

Nutrition *Action*

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CENTER FOR SCIENCE IN THE PUBLIC INTEREST

BREAKING BAD

What you can do to protect your bones

One out of two. Those are your odds of breaking a bone due to osteoporosis if you're a woman age 50 or older.

For men 50 or older, the odds are one out of four. That's higher than the risk of prostate cancer.

An estimated 10 million older adults have osteoporosis, or brittle bones. Another 43 million have low bone mass. That, along with weak muscles, puts them at risk for fractures.

And broken bones aren't just an inconvenience. Caring for bone fractures caused by osteoporosis costs an estimated \$19 billion a year.

Yet millions of people are thoroughly confused about how to prevent bone loss, thanks to a slew of conflicting reports about calcium, vitamin D, and more. Here's what you need to know.

Continued on page 3.

Good Luck



In 1862, President Abraham Lincoln said, with great frustration, of General George B. McClellan, "He has got the slows." I often think of that quote when I observe the snail's pace of movement here in Washington. Just consider:

■ **Food safety.** President Obama signed

the Food Safety Modernization Act almost four years ago. The Food and Drug Administration is still writing regulations that will—eventually—protect us from foodborne illnesses.

Because of a court order, the FDA says that it will finalize the regulations in 2015, but the food industry will certainly have a few more years after that to comply. Until then, good luck avoiding food poisoning.

■ **Antibiotics in animal feed.** Since 1977, the FDA has been trying to stop producers from spurring growth in animals by using antibiotics that are taken by humans. Because about 75 percent of all antibiotics are used on farms, the drug industry has successfully fought off every effort to curb their use.

Now the FDA says that a voluntary approach would be faster than regulations, but that effort appears to be failing, too. Until the FDA forces the issue, good luck sidestepping an antibiotic-resistant foodborne illness.

■ **Partially hydrogenated oil.** As I wrote in my July/August memo, the FDA has yet to finalize its proposed ban on partially hydrogenated oil, which contains cholesterol-raising trans fat.

Food manufacturers are kicking up a fuss, and with an anti-regulatory Congress breathing down the FDA's neck, I'm not

holding my breath. Until the FDA bans partially hydrogenated oil, good luck squinting at those hard-to-read ingredient lists.

■ **Sodium targets.** The FDA has failed to set even voluntary targets for lowering sodium in processed foods, thanks to industry opposition. Until the FDA moves to protect consumers, good luck sidestepping sodium.

■ **Calories on menus.** Almost five years ago, Congress passed a law requiring chain restaurants to list calories next to every item on

their menus and menu boards. (That followed a dozen laws that the Center for Science in the Public Interest, *Nutrition Action's* publisher, helped pass in New York City, California, and elsewhere.)

McDonald's, Panera, and a few others have voluntarily complied with the law, but most have been waiting for the FDA's final regs.

The holdup? Restaurants want to exempt booze, supermarkets want to exempt their delis, and movie theaters want to exempt their popcorn, soda pop, and candy.

I keep hearing "Soon." Maybe (perhaps even before you read this). Until then, good luck figuring out what that restaurant food will do to your waistline.

Tens of thousands of lives—Democrats, Republicans, independents, and undecideds—are lost every year because of obsolete food policies. Yet Washington fiddles.

Why? A Congress that is too often in bed with industry. A Supreme Court that has let the wealthy and powerful determine elections. And regulators that let the food industry put its profits before its customers' health.

You guessed it: Washington has got the slows.

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



Will farms voluntarily stop using human antibiotics in animals? Good luck with *that*.

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BREAKING BAD

WHAT YOU CAN DO TO PROTECT YOUR BONES



Bess Dawson-Hughes is director of the Bone Metabolism Laboratory at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University in Boston

and a professor of medicine at Tufts. She is a former president of the National Osteoporosis Foundation and served on the Council of the International Bone and Mineral Society and the Advisory Council of the National Institute of Arthritis, Musculoskeletal, and Skin Diseases. She spoke to *Nutrition Action's* Bonnie Liebman by phone from Boston.

But vertebral fractures can be silent—you just gradually lose height. The painless ones are not harmless because if you've had one, you're at approximately a five-fold greater risk of a second fracture.

Q: Why?

A: Because when one vertebrae is ready to go, most of its neighboring vertebrae are on the verge too. This is a systemic disease.

Q: If you've lost height as you've gotten older, does that mean you have a fracture?

A: We lose water in the intervertebral disc spaces—the cushions be-

tween the vertebrae—as we age. You can attribute a maximum of about an inch and a half of height loss to that water loss. Anything above that is likely to be a compression fracture. You lose height because the weakened bone compresses.

Q: When should people get their bone density measured?

A: Women age 65 and older—and men age 70 and older—should have a screening test. Anyone 50 to 69 should have one if they're at high risk—for example, if they've had a fracture or have medical conditions that increase the risk for osteoporosis like diabetes or inflammatory bowel disease. [See "What's your Risk?" p. 4.]

The test uses very little radiation. Flying round-trip between New York and San Francisco would expose you to 10 to 15 times more radiation.

Q: Are we under-diagnosing low bone mass and osteoporosis?

A: Yes. There are fewer and fewer operating scanners, because the reimbursement has fallen so low that only hospitals can afford to run them. They used to be in more physicians' offices, but now the physicians can't afford them. So there's less scanning going on.

Q: Why do bones break?

A: They may not have achieved their optimal peak mass—that is, they didn't build enough bone in the first place. You reach your genetic potential peak mass around age 25.

About 80 percent of your peak bone mass is genetically determined, but 20 percent can be modified by lifestyle—that is, by exercise and nutrition.

BAD BREAKS

Q: How can people tell if they have bone loss?

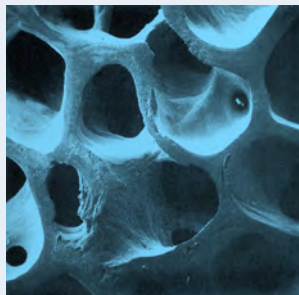
A: We all lose bone after the age of 50. Women lose roughly 15 percent of their bone density in the five to seven years after menopause. Men lose bone more gradually than women, but they're still at risk.

But people cannot feel their bones getting weaker. It's a silent disease. The only way to know is by getting your bone density measured. If your T-score is between -1 and -2.5, we call that low bone mass, or osteopenia. If it's at or below -2.5, we call that osteoporosis.

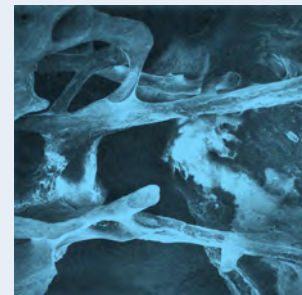
But many people don't know that their bone mass is low until they break a bone—usually a hip, wrist, or spine.

Q: Could people not even know they have a spinal fracture?

A: The majority hurt. Some hurt so severely that people undergo rather dire surgeries to rebuild those vertebrae to try to get the pain to subside.



Normal bone



Bone with osteoporosis

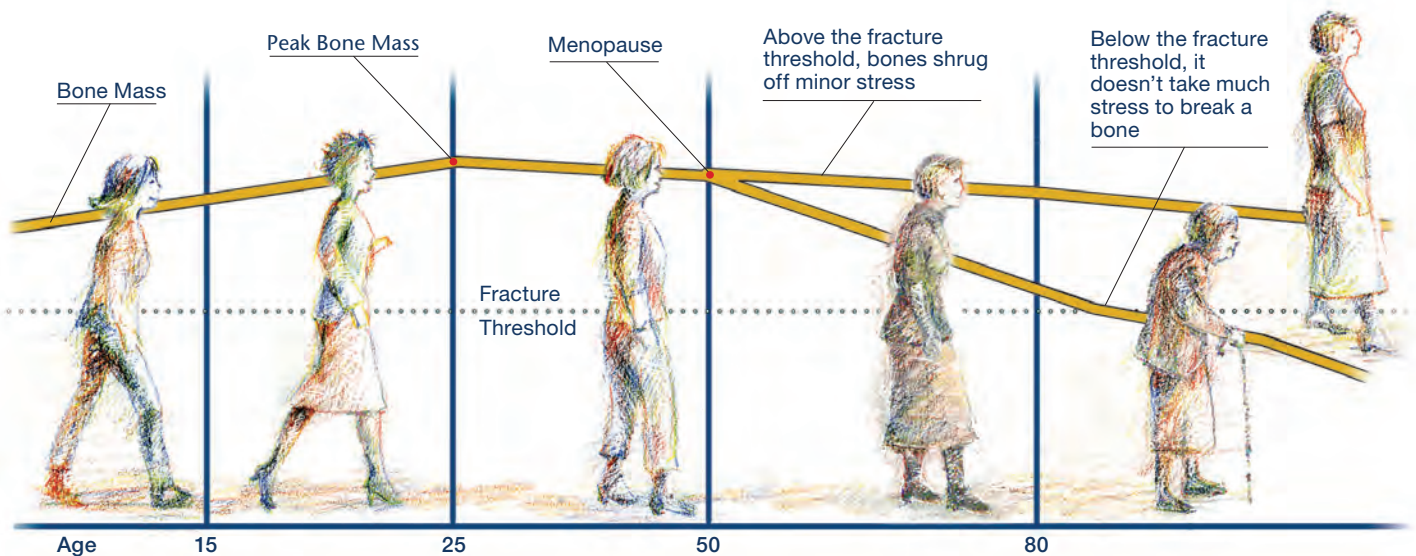
Q: Do genes and lifestyle also affect bone loss?

A: Yes, but genetics plays a more limited role the older you get. By age 65, lifestyle really drives the changes in bone mass. What you're eating and whether you're exercising, smoking, or overdoing alcohol is the real important driver of bone mass. And bone mass drives fracture risk.

Q: What matters besides bone mass?

A: Muscle. Generally, you don't fracture a hip without having fallen. So the muscle





Bone mass drops (more rapidly in women than in men) as we age. Adequate calcium, vitamin D, fruits, vegetables, and exercise can help keep bone mass from falling below the fracture threshold. That's the zone in which a hip, spine, or wrist is more likely to break.

WHAT'S YOUR RISK?

Risk factors you can't change:

- Age.** Being over 50.
- Sex.** Being female.
- Body size.** Being slender, thin-boned, or tall.
- History.** Broken bones or height loss (in you, your parents, or your siblings).

Risk factors you may be able to change:

- Inactivity.** Being sedentary or extended bed rest.
- Diet.** Too little calcium or vitamin D.
- Alcohol.** Three or more drinks a day.
- Smoking.** Another reason to quit.
- Medications.** Steroids, anti-seizure drugs, proton pump inhibitors, SSRI anti-depressants, Depo-Provera, aromatase inhibitors, and others. (See nof.org/articles/6.)
- Illness.** Diabetes, inflammatory bowel disease, celiac disease, rheumatoid arthritis, lupus, anorexia nervosa, and others. (See nof.org/articles/5.)

Sources: National Institute of Arthritis and Musculoskeletal and Skin Diseases (niams.nih.gov/Health_Info/Bone/Osteoporosis/osteoporosis_hoh.asp#5). National Osteoporosis Foundation (nof.org/articles/2).

Want an online bone checkup?

niams.nih.gov/Health_Info/Bone/Optool/index.asp

loss that occurs with aging and leads to frailty, poor balance, and a higher risk of falls also increases the risk of fracture.

More and more, I've come to see the musculoskeletal system as a unit. It's not just bone mass, it's bone and muscle. Turns out, most of the things that are good for one are good for the other.

CALCIUM

Q: Why is calcium so controversial?

A: The controversy has been driven by two issues. One is the risk of kidney stones. In the Women's Health Initiative—which gave 36,000 women 1,000 mg of calcium or a placebo every day for seven years—the women who took calcium had a 17 percent higher risk of kidney stones. But the average calcium intake of the supplement users was actually up around 2,100 mg a day. So they were way up there.

Q: Why did they get so much?

A: The women were allowed to take their own supplements along with the trial's. Gary Curhan at the Harvard School of Public Health has reported repeatedly that the more calcium you get from food, the

lower the kidney stone risk. But if you're getting large amounts of calcium from supplements, you have a higher risk.

Q: So don't overdo it?

A: Right. Calcium is essential for bone. It's important to reach the Recommended Dietary Allowance, which is 1,000 to 1,200 mg a day. [See "Calcium Counter," p. 5.] There is no known advantage whatsoever to getting more, and there appears to be a risk of kidney stones if you take supplements to go beyond the 1,200 mg.

So, stay put at the RDA. And that applies both to people who want to prevent bone loss and to those who already have osteoporosis.

Q: Does that mean taking 1,200 mg?

A: No. Many doctors were saying, "Take 500 to 600 milligrams twice a day," without bothering to find out what people were getting in their diet. And we get more these days because many foods are fortified with calcium. There's rarely a need for more than one of those 500-milligram supplements per day, if that.

Q: What else has caused controversy?

A: Researchers in New Zealand have repeatedly raised the issue that too much calcium increases the risk of cardiovascular disease. A German study found the same thing. But other researchers, in growing numbers, have seen no risk whatsoever. And that includes the big trials. I think the concern about cardiovascular disease risk is just a blip on the radar screen that we'll soon forget.

Q: Did calcium takers in the Women's Health Initiative have a higher risk of cardiovascular disease?

A: Some researchers claim that there was a higher risk, but, oddly enough, not in the women who got the most calcium.

When the U.S. research team that ran the study analyzed the whole data set, they saw absolutely nothing—not even a glimmer of risk.

Q: Have other studies found a risk?

A: A meta-analysis found a higher risk in people who took calcium supplements. But the data that swung the balance were from a UK trial that was designed for another purpose, and half of the participants stopped taking calcium two years into the five-year study.

How can you hang your hat on those data? Most researchers feel that this controversy is just a tempest in a teapot.

Q: Do trials show that calcium lowers fracture risk?

A: Not calcium alone. It's an important component of a strategy to prevent fractures, but not a solo component.

Q: Have trials looked at fractures in women who get too little calcium?

A: Not usually. In our first big trial looking at bone density, we recruited women with low calcium intakes in two categories—either less than 400 milligrams a day or 400 to 600 milligrams a day—and gave them either calcium or a placebo.

Those with the very low intakes had a much better bone density response to calcium than did those with the higher intakes. But that trial measured bone density, not fractures.

Q: Why doesn't calcium alone prevent fractures?

A: We don't know, but when we did a huge meta-analysis a few years ago, we saw a hint that excessive amounts of calcium might *increase* the risk of hip fractures. If calcium supplements help people who ordinarily consume too little and harm people who consume too much, that may explain why you don't see a benefit when you put all the data together. It's complicated.

VITAMIN D

Q: What about trials that used both calcium and vitamin D?

A: Many trials have found that taking both lowers the risk of fractures. It's hard to tell if vitamin D alone would lower the risk, because trials that used higher doses of vitamin D also used calcium. You can't tell if it's the combination or the higher dose of vitamin D that did it.

Q: Why would vitamin D help prevent fractures?

A: Vitamin D is essential for absorbing calcium. People with low vitamin D blood levels have more rapid bone loss and more fractures.

And we know that vitamin D lowers the risk of falling. Falls are almost always the precipitating cause of hip fractures. So lowering the risk of falls is hugely important.

Q: How does vitamin D lower the risk of falls?

A: It helps build muscle. We did one study on healthy but frail older women with low starting vitamin D levels. We gave them vitamin D or a placebo for four months. We saw that the women who got vitamin D had larger cross-sectional muscle area than the placebo takers, suggesting that vitamin D increased their muscle mass.

We and others have also found vitamin D receptors in muscle biopsy studies. That also suggests that vitamin D matters for muscles.

Q: Does vitamin D improve strength?

A: We don't know yet. We're just about to start a new study in healthy older people with low-normal vitamin D levels. We'll be giving them vitamin D and measuring power in the legs and arms every two months for a year to see if their performance improves.

Q: Can you get too much vitamin D?

A: Yes. Too much vitamin D can cause hypercalcemia—high blood levels of calcium—and increase your risk of kidney stones.

And there's some evidence that if your blood levels of vitamin D are too high, you may have an *increased* risk

CALCIUM COUNTER



Shoot for 1,000 to 1,200 milligrams of calcium a day from foods and supplements combined. Here's what's in some popular calcium-rich foods...and a few that may have less than you think.

Food	Calcium (mg)
General Mills Total (¾ cup)	1,000*
Lactaid Calcium Enriched Milk (1 cup)	500*
Silk Almondmilk or Soymilk (1 cup)	450*
Starbucks Caffè Latte (grande) ¹	410
Orange juice, with calcium (1 cup)	350*
Yogurt, plain, nonfat (6 oz.)	340
Milk (1 cup)	300
Yogurt, fruited, nonfat (6 oz.)	260
Sardines, canned (3 oz.)	250
Starbucks Cappuccino (grande)	250
Salmon, canned, with bones (3 oz.)	240
Mozzarella, part skim (1 oz.)	220
Swiss cheese (1 oz.)	220
Frozen yogurt, premium (½ cup)	200
Cheddar cheese (1 oz.)	190
Greek yogurt, plain, nonfat (6 oz.)	190
Ricotta cheese, part skim (¼ cup)	170
Tofu, firm (3 oz.)	170*
Greek yogurt, fruited, nonfat (6 oz.)	150
Cottage cheese, 2% (½ cup)	130
Collard greens (½ cup cooked)	120
Spinach (½ cup cooked)	120
Country Crock Calcium plus Vitamin D (1 Tbs.)	100*
Frozen yogurt, regular (½ cup)	100
General Mills Cheerios (1 cup)	100*
Ice cream, premium (½ cup)	100
Kellogg's All-Bran Original (½ cup)	100*
Quaker Orig. Instant Oatmeal (1 packet)	100*
Whole wheat bread (1 slice, 1.5 oz.)	70*
Almonds (23 nuts, 1 oz.)	80
Bok choy (½ cup cooked)	80
Ice cream, regular (½ cup)	80
White beans (½ cup cooked)	80
Kale (½ cup cooked)	60
Orange (1)	60
Edamame, shelled (½ cup cooked)	50
Salmon, canned, boneless (3 oz.)	50
Cream cheese, tub (2 Tbs.)	40
Broccoli, chopped (½ cup cooked)	30

* Contains added calcium. ¹ Average.

Sources: USDA and company information.



DROPPING ACID



Here's the potential renal acid load (PRAL) for a sample of foods. Look for foods with high negative PRALs (like fruits and vegetables) to neutralize high positive PRALs.

Fruits	PRAL
Raisins (1/4 cup)	-8.4
Apricots (4)	-6.7
Kiwi fruit (2)	-6.1
Watermelon (2 cups)	-5.3
Pear (1)	-4.8
Orange (1)	-4.2
Apple (1)	-3.4
Pineapple or Strawberries (2/3 cup)	-3.1
Peach (1)	-2.4

Vegetables (1/2 cup cooked unless noted)	PRAL
Spinach	-12.6
Zucchini	-4.1
Carrot	-3.8
Tomato, raw (1)	-2.6
Cauliflower	-2.5
Lettuce, raw (3 cups)	-2.1
Broccoli	-0.9
Asparagus	-0.4

Miscellaneous	PRAL
Olive oil (1 Tbs.) or Butter (1 Tbs.)	0.0
Sugar (1 tsp.)	0.0
Milk chocolate (1.5 oz.)	1.0

Cereals & Grains	PRAL
Bread, whole wheat (1 slice)	0.8
Bread, white (1 slice)	1.6
Rice, white (1/2 cup cooked)	1.7
Rolled oats (1 cup cooked)	3.2

Dairy & Eggs	PRAL
Ice cream, vanilla (1/2 cup)	0.4
Soft cheese (1 oz.)	1.2
Milk (8 oz.)	1.7
Yogurt, fruited (6 oz.)	2.0
Eggs (1 large)	4.1
Hard cheese (1 oz.)	5.4
Cottage cheese (1/2 cup)	9.6

Fish, Meat, & Poultry (5 oz. raw)	PRAL
Haddock	9.7
Beef or Pork, lean only	11.2
Chicken, no skin	12.4
Turkey, no skin	14.1

Beverages	PRAL
Red wine (5 oz.)	-3.5
White wine, dry (5 oz.)	-1.8
Draft beer (16 oz.)	-1.0
Coca-Cola (12 oz.)	1.5

Source: *J. Am. Diet. Assoc.* 95: 791, 1995.

of falls. Again, we don't know why. So you can aggravate the very thing you're trying to prevent.

Q: So it's just like calcium?

A: Yes. Our bottom line is that it looks like 800 to 1,000 IU is the right amount for older people. That's slightly more than the RDA—600 to 800 IU—but it's the recommendation of the International Osteoporosis Foundation.

If you're in a high-risk category for inadequate vitamin D—if you have very dark skin so your skin doesn't make much vitamin D, or if you're a shut-in, or if you're obese—then you may need extra D. Vitamin D gets stored in fat tissue, so blood levels are lower if you're obese.

But generally speaking, 800 to 1,000 IU is the right range.

Q: So most of us need a supplement?

A: Yes, unless you spend time in the sun and live in or south of Los Angeles or Atlanta or anywhere in between, or if you go to Florida in the winter.

Q: You can't get much from food?

A: There's not much vitamin D in the diet. It's in foods that people don't tend to eat daily, like salmon.

So supplements are pretty much the way to go. And I would take them with food, not on an empty stomach. Also, if you take vitamin D with a meal that has some fat in it, your absorption is greater than if the meal is fat-free.

TOO MUCH ACID

Q: What else matters for bone?

A: We have growing evidence that foods that create acids in the body lead to bone breakdown. Bone is an alkali reservoir, so when you break bone down, you're putting alkali into the circulation to neutralize the acid. The bone acts as a buffer.

Researchers have even found a signal that tells the bone to break down when the environment becomes acidic. It's how our bodies adapt to increasing acid.

Q: Does acid come from acidic foods?

A: No. The acid comes from foods that get broken down into compounds that produce hydrogen ions, which is what makes something acidic. Those foods

are cereal grains and protein.

Q: Both plant and animal protein?

A: Yes. The acid story doesn't hinge on whether the protein is plant or animal.

In contrast, eating fruits and vegetables provides alkali to the system, which is good. Orange juice is clearly acidic, but when it's absorbed into the body, it gets broken down into bicarbonate, which is alkali.

Q: Do we have evidence that fruits and vegetables prevent fractures?

A: Not yet, but the evidence is getting stronger. For example, one study gave 52 healthy men and women either a placebo or a moderate or high dose of potassium citrate for six months. Like fruits and vegetables, potassium citrate gets metabolized to alkali in the body.

People who got the placebo lost more calcium than they consumed. People who got the lower dose of potassium citrate retained more than they consumed, and those who got the higher dose retained even more.

Q: Did that make their bones denser?

A: That study didn't look, but another study gave 201 healthy men and women age 65 and older a moderate dose of potassium citrate for two years. They saw significant improvement in bone mineral density at the spine, hip, and total body. And they saw a decrease in bone turnover. So these two studies go pretty far in supporting a role for alkali in protecting bone.

We have a big trial funded by the National Institutes of Health that will end in December. So, a few months after that we will know whether potassium bicarbonate, another alkali, had any effect on bone turnover or on muscle.

Q: So alkali can also affect muscle?

A: Yes. In our last trial, the alkali group had greater muscle power in their legs and a drop in nitrogen excretion. That strongly suggests decreased muscle loss.

The hypothesis is that in the acid environment, muscle wasting helps the body get rid of acid. For every amino acid it loses, the body dumps a hydrogen ion into the urine. So muscle breakdown neutralizes acid by taking hydrogen out of the system. It's fascinating.

MOVE IT OR LOSE IT

Aerobic, strength, and balance training can protect your bones. For exercises to strengthen your spine and improve your posture, go to nof.org/exercise.



Strength training 2-3 times a week



Aerobic activity at least 30 minutes a day



Balance training once a week

Q: Does protein cause calcium loss?

A: People used to think so, because protein increases calcium excretion in the urine. But protein also increases calcium absorption in the gut, so there's no net loss.

However, to lower your acid load, you could drop your protein and/or your cereal grains intake. By that I'm talking about bread, rice, cereal, and other grains, all of it—even whole grains.

Q: And bagels, buns, burritos, pizza, pasta, lo mein, rice, muffins, doughnuts, cakes, and cookies?

A: Yes. Given our concerns about obesity, cutting back on cereal grains is a good way to balance your acid-base status.

Q: Because cutting protein may not be good for older people?

A: Yes. A number of people in the muscle field think that the RDA for protein isn't quite high enough for older people.

Now, there are exceptions. For example, people on protein-loading diets like the Atkins diet or bodybuilders who take excessive amounts of protein should get less.

Also, when people get older, they have a decline in renal function. That fuels this acid-base problem because the older kidney is not as efficient at removing hydrogen ions. That's why the acid issue is more of a problem for elders.

People whose renal function has declined substantially are advised to reduce their protein intake. That's a big group of people.

EXERCISE

Q: Does exercise help bones?

A: It's hugely important—both aerobic and strength training.

Walking or running—any exercise in an upright position—is more effective for bone than swimming. They're all great exercises for muscle, but the ones that put a load on bones are better for the skeleton. Bicycling doesn't count as weight-bearing, which is too bad, because it's one of my favorites.

Q: What about exercises to improve balance, like tai chi?

A: It's very effective at lowering the risk of falls. In one trial, elders who got balance training and then got coached to do it on their own at home had fewer falls over a one-year period.

And there's a recent report in which

they trained elders to multitask by telling them to walk this way, and then that way, while listening to music. The training had a favorable effect on falls.

Q: Why would multitasking matter?

A: What causes so many falls is that people get distracted. Let's say an older woman is walking down the steps, and her husband is up at the top asking her a question. She tries to answer it, and she trips. The ability to multitask declines as we age, but you can improve it with training.

Q: Is exercise important for people who have osteoporosis?

A: Yes, but some exercises might be harmful for people at risk for a vertebral fracture. They should ask their physicians which exercises to do. 🍌

For More Information

National Institute of Arthritis and Musculoskeletal and Skin Diseases
niams.nih.gov/Health_Info/Bone

National Institutes of Health
nihseniorhealth.gov/osteoporosis

National Osteoporosis Foundation
nof.org

THE BOTTOM LINE

Food or Nutrient	NAH's Daily Target	What You Need to Know
Calcium	Women: 1,000 mg if 19 to 50 1,200 mg if over 50 Men: 1,000 mg if 19 to 70 1,200 mg if over 70	The targets include what you get from food. Count 250 milligrams for each serving of dairy you eat and 250 mg for the rest of your diet. Then see if you need a supplement.
Vitamin D	600 IU if adult up to age 70 800 IU if over 70	If you live north of Los Angeles or Atlanta (or the line between them), your skin can't make enough vitamin D during the winter.
Protein	At least 60 grams (women) At least 80 grams (men)	The targets are for a typical 130 lb. woman or 175 lb. man. Rule of thumb: Your protein target in grams is roughly equal to half your weight in pounds.
Fruits & Vegetables	At least 10 servings (a serving is just ½ cup)	There's no better way to neutralize excess acid.
Exercise (weight-bearing)	30 minutes or more	To get or stay trim, you'll need 60 to 90 minutes a day.

A TALE OF TWO OILS

What's up with canola and coconut?

BY DAVID SCHARDT

Only on the Internet can a healthy oil be branded a “killer,” while an oil that’s likely not as good for you is lauded as a “life-saver.”

CANOLA OIL

“Poisonous.” “Toxic.” “Avoid like the plague.”

For some reason, people love to hate canola oil. *Really* hate it.

That’s partly because the canola plant is derived from rapeseed, which contains a toxic compound called erucic acid and bitter-tasting compounds called glucosinolates.

But in the 1970s, Canadian scientists—using conventional breeding—developed a type of rapeseed that has very low levels of erucic acid and glucosinolates. Since then, canola has become the second most popular oil in the United States. (It’s a distant second to soybean oil.) But, at least on some websites, the idea that canola is “toxic” has stuck.

Chefs prize canola for its neutral taste. And health experts recommend it because it’s very low in saturated fat and high in mono- and polyunsaturated fats. That means it helps lower LDL (“bad”) cholesterol.

So why all the vitriol? Some critics worry that most canola plants are now genetically engineered. So are most soybean plants, but that’s a subject for a different article. Here’s the lowdown on the other main charges.

CHARGE Canola oil is unfit to eat.

THE FACTS: “Are you cooking with motor oil?” asks Al Sears, one of the Internet’s most vocal opponents of canola oil (alsearsmd.com).

Sears, a Florida physician who specializes in what he calls “integrative, anti-aging medicine,” warns that canola oil has been used as an engine lubricant and in synthetic rubber and ink.

But people have been using edible fats and oils for soap, lubrication, and fuel for thousands of years. Even coconut oil, which Sears touts, is used to make soap and sham-

poo. So is Sears cooking with shampoo?

CHARGE Canola oil damages the heart.

THE FACTS: Critics are confusing canola with rapeseed. The high level of erucic acid in rapeseed did cause lesions in the hearts of a rare breed of laboratory rat, says Sean O’Keefe, a professor of food science at Virginia Tech.

“But there was no damage to the hearts of other strains of rats or other animals,” he adds. “After many studies, the research-



The only thing “hidden” on websites like this is canola oil’s health benefits.

ers realized that their data was accurate only for that inbred rat and certainly not for humans. And, anyway, canola oil doesn’t have enough erucic acid to matter.”

CHARGE Canola oil stiffens cell membranes, causes kidney damage, and leads to premature death.

THE FACTS: All of that did happen when researchers fed canola oil—as the only fat in the diet—to a special strain of rat that easily develops high blood pressure and suffers strokes.

But that doesn’t mean anything about

what happens in people, points out physiologist Paul Lewandowski, an assistant professor and researcher at Deakin University in Australia.

“Unlike humans, this strain of rat absorbs toxic amounts of phytosterols from canola oil, which may account for some of the oil’s toxicity to it,” he explains.

Researchers haven’t had reason to do long-term trials on toxicity in humans. But “based on several human intervention trials we have conducted, there is no evidence to suggest that the typical consumption of canola oil is unhealthy,” notes Peter Jones, Canada Research Chair in Nutrition and Functional Foods at the University of Manitoba.¹

CHARGE Canola is one of the most chemically altered oils.

THE FACTS: Not true, says Jennifer Marchand, who supervises oil processing at Cargill, the largest oil processor in the United States.

“We don’t process canola oil any differently than other seed oils,” she says. Cargill uses essentially the same machinery and methods to produce canola, soy, corn, and sunflower oil, notes Marchand.

CHARGE Canola oil contains LDL-raising trans fat.

THE FACTS: “The use of heat during the processing of vegetable oils can create trans fats,” explains O’Keefe, whose 1994 study at the University of

Florida has fueled some of the fears about trans in canola.² “But these particular trans fats haven’t been tested to see if they raise LDL,” he adds. “And the amounts in canola are usually quite small.”

In fact, a 2002 survey by the Food and Drug Administration found trivial amounts of trans fat—0.02 grams and 0.07 grams per tablespoon—in two major brands of canola oil. The soybean oils the FDA tested had about the same tiny amounts.³

¹ *Am. J. Clin. Nutr.* 100: 88, 2014.

² *J. Food Lipids* 1: 165, 1994.

³ *Lipids* 39: 11, 2004.

COCONUT OIL

“Miraculous.” “Amazing.” “Life Saving.”

For some reason, people love coconut oil. *Really* love it.

Most of the affection isn't directed toward conventional coconut oil, which is added to some candies, coffee creamers, movie theater popcorn, and other foods.

Instead, the web has gone gaga over “virgin” oil, which is made by pureeing coconut meat and gently heating it. (To make conventional oil, coconut is cooked and treated with chemicals like hexane to extract the oil.) Here's what the evidence shows.

CLAIM Coconut oil can help you lose weight by speeding up metabolism.

THE FACTS: Dr. Oz thinks it can. He calls coconut oil “the miracle fat that fights fat.” Yet the only study that tested whether it helps people shed pounds came up empty.

In 2009, a master's degree student in Brazil gave 40 obese women either coconut oil or soybean oil and asked them to cook with two tablespoons of the oil every day. After three months, the women given coconut oil didn't weigh any less—and had no smaller waists—than those given soybean oil.¹

However, the published paper tagged the trivial drop in average waist size (from 39 inches to 38.5 inches) in the coconut oil users as “statistically significant.” It wasn't.

Yet that's all osteopath Joseph Mercola needed to shout about “The Amazing Oil That Trims Women's Waistlines” on mercola.com (where he will happily sell you coconut oil).

Researchers have had more success using oil made entirely of medium-chain triglycerides, or MCTs. (Coconut oil is about 60 percent MCTs.) People metabolize MCTs differently from the long-chain triglycerides found in most other oils.

“MCTs are transported directly from the intestinal tract to the liver, where some of them are burned off as fuel and raise the metabolic rate slightly,” explains Marie-Pierre St-Onge, an assistant professor at Columbia University's Obesity Research Center. *How* slightly?

“The increase amounts to about an

extra 60 calories a day for someone who consumes one to two tablespoons of MCTs a day,” says St-Onge. “It's likely much less with coconut oil, which is only about half MCTs, but nobody knows. The research hasn't been done yet.”

In several small studies, dieters who ate one to two tablespoons of MCT oil a day for three to four months lost about one more pound a month than dieters who ate other oils.²⁻⁵

That's partly due to the small rise in metabolic rate and partly due to MCT oil's modest impact on appetite.

“We estimate that the dieters ate about 40 fewer calories a day on the MCT diets,” says St-Onge. Overall, MCT oil leads to “a small amount of weight loss that can gradually add up,” she notes. “But it's not a magic bullet.”

And it's not cheap. MCT oil costs about five times more than other oils.

es the risk of heart disease, but we're no longer sure that raising HDL cholesterol lowers risk,” says Dutch fats expert Martijn Katan, of the Vrije Universiteit Amsterdam.

“Drugs that raise HDL, for example, haven't prevented heart attacks as we expected. So coconut oil, which raises both LDL and HDL, may not be as healthy for the heart as an oil like canola or soy, which lowers LDL and has little effect on HDL.”

CLAIM Coconut oil can protect the brain from dementia.

THE FACTS: It's not likely...despite Joseph Mercola's claims (“Four tablespoons of this ‘brain food’ may prevent Alzheimer's”).

No good studies have tested whether coconut oil can prevent or treat Alzheimer's or other dementias. So why might coconut or MCT oil help?

In Alzheimer's, the brain loses its ability to use glucose, but it may still be able to use

compounds called ketones. “And the liver can convert MCTs into ketones,” explains pharmacologist Alok Sharma, of MCPHS University in New Hampshire. But that doesn't mean that MCTs or MCT oil can help, adds Sharma.

For one thing, consuming coconut or MCT oil doesn't raise ketone levels in the brain high enough, says Richard Veech, a senior investigator with the National Institutes of Health.

The only large trial that gave Alzheimer's patients MCTs or a placebo reported a benefit in those without ApoE4, a version of a gene that increases Alzheimer's risk. But the study, which was funded by the MCTs' manufacturer, was riddled with irregularities.⁷

CLAIM Coconut oil fights bacteria, as well as viruses like HIV.

THE FACTS: Howstuffworks.com doesn't mince words: coconut oil is “an ideal way to prevent infections.” Don't bet on it.

Coconut oil has never gone up against viruses or bacteria in a well-designed study in people. In mice, it flunked. 🍌



An amazing superfood? Not if you look at the evidence.

CLAIM Coconut oil is good for the heart.

THE FACTS: Researchers haven't looked at whether people who replace other fats with coconut oil suffer fewer heart attacks or strokes. But they *have* tested what coconut oil does to LDL (“bad”) and HDL (“good”) cholesterol.

In a study from Malaysia (a major coconut-oil exporter), researchers fed young people diets that got 20 percent of their calories from either coconut oil or olive oil. After five weeks, LDL was 8 percent higher on the coconut oil diet. HDL was 7 percent higher. But HDL may not matter.⁶

“Raising LDL cholesterol clearly increas-

¹ *Lipids* 44: 593, 2009.

² *J. Nutr.* 131: 2853, 2001.

³ *J. Atheroscler. Thromb.* 10: 290, 2003.

⁴ *Metabolism* 56: 985, 2007.

⁵ *Am. J. Clin. Nutr.* 87: 621, 2008.

⁶ *Am. J. Clin. Nutr.* 94: 1451, 2011.

⁷ *Nutr. Metab.* 6: 31, 2009.



A participant in the study.

Jog Your Memory

A single bout of strength training may give your memory a boost. Researchers randomly assigned 46 young adults to either an active or a passive group. Both groups were shown 90 pictures (but weren't told that they would later be asked to remember them). After some warm-up exercises, the active group had to bend and extend one leg against heavy resistance 60 times (with a break after every 10 extensions). The passive group stayed relaxed while the experimenters used the exercise machine, with no resistance, to move their legs.

Two days later, both groups were shown the 90 original pictures and 90 new pictures for six seconds each, and were asked which they had seen before. The active group remembered the pictures more accurately than the passive group. The stress of doing somewhat strenuous exercise might consolidate memories, suggest the researchers.

What to do: Do strength training twice a week to keep your memory, muscles, and bones in shape. And don't forget to walk, jog, bike, or get other aerobic exercise every day. In some earlier studies, a single bout of aerobic exercise also boosted memory.

Acta Psychologica 153: 13, 2014.

I've Got Rhythm...

Staying active and lean may lower your risk of atrial fibrillation, irregular heart rhythms that are linked to a higher risk of stroke. And if you already have atrial fibrillation, don't expect fish oil pills to help.

Researchers monitored roughly 93,600 postmenopausal women who participated in the Women's Health Initiative Observational Study. After 12 years, the most active women (who walked briskly for at least three hours per week or did the equivalent exercise) had a 10 percent lower risk of atrial fibrillation than those who were sedentary.

Compared to normal-weight women, the risk of atrial fibrillation was higher in those who were overweight, and highest in those who were obese. Women who were obese and inactive had a 44 percent higher risk than those who were normal weight and active. However, the most active obese women had only a 17 percent higher risk.

In a second study, Canadian scientists randomly assigned 337 people with atrial fibrillation to either a daily placebo or fish oil pills that supplied 1,600 mg of EPA and 800 mg of DHA. After six months, there was no difference in how often the participants had episodes of irregular heartbeats.

The researchers also found no difference in markers of inflammation and oxidative stress between the two groups.

What to do: Lose (or don't gain) excess weight, and shoot for at least a half hour of aerobic exercise every day, no matter what you weigh. If you have atrial fibrillation, don't expect fish oil pills to keep your heart rhythm regular.



J. Am. Heart Assoc. 2014. doi:10.1161/JAHA.114.001127. J. Am. Coll. Cardiol. 64: 1441, 2014.

Sugars & Gum Disease

People who consume more sweets and soda have a higher risk of periodontal disease, which is linked to chronic inflammation, heart disease, and type 2 diabetes.

Researchers analyzed data on roughly 2,400 young adults who participated in the National Health and Nutrition Examination Survey. Those who consumed sugary foods like cakes, cookies, ice cream, chocolate candy, and soft drinks most often (at least five times a week) had a 73 percent higher risk of having periodontal disease in at least two teeth than those who never ate those foods.

There was no link with white bread, white rice, or other refined carbs.

What to do: This study suggests, but doesn't prove, that sugars cause periodontal disease. But there are plenty of other reasons to eat (and drink) less sugar.

Am. J. Clin. Nutr. 100: 1182, 2014.

Caffeine & the Kidney

Caffeine may help prevent kidney stones. Researchers tracked nearly 218,000 nurses and other health professionals for roughly eight years. Those who typically consumed around 350 milligrams of caffeine a day had a 20 to 25 percent lower risk of kidney stones than those who consumed no caffeine. (A 16 oz. grande coffee at Starbucks has 330 mg.)

The researchers couldn't be sure if it was coffee, rather than caffeine, that explained the lower risk. When they looked only at people who drank less than one cup of caffeinated coffee per day, caffeine was linked to a lower risk of kidney stones in men but not women.

In some 6,000 of the participants who collected urine samples over a 24-hour period, those who consumed the most caffeine excreted less oxalate. (Most kidney stones are made of calcium oxalate.)

What to do: Drink plenty of fluids to lower your risk of kidney stones. It's too early to know if caffeine (or coffee) lowers risk further. ☕

Am. J. Clin. Nutr. 2014. doi:10.3945/ajcn.114.089987.



Dessert Oasis

BY KATE SHERWOOD

Yes. It's true. "Healthy Cook" and "dessert" can go in the same sentence. 🍌

Got a question or suggestion? Write to Kate at healthycook@cspinet.org. Recipes tested by Haley Baron.



Chocolate, Fruit, & Nut Clusters

- | | |
|---|-----------------------------------|
| 9 oz. dark chocolate (minimum 70% cocoa), chopped | 1 cup dried cherries, unsweetened |
| 2 cups roasted pistachios, unsalted | 1 cup diced dried apricots |
| | 1 cup golden raisins |

In a small pot, bring 2 cups of water to a boil. Remove from the heat. Put the chocolate in a large, heat-resistant bowl. Put the bowl on top of the pot, and stir until the chocolate has melted. • Mix the pistachios,

cherries, apricots, and raisins into the chocolate, then spread into a 10" x 3" rectangle on a parchment-paper-lined baking sheet. • Allow to set at room temperature (about 30 minutes), then cut into 1" squares.

Yields: 30 pieces Prep: 10 mins. ⌚ Cooling: 30 mins. ⌚

Per piece: calories 140 | total fat 8 g | sat fat 3 g | sodium 0 mg
carbs 16 g | fiber 3 g | protein 3 g | added sugar ½ tsp.

Pear Crisp

- | | |
|---------------------------------------|-------------------------------------|
| 8 ripe, firm pears, cored and chopped | ½ tsp. cinnamon |
| 2 Tbs. lemon juice | ¼ tsp. salt |
| 1 Tbs. + ½ cup packed brown sugar | ¼ cup chopped walnuts |
| ¼ cup whole-wheat flour | ¼ cup butter, cut into small pieces |
| 1½ cups old-fashioned rolled oats | ¼ cup canola oil |

Preheat the oven to 350°F. • In a large bowl, mix the chopped pears with the lemon juice and 1 Tbs. of sugar. Transfer to a 9" x 13" baking dish. • In a medium bowl, mix the ½ cup of sugar with the flour, oats,

cinnamon, salt, and walnuts. With a fork, thoroughly mix in the butter and oil. • Sprinkle the crumble evenly over the top of the pears. • Bake until the topping is browned and the pears are tender, 50-60 minutes.

Serves: 12 Prep: 20 mins. ⌚ Cooking: 1 hr. ⌚

Per serving: calories 250 | total fat 11 g | sat fat 3 g | sodium 55 mg
carbs 37 g | fiber 5 g | protein 3 g | added sugar 2½ tsp.



Apple Almond Custard Cake

- | | |
|---------------------------|--|
| 1 Tbs. butter | ¼ cup whole-wheat flour |
| 1 Tbs. + ¼ cup sugar | ½ tsp. almond extract |
| 1 cup 2% milk | 4 apples, cored, peeled, and thinly sliced |
| 3 large eggs | ¼ cup sliced almonds |
| ¾ cup almond meal (flour) | |

Preheat the oven to 325°F. • Generously butter a 9" round baking dish with the butter and sprinkle with 1 Tbs. of sugar. • In a large bowl, whisk the ¼ cup of sugar, milk, eggs, almond meal, whole-wheat flour, and extract into a smooth batter. •

Arrange the apples flat in the baking dish. Pour the batter over the apples. Sprinkle the almonds across the top. • Bake until the center is firm and the almonds are starting to brown, 55-60 minutes. • Serve warm.

Serves: 8 Prep: 20 mins. ⌚ Cooking: 1 hr. ⌚

Per serving: calories 220 | total fat 11 g | sat fat 2.5 g | sodium 45 mg
carbs 26 g | fiber 3 g | protein 7 g | added sugar 2 tsp.



COFFEE, TEA, & CALORIES

TOP PICKS AT COFFEE HOUSES

BY JAYNE HURLEY & BONNIE LIEBMAN

Six out of ten Americans drink coffee every day. And millions pick up their cup of joe (or their Caramel Mocha Cookie Chip Whip Latte) at a Starbucks, Panera, or other coffee shop.

What's in that cup...or in the breakfast sandwich, pastry, or parfait you may grab with it? Maybe more than you think. Here are some of your best bets for a breakfast and beverage on the go.

The information for this article was compiled by Paige Einstein.



DRINKS

A milkshake for grownups. That's one way to think of a Starbucks Eggnog Latte, White Chocolate Mocha, or Java Chip Frappuccino, each of which packs about 600 calories into a venti (20 to 24 oz.). And a good chunk of those calories comes from added sugar—about 19 teaspoons' worth in the Java Chip, for example.

If you want a drink that won't show up on your Starbucks side, read on.

■ **Cappuccinos, Lattes, etc.** Like your coffee, espresso, tea, etc., unsweetened? Go for it.

If you're a milk fan, stick with nonfat for your Caffè Latte (espresso, steamed milk, and foam), Cappuccino (a latte with less milk and more foam), or Caffè Misto (half coffee, half steamed milk, with a bit of foam). (If the Misto isn't on the menu board, ask for it.)

You'll walk away with just 70 to 130 calories (in a 16 oz. grande), but they come from milk, so they're nutrient-rich. A grande nonfat latte, for example, is a good source of protein (13 grams), calcium (45 percent of a day's worth), vitamin B-12 (30 percent), potassium (12 percent), and zinc (10 percent).

■ **Frappuccinos.** Whole milk and whipped cream give most grande Frappuccinos around 10 grams—half a day's worth—of saturated fat. And their added sugar (10 to 14 teaspoons) helps boost the calories to around 400. Ouch.

Light Frappuccinos replace the whole milk with nonfat, ax the whipped cream, and cut back on the sugar by using the safe sweetener stevia. To keep a grande's added sugar down around 4 teaspoons and its calories at 110, get a Coffee Light Frappuccino. The syrups and/or chocolate chips in a Caramel, Java Chip, or Mocha Light Frappuccino add another 1 to 4 teaspoons of sugar.

■ **Smoothies.** The best—the Orange Mango—is mostly orange juice, mango purée, a banana, milk, and whey protein. With 270 calories, 16 grams of protein, and no added sugar, it puts Smoothie King to shame. Even so, you're better off *eating*, rather than drinking, your calories.

FOOD

Starbucks' La Boulange "artisanal pastries" are mostly white flour, sugar, and butter. Instead, try:

■ **Oatmeal.** The 160-calorie unadorned oatmeal has 4 grams of fiber, roughly half of it the soluble kind that helps lower cholesterol. The Hearty Blueberry comes with packets of fresh blueberries (20 calories) and dried fruit, nuts, and seeds (70 calories). The Classic has dried fruit (100 calories) and nuts (100 calories). Skip the packet of brown sugar or agave

syrup. Downside: only 5 grams of protein (7 grams with a nut topping).

■ **Yogurt parfaits.** All three are made with nonfat plain greek yogurt, so you get about 15 grams of protein and 15 percent of a day's calcium. But you also get 5 or 7 teaspoons of sugar (much of it added), thanks to the honey, sweetened berries, or sweetened raspberry purée and lemon curd. You can lose roughly 2 teaspoons of sugar by skipping the granola and up to 4 teaspoons by shunning the honey. For 220 to 310 calories, it's a decent pick.

■ **Spinach Feta Wrap.** You get egg whites, spinach, tomatoes, feta cheese, and a (mostly) whole wheat wrap, without all the sugar in Starbucks' sweets. That adds up to 19 grams of protein for only 290 calories and 4 grams of sat fat. Despite the sodium (830 milligrams), it's still a top pick. And it beats the healthy-sounding Vegetable & Fontiagio Breakfast Sandwich, which has 470 calories and about twice as much sat fat.

■ **Reduced-Fat Turkey Bacon Breakfast Sandwich.** The reduced-fat cheddar, egg whites, and (mostly) whole wheat English muffin are a plus. The reduced-fat turkey bacon has nitrite, so it's only okay if you'd otherwise get pork bacon. The calories (230), sat fat (3 grams), and protein (13 grams) are admirable.



Starbucks parfaits are made with greek yogurt. Not a parfait fan? Try the Spinach Feta Wrap.

DRINKS

Panera has a Caramel and a Pumpkin Spice Latte with enough added sugar (6 or 9 teaspoons), whipped cream, and 2% milk to drop nearly 400 calories and half a day's saturated fat (10 grams) into your 16 oz. morning java. (See "Tips To Go" to slim them down.)

Even worse: a 16 oz. Frozen Caramel or Mocha. Each has about 550 calories plus 12 grams of sat fat (thanks to half-and-half and whipped cream) and 16 teaspoons of added sugar. And who would expect 510 calories in a Signature Hot Chocolate, which comes with a bonus 11 teaspoons of added sugar and 10 grams of sat fat? A better option:

■ **Smoothie.** The 16 oz. Fat-Free Superfruit Power Smoothie beats the other flavors. Thanks to its unsweetened greek yogurt, you get 14 grams of protein for just 210 calories. And stevia helps cut down on added sugar, so most of the 7 teaspoons' worth comes from fruit juices (not great) and purées (better).

Other 16 oz. Panera smoothies have around 300 calories, half the protein, and more added sugar. Not worth it.

FOOD

Ignore the pastries (400 calories), the muffins, scones, and coffee cake (500 calories), and the cinnamon rolls (650 calories).

Also skip the soufflés. They're buttery white-flour croissant dough filled mostly with eggs, cheese, and/or bacon. Each has about 500 calories plus 15 to 20 grams of saturated fat and roughly 900 milligrams of sodium you could do without. Instead, try:

■ **Oatmeal.** The thicker-than-instant Steel Cut Oatmeal (180 calories) comes with pecans (100 calories) and either strawberries (10 calories) or apple chips (40 calories). Just ask them to leave off the Cinnamon Crunch (50 calories).



With either topping, you get 8 grams of fiber, but just 6 grams of protein. You can boost that to 14 grams by having your oatmeal with a nonfat Caffe Latte.

■ **Strawberry Granola Parfait.** On the plus side,

you get fresh strawberries, low-fat yogurt, and granola with no refined grains. And its 310 calories include 9 grams of protein and a quarter of a day's calcium. But you also get about 4 teaspoons of added sugar and 5 grams of sat fat (largely from the granola's coconut). Memo to Panera: try higher-protein plain greek yogurt. And let patrons add their own nuts and fruit.

■ **Egg white sandwiches.** The Egg White, Avocado & Spinach, the Turkey Sausage, Egg White & Spinach, and the Mediterranean Egg White beat the other breakfast sandwiches.

All three hover around 400 calories (instead of the usual 500+) and have around 6 grams of sat fat (rather than 10-or-so grams). And their sodium (640 to 830 milligrams), though still high, is lower than the usual 1,000 mg.

What's more, they come with 11 to 16 grams of protein, thanks to the egg whites and cheese (and, in one case, turkey). And you can get all three on a partly whole grain Sprouted Grain Bagel Flat. Not perfect, but not too shabby.

■ **Breakfast bowls.** On Panera's "Hidden Menu" (ask the manager if you get a blank stare), you'll find the Egg White with Roasted Turkey Power Breakfast Bowl, which includes warm baby spinach, roasted peppers, and basil pesto. It squeezes 26 grams of protein into just 170 calories, with virtually no sat fat. It's not low in sodium (500 mg), but sugar and white flour are missing in action.

It's got a tad more protein than the 270-calorie Egg with Steak Power Breakfast Bowl, which piles two whole eggs (and their cholesterol) and avocado slices on top of red meat. The steak is (lean) sirloin, so the sat fat stays at 5 grams.



Oatmeal is just the start. Panera has the most "better breakfast" foods.

Tips To Go

■ **Nonfat milk.** At **Starbucks**, switch from 2% milk to nonfat to save 60 calories and 5 grams of sat fat in a grande latte, and 40 calories in a grande cappuccino. **Panera** uses less milk, so the same swap saves 30 calories in a medium latte or cappuccino. At **McDonald's**, getting nonfat milk instead of whole saves 80 calories and 6 grams of sat fat in a medium.

■ **Soy milk.** Swapping 2% milk for soy saves only 20 calories in a grande latte at **Starbucks**. (Its soy milk has 4 teaspoons of added sugar.) At **Panera**, soy milk cuts 30 calories but tacks on 2 teaspoons of added sugar. At either chain, the soy has 3 grams less protein.

■ **Whipped cream.** Skip the whip to save 70 to 110 calories and 5 to 7 grams of sat fat in a medium drink.

■ **Syrups.** At **Starbucks**, each pump has about 20 calories and 1 teaspoon of sugar. A tall gets 3 pumps, a grande gets 4, and a venti gets 5. The sugar-free (calorie-free) syrups are sweetened with sucralose (which we give a "caution" rating for safety—see chemicalcuisine.org).

At **Panera** and **McDonald's**, syrups add around 100 calories and 5 to 7 teaspoons of sugar to a medium latte. At both chains, the sugar-free syrups contain acesulfame-potassium (which we rate as "avoid") and sucralose.

■ **Tea.** A **Starbucks** grande Classic Chai Tea Latte has 240 calories and 7 teaspoons of added sugar. An Oprah Chai Tea Latte has 200 calories and 5 teaspoons, as does a Chai Tea Latte at **Panera**. Sugar overload.

■ **Caffeine.** At **Starbucks**, you'll get 50-100 mg in a grande chai tea latte, 100 mg in a Frappuccino made with coffee, 150 mg in a latte or cappuccino, and 330 mg in a regular coffee.

At **Panera**, expect 20 mg in a medium chai tea latte, 120 mg in a latte or cappuccino, 190 mg in a regular coffee, and 270 mg in a frozen caramel or mocha.

At either chain, you'll get about 70 mg in a shot of espresso.

McDonald's doesn't publish numbers.





DRINKS

i'm lovin' it®

McDonald's doesn't even pretend that its McCafé Frappés are anything *but* milkshakes. Good thing, since they're largely sugar, cream, whole milk, coffee extract, whipped cream, and chocolate and/or caramel drizzle. A medium (16 oz.) is loaded with calories (about 570), saturated fat (15 grams), and added sugar (15 teaspoons). A large (22 oz.) Chocolate Chip McCafé Frappé has 750 calories (along with 20 grams of sat fat and 20 teaspoons of sugar). That's more calories than almost any single item on the menu (except the other shakes).

With two-thirds of adults and a third of children either overweight or obese, how smart is it to sell 750-calorie milkshakes laced with caffeine, which keeps people coming back for more?

And don't bother with the chain's healthier-sounding

Smoothies. They're overrated drinks that are mostly fruit purée and nutrient-poor apple, grape, and "clarified" pineapple juices, with so little yogurt that a 260-calorie medium has just 3 grams of protein.

Instead, try:

■ **McCafé Latte.** A plain, unsweetened latte with nonfat milk delivers 12 grams of protein and 40 percent of a day's calcium for just 130 calories in a medium. But get a Caramel, French Vanilla, or Hazelnut latte with whole milk, and you're looking at around 330 calories, 6 grams of sat fat, and 7 teaspoons of added sugar. Yikes.



The best sandwich at McDonald's? An Egg White Delight McMuffin sans the Canadian bacon.

FOOD

Ignore most of the menu. Instead, try:

■ **Fruit & Maple Oatmeal.** It comes with brown sugar (30 calories—about 3 teaspoons), a splash of light cream (20 calories), apples (10 calories), and a mix of raisins and sweetened dried cranberries (70 calories) already mixed in. You're looking at 290 calories' worth of whole grain and fruit and 5 grams of fiber. Pair it with a medium nonfat latte to boost its protein from 5 grams to 17.

■ **Egg White Delight McMuffin.** Say hello to the chain's best breakfast sandwich. Egg whites, extra-lean Canadian bacon, and cheddar on a part-whole-grain English muffin add up to 250 calories, 3 grams of sat fat, and 18 grams of protein. Downsides: 770 milligrams (half a day's worth) of sodium and nitrite in the bacon.

■ **Parfait.** Berries (20 calories) plus sweetened yogurt (100 calories) and sweetened granola (30 calories) contribute some 3 teaspoons of added sugar. For 150 calories, you get 4 grams of protein, 10 percent of a day's calcium, and 15 percent of a day's vitamin C. You could do a lot worse. 🍓

What's Brewing?

Within each section, foods are ranked from least to most calories, then least to most saturated fat, then most to least protein. See our tips on page 13 for how to slim down your drinks.

STARBUCKS

Drinks (*grande*—16 fl. oz. unless noted)

Cappuccinos, Lattes, etc. (2% milk, no whip unless noted)

	Calories	Sat Fat (g)	Added Sugar (tsp.)*	Protein (g)
Coffee, Espresso (1 shot—1 oz.), or Tea, no milk, unsweetened (any chain)	5	0	0	0
Caffè Misto, nonfat	70	0	0	7
Cappuccino, nonfat	80	0	0	8
Iced Caffè Latte, nonfat	90	0	0	8
Iced Coffee, no milk	90	0	5	0
Cappuccino	120	2	0	8
Caffè Latte, nonfat	130	0	0	13
Caffè Latte, soy	170	0	4	9
Caffè Latte	190	5	0	12
Oprah Chai Tea Latte	200	3	5	7
Classic Chai Tea Latte	240	2	7	8
Caramel Macchiato	240	4	4	10
Caffè Latte, flavored with regular syrup	250	4	4	12
Gingerbread Latte, with whip	320	8	5	12
Caramel Brulée Latte, with whip	430	7	8	11
Eggnog Latte	460	12	6	16

Hot Chocolate & Mochas (2% milk, with whip)

Caffè Mocha	330	9	5	13
Hot Chocolate	370	9	6	14
Peppermint Hot Chocolate or Peppermint Mocha ¹	430	9	10	13
White Chocolate Mocha	470	12	9	15

Light Frappuccinos (nonfat milk, no whip)

Coffee	110	0	4	3
Caramel or Mocha ¹	140	0	6	4
Java Chip	200	3	8	5

Frappuccinos (whole milk, with whip unless noted)

Coffee, no whip	240	2	11	3
Caramel, Double Chocolatey Chip, Mocha, or Vanilla Bean ¹	410	10	12	5
Java Chip	460	12	14	6

Smoothies (2% milk)

Orange Mango	270	1	0	16
Strawberry	300	1	0	16

Breakfast Foods

Bakery Items

	Calories	Sat Fat (g)	Total Sugar (tsp.)	Protein (g)
Butter Croissant	260	9	1	6
Tomato & Cheese Savory Square	280	7	1	6
Multigrain Bagel	290	0	1	14
Blueberry Yogurt Muffin with Honey	320	3	7	6
Reduced-Fat Berry Coffee Cake	320	4	7	5
Cheese Danish	320	9	4	8
Chocolate Croissant	340	10	3	7
Almond Croissant Blossom	380	10	4	15

	Calories	Sat Fat (g)	Total Sugar (g)	Protein (g)
Caramel Pecan Sticky Bun	380	11	5	5
Classic Coffee Cake	390	10	7	5
Wheat Spinach Savory Square	390	13	2	9
Morning Bun	400	8	6	7
Pumpkin Bread	410	3	9	6
Beef Sausage Croissant	410	14	1	14
Banana Nut Bread	420	3	7	6
Blueberry Scone	420	10	5	5
Iced Lemon Pound Cake	470	9	10	6
Old-Fashioned Glazed Doughnut	480	13	7	5

Fruit, Oatmeal, & Yogurt

Seasonal Harvest Fruit Blend	90	0	5	1
Greek Yogurt with Berries Parfait	220	0	5	14
Greek Yogurt with Honey Parfait	260	1	7	15
Greek Yogurt Raspberry & Lemon Parfait	310	3	7	13
Whole-Grain Oatmeal—Classic or Hearty Blueberry ¹	340	2	6	8

Breakfast Sandwiches

	Calories	Sat Fat (g)	Sodium (mg)	Protein (g)
Reduced-Fat Turkey Bacon	230	3	560	13
Spinach Feta Wrap	290	4	830	19
Bacon & Gouda	350	7	820	17
Vegetable & Fontiago	470	7	910	18
Slow-Roasted Ham & Swiss	490	12	830	20

PANERA BREAD

Drinks (medium—16 fl. oz. unless noted)

	Calories	Sat Fat (g)	Added Sugar (g)	Protein (g)
Cappuccinos, Lattes, etc. (2%, no whip unless noted)				
Caffe Latte or Cappuccino, nonfat	90	0	0	8
Caffe Latte, soy	90	0	2	5
Caffe Latte or Cappuccino	120	3	0	8
Chai Tea Latte	200	3	5	7
Vanilla Latte	230	3	5	9
Caffe Mocha, with whip	360	9	6	10
Caramel Latte or Pumpkin Spice Latte, with whip	390	10	7	9
Signature Hot Chocolate, with whip	510	10	11	12
Frozen Caramel or Frozen Mocha, with whip ¹	550	12	16	5

Smoothies

Low-Fat B-Green Power Smoothie (small, 12 fl. oz.)	190	0	NA	2
Fat-Free Superfruit Power Smoothie	210	0	NA	14
Low-Fat Smoothie—Mango, Strawberry, or Wild Berry ¹	300	1	NA	7

Breakfast Foods

Bakery Items

	Calories	Sat Fat (g)	Total Sugar (g)	Protein (g)
Sprouted Grain Bagel Flat	240	0	1	10
Pumpkin Muffin	290	2	6	3
French Croissant	300	10	1	6
Whole Grain Bagel	340	0	1	13
Pastry—Cheese, Cherry, or Chocolate ¹	410	13	5	7
Cinnamon Crunch Bagel	420	5	7	10
Cinnamon Crumb Coffee Cake	470	9	7	6

	Calories	Sat Fat (g)	Total Sugar (g)	Protein (g)
Wild Blueberry Scone	470	12	6	8
Cobblestone	570	7	13	11
Pumpkin Muffin	590	4	13	7
Cinnamon Roll	630	14	8	13
Pecan Roll	740	12	12	11

Fruit, Oatmeal, & Yogurt

Seasonal Fruit Cup	60	0	3	1
Strawberry Granola Parfait	310	5	7	9
Steel Cut Oatmeal—with Apple Chips & Pecans or with Strawberries & Pecans ¹	360	2	4	6

Breakfast Bowls, Sandwiches, & Soufflés

	Calories	Sat Fat (g)	Sodium (mg)	Protein (g)
Egg White with Roasted Turkey Power Breakfast Bowl	170	1	500	26
Egg with Steak Power Breakfast Bowl	270	5	440	24
Ham, Egg & Cheese Power Sandwich	340	7	920	16
Turkey Sausage, Egg White & Spinach Power Sandwich	410	6	800	16
Egg White, Avocado & Spinach Power Sandwich	410	6	640	11
Mediterranean Egg White on Ciabatta	420	6	830	12
Soufflé, any flavor ¹	520	17	850	19
Sausage, Egg & Cheese on Ciabatta	550	12	1,050	28

MCDONALD'S

Drinks (medium—16 fl. oz. unless noted)

	Calories	Sat Fat (g)	Added Sugar (g)	Protein (g)
McCafé Drinks (no whip unless noted)				
Latte, nonfat	130	0	0	12
Sweet Tea (medium, 21 fl. oz.)	180	0	11	1
Iced Coffee (medium, 22 fl. oz.) ¹	180	5	7	1
Latte, whole—Caramel, French Vanilla, or Hazelnut ¹	210	6	0	11
Smoothie, any flavor ¹	260	0	NA	3
Latte, whole ¹	330	6	7	11
Caramel Mocha or Mocha, whole, with whip ¹	400	8	8	13
Hot Chocolate, whole, with whip	440	9	9	14
Frappé, any flavor, with whip ¹	570	15	15	9

Breakfast Foods

Oatmeal & Yogurt

	Calories	Sat Fat (g)	Total Sugar (g)	Protein (g)
Parfait	150	1	5	4
Fruit & Maple Oatmeal	290	2	8	5

Breakfast Platters & Sandwiches

	Calories	Sat Fat (g)	Sodium (mg)	Protein (g)
Egg White Delight McMuffin	250	3	770	18
Steak, Egg & Cheese Bagel	670	13	1,510	33
Big Breakfast	740	17	1,560	28

*Estimated. ¹Average. NA Number not available.

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

Sodium: 1,500 milligrams. **Added Sugar:** 6 teaspoons for women, 9 teaspoons for men. (Note: To convert teaspoons of sugar to grams, multiply by 4.2.)

Protein Daily Target: 75 grams.

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

RIGHT STUFF

KALE FOR KEEPS



Kale is everywhere these days, from chips and juices to nail polish and skin lotion. Now everywhere includes your freezer.

Earthbound Farm Organic Kale can sit there quietly until you're in the mood for a superstar green. Then it goes straight from freezer to recipe with no washing or chopping.

You can pick up decent frozen kale from **Stahlbush Island Farms**, **Trader Joe's**, or **Whole Foods 365 Organic**, but they're second best next to Earthbound's irresistible, flavorful leaves.

You won't be thinking about the vitamin A (110 percent of a day's worth), vitamin C (60 percent), and calcium (10 percent) that are listed on the package. Or the load of lutein and vitamin K in each 25-calorie (1/3-cup) serving.

Trust us. Just throw a handful from the freezer into your soup or pasta sauce. Or run some under warm water for a minute, squeeze out the excess water, chop, and toss into your salad.

Or sauté some minced garlic in olive oil, add frozen kale, and stir-fry over medium-high heat until the greens are tender, about 2 to 3 minutes. Mushroom fan? Slice in some baby bellas or shiitakes right after the garlic. Mmm.

Don't feel like turning on a burner? Place half the bag's contents in the microwave for 2 minutes. For the entire bag, double the time. (You shouldn't need the 7 to 9 minutes that Earthbound suggests.) Then drizzle with olive oil. You'll devour it on the spot.

The kale craze is in full swing. Now you can keep it on ice, ready to rumble.

ebfarm.com — (800) 690-3200

FOOD PORN

BIG MACSTAKE

Leave it to **Applebee's**. Why create healthy new menu items when you can toss two old standbys onto one plate and "invent" a new dish? All you need is a zippy name...something like, say, **4-Cheese Mac & Cheese with Honey Pepper Chicken Tenders**.



Tossing in the add-on *du jour* doesn't hurt, either. According to Applebee's menu, the mac & cheese is "loaded with Applewood smoked bacon." Ah, yes. If bacon can show up in everything from ice cream to doughnuts, why not in mac & cheese and fried chicken? It's a no-brainer.

And speaking of brains, consider switching yours off when you order the 4-Cheeser. Better not to know that the dish will dispatch 1,830 calories to those tender parts that are padding

your midsection. And that the calories come with a nice dose of white flour from the pasta, breadstick, and breading.

Your arteries will be too busy dealing with the 41 grams of saturated fat and 4,300 milligrams of sodium to fuel much brain activity anyway. And do you really want to know that your dish is roughly equal to four McDonald's Double Cheeseburgers?

Next time, take a look at Applebee's Have It All menu, which promises "indulgent flavors & satisfying portions all under 550 calories."

Memo to corporate: If you can turn out entrées like Napa Chicken & Portobellos and Savory Cedar Salmon for less than 550 calories, why sell those other belly-and-brain-overload dishes in the first place?

applebees.com — (888) 592-7753

dish OF THE MONTH



Orange You Glad!

Peel and slice 3 navel oranges. • Mix 1/4 tsp. vanilla extract with 6 oz. 0% plain greek yogurt. • Microwave 2 Tbs. orange marmalade until pourable, 10-15 secs. • Divide orange slices among 4 plates. Top each slice with a dollop of yogurt and a drizzle of marmalade.

quick tip

"Sell by" and "Best if used by" dates let you know when a food passes its peak quality or taste, not when it becomes unsafe. But if any food looks, smells, or tastes "off," toss (or return) it, no matter what the date.