yogurt, and cheese—supply calcium and vitamin D for bones and may protect against colorectal cancer and high blood pressure.<sup>1</sup> So how did dairy get a bad rap when it comes to the seventh leading cause of cancer deaths among women worldwide?

In 1989, a study reported that women with ovarian cancer were more likely to say that they ate foods that were higher in lactose, the naturally occurring sugar in milk.<sup>2</sup>

But having a disease can color what people remember eating. To avoid that possible bias, researchers pooled the data from 12 studies that asked more than half a million healthy women what they ate and then followed them for the next 7 to 20 years.

Women who consumed the most milk, cheese, yogurt, and ice cream were no more likely to be diagnosed with ovarian cancer than those who ate the least. However, the researchers found a “weak” (their word) 19 percent increased risk in women who consumed at least 30 grams of lactose per day.<sup>3</sup>

To get 30 grams, you’d need to consume roughly 2½ cups of milk, 2 cups of yogurt, 3 cups of ice cream, greek yogurt, or cottage cheese, or 27 pounds of cheddar.

How might lactose raise the risk of ovarian cancer if dairy doesn’t? It’s not clear. Could dairy foods have some other nutrients that lower risk and counteract the lactose? Could genes play a role? Or could the “weak” link simply be due to chance?

“If there is an increased risk of ovarian cancer, it’s only at very high intakes of lactose,” says Shelley Tworoger, an ovarian cancer researcher at Harvard University. “Even then, it was still a relatively modest association.”

In 2007, the World Cancer Research Fund and the American Institute for Cancer Research declared that there



Only “weak” evidence links large amounts of lactose to ovarian cancer.

wasn’t enough evidence to reach a conclusion about dairy’s effect on the risk of ovarian cancer.

So what *does* increase risk? A family history of ovarian cancer, having used hormone therapy, or never having been pregnant. So may excess weight. (Oral contraceptive use can *lower* risk, notes Tworoger.)

One of the reasons the survival rate for ovarian cancer is so low: the disease often causes no noticeable symptoms until it has spread to a distant site, when the five-year survival rate drops to only about 27 percent.

But new advances to detect the cancer early may be coming.

In January, researchers at Johns Hopkins University in Baltimore found that PAP smears, which are routine screening tests for cervical cancer, could detect telltale DNA from endometrial and ovarian cancers as well.<sup>4</sup>

“There’s a lot of potential, but more work needs to be done to understand if we can use this to identify tumors in healthy women that you wouldn’t otherwise be able to identify,” says Tworoger.

**Bottom Line:** There’s only weak evidence that large amounts of lactose (equal to what you’d get in 2½ glasses of milk) increase the risk of ovarian cancer. 🍌

<sup>1</sup> *Br. J. Nutr.* 96 Suppl. 1: S94, 2006.

<sup>2</sup> *Lancet* 2: 66, 1989.

<sup>3</sup> *Cancer Epidemiol. Biomarkers Prev.* 15: 364, 2006.

<sup>4</sup> *Sci. Transl. Med.* 5: 167, 2013.



# "IT'S EASY EATING GREEN"

BY KATE SHERWOOD

All vegetables are good vegetables, but the leafy greens are superstars. Spinach, swiss chard, kale, mustard or collard greens—take your pick. What to do with them? Steam a green (we're using quick-cooking baby kale here), sauté up a topping (it will take you 10 minutes, tops), and toss. It's that simple. 🍴

Got a question or suggestion? Write to Kate at [healthycook@cspinet.org](mailto:healthycook@cspinet.org).

Boil 8 oz. of baby kale until tender but still crisp (about 30 seconds), or steam for about 2 minutes. Drain well, then toss with any of these six toppings.

(Note: Calories and other numbers are for one-quarter of the kale-plus-topping.)



In a large skillet, sauté ½ lb. sliced cremini mushrooms in 2 Tbs. olive oil until well browned, 5-7 minutes. Add 1 Tbs. reduced-sodium soy sauce and 1 Tbs. balsamic vinegar and cook for another minute.

110 cals; 1 g sat fat; 160 mg sodium; 9 g carbs; 2 g fiber; 4 g protein



Sauté 3 cloves sliced garlic with 1 cup drained and diced no-salt-added canned whole peeled tomatoes in 2 Tbs. olive oil for 3-5 minutes. Garnish with ¼ cup shredded parmesan cheese and freshly ground black pepper.

110 cals; 2 g sat fat; 110 mg sodium; 10 g carbs; 2 g fiber; 5 g protein



Slice 5 cloves garlic, then sauté in 2 Tbs. olive oil with ¼ cup pecan pieces until garlic is lightly golden, about 1 minute. Season with 1 Tbs. balsamic vinegar, freshly ground black pepper, and ¼ tsp. salt.

110 cals; 1 g sat fat; 150 mg sodium; 9 g carbs; 2 g fiber; 3 g protein



Slice a large onion. In a large skillet, sauté the onion in 2 Tbs. olive oil until golden brown, 5-7 minutes. Season with 1 Tbs. balsamic vinegar, ¼ tsp. salt, and freshly ground black pepper. Garnish with ¼ cup walnut pieces.

110 cals; 1 g sat fat; 150 mg sodium; 9 g carbs; 2 g fiber; 3 g protein



Remove 4 oz. chicken or turkey sausage from the casing. Sauté with 1 cup halved cherry or grape tomatoes in 1 Tbs. olive oil, breaking sausage up into small pieces, until browned and cooked through, 3-5 minutes. Season with freshly ground black pepper.

140 cals; 1.5 g sat fat; 190 mg sodium; 7 g carbs; 2 g fiber; 8 g protein



Whisk together 2 tsp. toasted sesame oil, 1 Tbs. reduced-sodium soy sauce, and 2 Tbs. balsamic vinegar. Garnish with 2 Tbs. sesame seeds and 2 tsp. grated ginger or a ½-inch piece of ginger cut into thin matchsticks.

100 cals; 1 g sat fat; 160 mg sodium; 9 g carbs; 3 g fiber; 4 g protein





# Sweet Freeze

## What's new in novelties

BY JAYNE HURLEY & BONNIE LIEBMAN

"It's always been about the tub," declared a 2012 *Bloomberg Businessweek* article on frozen desserts. Maybe so, but frozen novelties—single-serve sticks, cones, cups, and sandwiches—have managed to capture about 20 percent of the market.

And novelties have a big plus: you know exactly what one portion is. What's more, some people take longer to eat frozen sweets on a stick than in a bowl, which may keep them from eating more. The catch: you've got to pick the right ones.

Information compiled by Paige Einstein.



More protein and calcium than ice cream bars.

### GO GREEK

"2X the Protein of regular frozen yogurt," says the Yoplait Greek Frozen Yogurt Bars box. That's true—and it's a reason to go greek—but don't expect as much protein as you'd get in a non-frozen greek yogurt.

In the refrigerated yogurt aisle, single-serve tubs of sweetened non-fat Chobani, Fage, and Dannon Oikos,

for example, deliver 12 to 16 grams of protein for their roughly 130 calories. That's about twice the protein you'd get in regular yogurt. (Plain non-fat greek yogurt has 15 to 18 grams of protein.)

In the freezer case, on the other hand, you'll find 5 to 6 grams of protein and 80 to 90 (mostly fat-free) calories in bars from companies like Ciao Bella Adonia, Weight Watchers, Yasso, and Yoplait. (Other brands may have less, so check the label to see that you're getting more than the 2 to 4 grams of protein that are in regular frozen yogurt bars or ice cream bars.)

The extra milk or whey that supplies the frozen greek yogurts' protein also has calcium, so you get 10 to 15 percent of a day's worth in each bar. That's about the same as refrigerated greek yogurt, and more than the 6 percent in most ice cream bars. Most fudge bars and regular frozen yogurt bars have around 10 percent.

None of the frozen greek bars we found are Best Bites, because they all have added sugar. But all are *Better Bites*. That is, they have no more than 120 calories and 2 grams of saturated fat, and they aren't sweetened with aspartame, acesulfame potassium, or sucralose (see "Hold the Splenda").

Most regular frozen yogurt bars we found also are *Better Bites*. One exception: Stonyfield Organic frozen yogurt bars ("made with nonfat frozen yogurt") hit 170 calories and 7 grams of saturated fat because they're chocolate coated.

### HOLD THE SPLENDIA

Nutrition Action has long considered sucralose (Splenda) to be safe. However, Italian researchers have reported preliminary results from a study in which male mice fed high doses of sucralose had an increased risk of leukemia. Until we can evaluate the final study, we are moving sucralose from a "safe" rating to a "caution." Two other widely used artificial sweeteners—aspartame and acesulfame potassium—have "avoid" ratings. We'll keep you posted.

### OH, FUDGE!



A tasty fudge bar in disguise.

Most fudge bars are *Better Bites*. What a steal.

The smaller ones—like Skinny Cow Mini Fudge Pops—have only around 50 calories and a teaspoon of

added sugar. (Another option: Weight Watchers' 60-calorie Chocolate Smoothie Frozen Yogurt Bars, which taste like extra-rich fudge bars.)

Even the bigger bars cluster around just 100 calories. Try Skinny Cow Truffle Bars ("made more decadent with chocolatey ribbons") or Weight Watchers Giant Latté Bars (think rich coffee ice cream on a stick).

### FOOLED BY FRUIT

"Refresh & Invigorate," say the boxes of Edy's new Outshine Fruit Bars. "Smart snack choices containing fruit and juice help you stay energized and vibrant."

Yes and no.

Like most fruit bars, Outshines are "made with real fruit" and/or juice, but they're also made with added sugars. And who knows

how much? Fruitfull says that its bars are 40 to 60 percent fruit, and Jolly Llama says that its are 40. But the remaining 40 to 60 percent could be sugar.

So try a smaller (1.5 oz.) bar like Edy's Outshine. (Edy's is marketed as Dreyer's west of the Rockies and in Texas.) Each delicious pop has just 40 calories.



Just 40 calories means less added sugar.



### CAP YOUR CUP

You can't eat more than one single-serve cup without knowing it. That's a plus.

But a cup doesn't guarantee a lower-calorie dessert. From least to most good for you, here's what to expect:

■ A petite (3½ oz.) cup of Häagen-Dazs Ice Cream or Gelato, Ben & Jerry's Ice Cream, or Ciao Bella Gelato has about 200 to 300 calories, 5 to 11 grams of saturated fat, and 3 to 5½ teaspoons of added sugar.

**100 calories and six creamy, tangy flavors.**

spoons of added sugar.

■ Ben & Jerry's (3½ oz.) Greek Frozen Yogurt cups reach 6 grams of protein, but at a cost of around 200 calories and 3½ grams of sat fat.

■ Most cups by Edy's (or Dreyer's) Slow Churned, Weight Watchers, Skinny Cow, and Blue Bunny Frozen Yogurt are made with lower-fat ice cream or frozen yogurt, but they hit 150 to 190 calories and 1 to 5 grams of sat fat because of their larger (6 oz.) serving size.

■ If you like sorbet, Ciao Bella sells small (3½ oz.) cups that are 65 to 85 percent fruit (or juice). Two of the three flavors—the Blood Orange (90 calories) and the Mango (110 calories)—are Better Bites.

■ Healthy Choice Greek Frozen Yogurt cups and Whole Fruit Sorbet & Greek Frozen Yogurt cups (4 oz.) supply 4 grams of protein for 100 calories and no more than 1 gram of sat fat. That makes them Better Bites.

### A COAT OF MANY CALORIES

Premium ice cream bars like Ben & Jerry's, Dove, Häagen-Dazs, Klondike, and Magnum manage to coat each stick with 250 to 350 calories, 10 to 15 grams of saturated fat, and an estimated 3½ to 6 teaspoons of added sugar.

It's not just the ice cream that bumps up the calories and sat fat. It's also the chocolate coating—typically made with (non-melting) coconut oil. Even ice-cream-free Almond Dream Bars pack 240 calories and 9 grams of sat fat, thanks to their coating.

What's a chocolate (coating) lover to do?

You can dodge some of the damage with Weight Watchers' new dipped bars (Divine Triple Chocolate, Dark Chocolate Dulcé de Leche, Chocolate Dipped Strawberry, and Dark Chocolate Raspberry Cheesecake). They knock the calories down to about 110 and the saturated fat to 3½ grams by using lower-fat ice cream and coating only about half the bar.

For a bit more sat fat, try fully coated Klondike 100 Calorie Vanilla or French Vanilla Bars, Good Humor Snack Pops, or Weight Watchers English Toffee Crunch or Dark Chocolate Raspberry bars. They trim the calories to about 100 and the sat fat to around 5 grams by using lower-fat ice cream and sticking to a smaller (2 oz.) size.

Your best bet: our Better Bites. Weight Watchers Cookies & Cream bars have just 120 calories and 2 grams of sat fat. (Bonus: the cookie bits taste like Oreos.) Or pick up Tofutti's non-dairy Hooray! Hooray! bars, which match Weight Watchers' numbers and are the only no-sugar-added bars we found that use only safe sweeteners (stevia and the sugar alcohol sorbitol).



**The half-coating slashes the sat fat.**

### SMALL IS BEAUTIFUL



**Cookies & ice cream for just 100 calories.**

Dreaming of a Nestlé Drumstick, but don't want its 300 calories to stick to your ribs (or other areas)?

Try one of Nestlé Drumstick's Lil' Drums. At around 120 calories and 3 grams of saturated fat, they're closer to a Better Bite than any other cone. For 1 gram less sat fat (but 150 calories), try a Skinny Cow cone.

"Mini" or "snack size" also is key when it comes to sandwiches. That's because you're essentially eating two cookies with your ice cream. Almond Dream, Blue Bunny, So Delicious, Soy Dream, and Weight Watchers all make Better Bite ice cream sandwiches by shrinking them down to about 2 oz.

And thanks to their thin cookie wafers, slightly larger (roughly 3 oz.) sandwiches like Klondike 100 Calorie, Good Humor Low Fat, and Weight Watchers also stay under our Better Bite limits.

### FROM CREAMSICLE TO COCONUT

The old fruit-and-cream bars (think Creamsicles) surround lower-fat ice cream with a fruit-flavored shell. They're low on fruit, but at least they keep a lid on calories (70 to 100).

Newer fruit-and-cream bars blend the two together. Too bad some brands—like Fruttare and Magnolia—use fattier ice cream or coconut oil. They hit 110 to 180 calories.

You can do better. Fruitfull Banana, Piña Colada, Raspberry Cream, and Strawberry Cream bars have around 100 calories and are 40 to 60 percent fruit, says the company.

And don't forget coconut (yes, it's a fruit) bars, which are made with coconut milk or cream, not oil. Try Palapa Azul (sold at Whole Foods). It's 80 calories' worth of water, coconut cream, sugar, and shredded coconut. Yum. 🥥



**Travel to the tropics for just 80 calories.**



# We all scream...

**Better Bites** (✓) have no more than 120 calories and 2 grams of saturated fat, and are free of aspartame, acesulfame potassium, and sucralose. While they can contain added sugar, the calorie limit effectively caps the amount. (There are no **Best Bites** because frozen novelties typically contain added sugars, possibly unsafe artificial sweeteners, or relatively few nutrients.) Within each section, products are ranked from least to most calories, then least to most saturated fat, then most to least protein, then least to most added sugar.

Frozen Yogurt Bars	Calories	Sat Fat (g)	Added Sugar (g)*	Protein (g)
✓ Yosicle—Duos!, Swirlz!, or Torpedo! (1.6 fl. oz.) <sup>1</sup>	50	0.5	1	1
✓ Weight Watchers or Yoplait (1.8 fl. oz.) <sup>1</sup>	60	1	1.5	2
✓ Yasso Greek (3.5 fl. oz.) <sup>1</sup>	80	0	2	6
✓ Ciao Bella Adonia Greek (2.3 fl. oz.) <sup>1</sup>	80	0	1.5	5
✓ Weight Watchers Greek (3 fl. oz.) <sup>1</sup>	80	0	1.5	5
✓ Healthy Choice (2.5 fl. oz.) <sup>1</sup>	90	0.5	1.5	3
✓ Yoplait Greek (2.7 fl. oz.) <sup>1</sup>	90	1	1.5	5
Stonyfield Organic (3 fl. oz.) <sup>1</sup>	170	7	3	3

Fudge Bars	Calories	Sat Fat (g)	Added Sugar (g)*	Protein (g)
✓ Weight Watchers Snack Size Fudge (1.8 fl. oz.)	50	0	1	2
✓ Skinny Cow Mini Fudge (1.5 fl. oz.)	50	0.5	1	2
✓ Fudgsicle 60 Calories (1.6 fl. oz.)	60	1	1	1
✓ Healthy Choice Mocha Swirl (2.5 fl. oz.)	90	0.5	1.5	3
✓ Blue Bunny BIG Fudge (2.3 fl. oz.)	90	1	2.5	3
✓ Skinny Cow Fudge (4 fl. oz.)	100	0.5	2	4
✓ Weight Watchers Giant—Chocolate Fudge or Latté (4 fl. oz.) <sup>1</sup>	100	0.5	2	4
✓ Fudgsicle 100 Calories (2.5 fl. oz.)	100	1	2	2
✓ Skinny Cow Truffle (2.7 fl. oz.) <sup>1</sup>	100	2	1.5	3

Ice Cream & Non-Dairy Bars	Calories	Sat Fat (g)	Added Sugar (g)*	Protein (g)
Blue Bunny Sweet Freedom Snack Size (2 fl. oz.) <sup>1,A</sup>	70	3	0	2
Dove pieces (0.8 fl. oz.) <sup>1</sup>	70	3	1	1
Weight Watchers—Dark Chocolate Raspberry or English Toffee Crunch (1.8 fl. oz.) <sup>1</sup>	90	4	1.5	2
Klondike 100 Calorie—French Vanilla or Vanilla (2 fl. oz.) <sup>1</sup>	100	4.5	1.5	2
Good Humor Snack Pops (1.8 fl. oz.)	100	5	1.5	1
Weight Watchers dipped, except Cookies & Cream (2.7 fl. oz.) <sup>1</sup>	110	3.5	2.5	2
✓ Tofutti Hooray! Hooray! (1.8 fl. oz.)	120	2	0	2
✓ Weight Watchers dipped, Cookies & Cream (2.7 fl. oz.)	120	2	2	2
Blue Bunny Cadbury Snack Size (2 fl. oz.) <sup>1</sup>	160	5	3	2
Skinny Cow Candy Bar (2.1 fl. oz.) <sup>1</sup>	160	6.5	2.5	2
Magnum Mini (1.9 fl. oz.) <sup>1</sup>	170	7.5	3	2
Almond Dream (3.3 fl. oz.)	240	9	4.5	2
Dove (2.9 fl. oz.) <sup>1</sup>	250	10	4	3
Klondike (4.5 fl. oz.) <sup>1</sup>	250	11	4.5	3
Magnum (3.4 fl. oz.) <sup>1</sup>	270	12	4.5	3
Häagen-Dazs (3 fl. oz.) <sup>1</sup>	290	13	4	4
Ben & Jerry's (3.7 fl. oz.) <sup>1</sup>	320	12	5	5

Ice Cream & Non-Dairy Sandwiches	Calories	Sat Fat (g)	Added Sugar (g)*	Protein (g)
✓ Weight Watchers Snack Size (2.3 fl. oz.) <sup>1</sup>	90	0	1.5	2
✓ So Delicious Minis (2.3 fl. oz.) <sup>1</sup>	90	0.5	2	2
✓ So Delicious Almond Milk Minis (2.3 fl. oz.)	90	0.5	1.5	1
✓ Klondike 100 Calorie (3 fl. oz.)	100	0.5	2	2
✓ Almond or Soy Dream Lil' Dreamers (1.5 fl. oz.) <sup>1</sup>	100	0.5	2	1
✓ Blue Bunny Mini (2.3 fl. oz.)	100	1	1.5	2
✓ Weight Watchers (3.5 fl. oz.)	120	0	2.5	3

	Calories	Sat Fat (g)	Added Sugar (g)*	Protein (g)
✓ Good Humor Low Fat (3 fl. oz.)	120	1	2.5	2
Skinny Cow (4 fl. oz.) <sup>1</sup>	150	1	2	4
Ciao Bella Adonia Greek Squares (4 fl. oz.) <sup>1</sup>	160	0.5	3	6
Klondike (4.2 fl. oz.) <sup>1</sup>	200	3	3.5	3
Ciao Bella Gelato Squares (4 fl. oz.) <sup>1</sup>	250	5.5	4.5	4
Blue Bunny Big Bopper (7 fl. oz.)	490	14	8	5

## Ice Cream Cones

Weight Watchers Snack Size (2.3 fl. oz.) <sup>1,A</sup>	90	1.5	1.5	2
Nestlé Drumstick Lil' Drums (2.3 fl. oz.) <sup>1</sup>	120	3	2.5	1
Skinny Cow (4 fl. oz.) <sup>1</sup>	150	2	2.5	4
Nestlé Drumstick, except King and Lil' Drums (4.6 fl. oz.) <sup>1</sup>	300	9.5	5	3
Nestlé Drumstick King (7.5 fl. oz.) <sup>1</sup>	360	10.5	6.5	4

## Cups

✓ Whole Fruit Sorbet & Greek (4 fl. oz.) <sup>1</sup>	100	0	NA	4
✓ Ciao Bella Sorbet cups—Blood Orange or Mango (3.5 fl. oz.) <sup>1</sup>	100	0	NA	0
✓ Healthy Choice Greek (4 fl. oz.) <sup>1</sup>	100	1	2	4
Weight Watchers—Chocolate Fudge Brownie or Mint Chocolate Chip (6 fl. oz.) <sup>1</sup>	150	1.5	3	4
Skinny Cow (5.8 fl. oz.) <sup>1</sup>	160	1.5	3.5	5
Blue Bunny Frozen Yogurt (5.5 fl. oz.) <sup>1</sup>	170	2.5	4	5
Dreyer's or Edy's Slow Churned (5.8 fl. oz.) <sup>1</sup>	180	3	4	4
Ben & Jerry's Greek (3.6 fl. oz.) <sup>1</sup>	190	3.5	3.5	6
Ciao Bella or Häagen-Dazs Gelato (3.5 fl. oz.) <sup>1</sup>	220	7	3.5	4
Ben & Jerry's or Häagen-Dazs (3.6 fl. oz.) <sup>1</sup>	240	8	3.5	4

## Fruit & Milk or Fruit & Cream Bars

✓ Dreyer's or Edy's Outshine Coconut Waters (2.7 fl. oz.) <sup>1</sup>	60	0	NA	0
✓ Palapa Azul Coconut (2.8 fl. oz.)	80	1	NA	0
✓ Nestlé & Cream—Orange or Rasp. (2.7 fl. oz.) <sup>1</sup>	80	1.5	NA	1
✓ Creamsicle 100 Calories (2.5 fl. oz.)	100	0.5	NA	1
✓ Fruitfull—Banana, Piña Colada, Raspberry Cream, or Strawberry Cream (4 fl. oz.) <sup>1</sup>	110	1.5	NA	2
✓ Weight Watchers Giant Sorbet & Ice Cream (4 fl. oz.) <sup>1</sup>	120	0	NA	2
Dreyer's or Edy's Outshine Creamy Coconut (2.7 fl. oz.)	120	2.5	NA	4
Fruittare and Milk (2.7 fl. oz.) <sup>1</sup>	120	3	NA	1
Whole Fruit Coconut (2.8 fl. oz.)	140	5	NA	2
Magnolia Milkbars (3 fl. oz.) <sup>1</sup>	160	3.5	NA	3

## Fruit Bars

✓ Dole Variety Pack (1.5 fl. oz.)	40	0	NA	0
✓ Dreyer's or Edy's Outshine (1.5 fl. oz.) <sup>1</sup>	40	0	NA	0
✓ Julie's Organic Sorbet (2.5 fl. oz.) <sup>1</sup>	60	0	NA	0
✓ Palapa Azul—Mango or Watermelon (2.8 fl. oz.) <sup>1</sup>	60	0	NA	0
✓ Ciao Bella Sorbet (3 fl. oz.) <sup>1</sup>	70	0	NA	0
✓ Dreyer's or Edy's Outshine, except 1.5 fl. oz. bars and Creamy Coconut (2.5 fl. oz.) <sup>1</sup>	70	0	NA	0
✓ Fruittare (2 fl. oz.) <sup>1</sup>	70	0	NA	0
✓ Whole Fruit, except Coconut (2.8 fl. oz.) <sup>1</sup>	70	0	NA	0
✓ Fruitfull, except cream bars (4 fl. oz.) <sup>1</sup>	80	0	NA	0
✓ Jolly Llama Sorbet Pops—Mango, Raspberry, or Strawberry (3 fl. oz.) <sup>1</sup>	80	0	NA	0

✓ Better Bite. <sup>1</sup> Average. NA Number not available. \* Estimate. <sup>A</sup> Contains aspartame, acesulfame potassium, and/or sucralose.

**Daily Limits** (for a 2,000-calorie diet): **Saturated Fat:** 20 grams. **Added Sugar:** 25 grams (6 teaspoons) for women, 38 grams (9 teaspoons) for men. (Note: To convert teaspoons of sugar to grams, multiply by 4.2.) **Protein daily target:** 50 grams.

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

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## RIGHT STUFF

## FOOD PORN

### WHOLE GRAINS IN A HURRY



"Why wait for wheatberries?" asks the **Village Harvest Wheatberry & Barley Whole Grain Medley** package.

Why, indeed. Ordinary wheatberries (whole wheat kernels) take an hour to cook—typically after an overnight soak.

With Village Harvest, "a minute in the microwave and you've got a bowl of power packed goodness

that's as high in iron, protein and fiber as it is in nutty flavor and bold, crunchy texture," as the package notes.

Got *that* right. Each half cup of the Wheatberry & Barley Medley (half the serving listed on the package) has around 130 calories, 4 grams of protein, 5 percent of a day's iron, and 5 grams of honest-to-goodness unprocessed fiber. You may have to visit the freezer case at Whole Foods or another natural-foods store to find it, but it's worth the trip.

And working wheatberries into your diet is a snap. Think of them as extra-nutty brown rice. Try mixing some with sautéed mushrooms or onions, or with chopped cherry tomatoes, fresh basil, a drizzle of olive oil, and a sprinkle of salt and freshly ground black pepper.

But why stop there? Village sells three other **Whole Grain Medleys (Red Quinoa & Brown Rice, Farro & Red Rice, and Brown, Red & Wild Rice)** and two **Whole Grain Creations (Wheatberries, Barley, and Quinoa with Cranberries & Almonds and Brown and Wild Rice with Corn & Black Beans)**.

If you're still eating bland, boring white rice because it's convenient, that excuse is over.

"Ancient grains, welcome to the 21st century," says the bag. It took a village.

**Village Harvest: [villageharvestrice.com](http://villageharvestrice.com).**

**dish**  
OF THE MONTH

**Instant Berry Sherbet**

Combine 1 cup of frozen mixed berries (strawberries, blueberries, blackberries, and/or raspberries) with 1 frozen chopped banana and  $\frac{3}{4}$  cup of plain, 0% (fat-free) greek yogurt in a blender. Process until completely smooth. Makes 2 cups of pure summer.

### KILLER CRUST



"Chocolate Cookie Crumb Crust Made From Scratch," boasts the box of **Marie Callender's frozen Chocolate Satin Pie**. "Filled with our most luxuriously rich chocolate filling."

Filled with sugar, white flour, and bad fat is more like it.

Assuming you eat just one-sixth of the pie (the serving listed on the box), you're downing 580 calories and 4 grams of trans fat—much of it from partially hydrogenated soybean oil.

While an expert panel once considered advising people to get no more than 2 grams of trans (including the naturally occurring trans in meat and dairy fat) in an entire day, health authorities now recommend that we eat as little trans as possible. And 4 grams ain't a little.

Neither are the 18 grams (nearly a day's worth) of saturated fat in each serving. But that's palm kernel oil, butter, and milk for you.

It's not just the Chocolate Satin. Marie's six other large cream pies have 1½ to 4 grams of trans fat and 9 to 18 grams of sat fat per slice.

And her 10 "Famous Flaky Crust" large fruit pies batter your arteries with around 3 grams each of trans and sat fat. (Her small, two-serving fruit pies are trans free. Go figure.)

In 1948, when Marie Callender first baked pies for local restaurants, she "used only the finest ingredients" and put "love and care into every pie," notes the Chocolate Satin Pie box. "Now you can enjoy the goodness of Marie's freshly made pies at home."

Just make sure your cardiologist is on call.

**Marie Callender's: (800) 595-7010**