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CENTER FOR SCIENCE IN THE PUBLIC INTEREST

Sugar Belly

How Much is Too Much Sugar?

BY BONNIE LIEBMAN

You've heard of a beer belly. Now there's new evidence that the fructose in added sugars may send more of your extra calories to that bulge where your waist used to be.

For years, researchers have found a higher risk of type 2 diabetes, heart disease, high blood pressure, high triglycerides, gout, and weight gain in people who consume more sugar-sweetened beverages. Now a flurry of new studies suggests that our out-of-control sweet tooth is connected to our out-of-control belly fat.

And it's that kind of fat that may cripple the body's ability to use insulin, setting the stage for diabetes and heart disease.

Continued on p. 3.

MEMO FROM MFJ

Liquid Candy



Soda pop was once an occasional treat for millions of people. I remember drinking Coke on picnics or at Sunday dinners when I was a kid in the 1950s.

I pretty much gave up sugary drinks in the 1970s as I learned about the sugar,

dyes, and other things they contained. But at the same time, America was gulping them down with ever greater alacrity.

Vending machines were being installed everywhere. Fast-food restaurants helped make soft drinks the default beverage for new generations of kids. Container sizes ballooned from 6½ ounces to 12 ounces to 20 ounces. Restaurants and convenience stores started offering half-gallon cups and free refills.

Consumption of regular soda tripled between 1957 and 1998, when the industry produced about 450 12-ounce servings for every American. And that doesn't include the gallons of sugar-laden non-carbonated fruit drinks, bottled teas, energy drinks, and sports drinks that we swallow each year. Some people, especially teens, drink a six-pack a day of sugary drinks and get a quarter of their calories from the added sugars.

The Center for Science in the Public Interest (publisher of *Nutrition Action*) began a serious campaign against soft drinks in 1998

when we published *Liquid Candy: How Soft Drinks are Harming Americans' Health*.

Dentists had long argued that soda causes cavities. New research was linking soft drinks to weight gain and obesity—a cause of heart attacks, strokes, diabetes, and cancer. Soft drinks also displace nutrient-rich milk.

Non-diet soda peaked in 1998. Since then, we've cut our consumption every year, so that by 2010 we drank almost 25 percent less than in 1998. Bottled water (much of it marketed by Coke and Pepsi) has taken up the slack.

The battle against sugary beverages is in full swing. Boston and New York City are ridding public office buildings and parks of them. And health departments are creating anti-soda videos (for New York City's, see youtube.com/user/drinkingsugar).

The Food and Drug Administration also needs to act. It should require warning notices

on soft drinks, set a Daily Value for "added sugars," and require added sugars (instead of total sugars) on Nutrition Facts labels. And the government should get sugary drinks out of cafeterias and vending machines in office buildings, national parks, and other facilities.

But the single most important thing that federal, state, and local governments could do would be to slap a tax on all sugary drinks. Depending on the rate (some have proposed one cent per ounce or 12 cents per can), a national excise tax would reduce consumption by up to 23 percent, generate \$15 billion annually, and help fund programs that promote health.

Now that would be sweet.



New York City has mounted the heaviest anti-soda campaign to date.

Soda Summit: June 7-8 Washington, DC

A national conference of health experts and concerned citizens to develop strategies to shove the soda-pop genie back into the bottle.

For the agenda and registration information, visit fewersugarydrinks.org



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

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Sugar Belly

How Much is Too Much?

OBESITY

Do sugary foods and drinks deserve more blame for America's obesity epidemic than other foods?

"There is strong evidence linking sugar-sweetened beverages to weight," says Vasanti Malik, a research fellow at the Harvard School of Public Health.

For example, when she and her colleagues tracked more than 50,000 women for four years, they found that weight gain was greatest (about 10

pounds) among women who went from drinking no more than one sugar-sweetened drink a week to at least one a day.¹

"But most industry-funded studies have reported no association," she notes. "This back-and-forth with industry has been muddying the waters."

For example, a 2009 meta-analysis by scientists with industry ties found no link between soft drinks and weight in children.²

"But there were some errors in the way they scaled the data," Malik explains.

What's more, some studies in the industry-funded analysis only compared soda drinkers to non-soda drinkers *who consumed the same number of calories*.

"It doesn't make sense to adjust for total calories because extra calories may explain *how* sugar-sweetened beverages lead to obesity," says Malik.

"When we re-analyzed the data correctly, there *was* an association between weight and sugar-sweetened beverages."³

What about the added sugars

Soft drinks, sports drinks, fruit drinks, energy drinks, coffee drinks, cupcakes, cookies, muffins, doughnuts, granola bars, chocolate, ice cream, sweetened yogurt, cereal, candy. The list of sweet temptations is endless.

The average American now consumes 22 to 28 teaspoons of *added sugars* a day—mostly high-fructose corn syrup and ordinary table sugar (sucrose). That's 350 to 440 empty calories that few of us can afford.

How much added sugar is too much? Cutting back to 100 calories (6½ teaspoons) a day for women and 150 calories (9½ teaspoons) a day for men might mean slimmer waistlines and a lower risk of disease.

in solid foods? "There's not as much evidence for them," says Malik. "We haven't looked at that carefully yet."

"We focused on sugar-sweetened beverages because they're the largest contributor of added sugar intake," she adds, "and because of the lack of compensation for liquid calories."

Studies find that people may "compen-

sate" for the calories they get from solid foods by eating less later in the day. But that doesn't seem to happen when people drink liquid calories.⁴

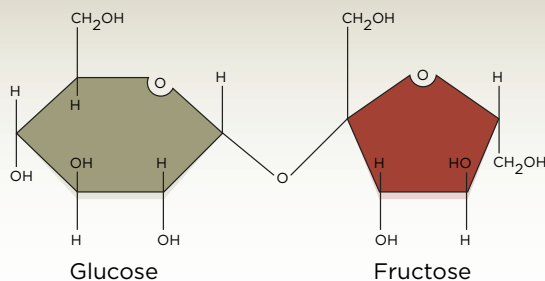
"In one study, people given jelly beans consumed less at subsequent meals than those who were given the same calories as liquid sugary beverages," says Malik.

More evidence that sugary beverages can plaster on the pounds: In three studies, scientists randomly assigned people to consume either sugary

beverages (made with sugar or high-fructose corn syrup) versus diet beverages (usually made with aspartame) for three to 10 weeks.⁵⁻⁷ Sure enough, only those who consumed sugar or high-fructose corn syrup gained weight.

But now researchers are hot on the trail of a new lead: Is the fructose that makes up roughly half of most added sugars more likely to migrate to your belly than elsewhere?

Sugars 101



Sucrose (table sugar) is broken down—in the body and (to some extent) in foods—to half fructose and half glucose. At that point it is almost identical to most high-fructose corn syrup. Fruit contains a mixture of fructose, sucrose, and glucose.

A Beeline to the Belly

Clearly, too many calories from *anything*—sugary beverages, beer, burgers, fries, pizza, ice cream, or dozens of other foods—explains why many American waists have been replaced by a spare tire.

And studies haven't found that you'd gain more pounds from, say, 100 calories of added sugars than from 100 calories of other foods. But calories from fructose (which is found only in added sugars and fruit) may be more likely than other calories to aim for

>>>>

your waist.

To find out if fructose is destined to end up around your midsection, researchers compare fructose to glucose (which is found in added sugars but is also the building block of starches).

The first solid evidence came in 2009. Researchers gave 32 overweight or obese middle-aged men and women 25 percent of their calories from beverages sweetened with either fructose or glucose for 10 weeks.⁸

Both groups gained the same weight (about three pounds). But their new fat didn't all go to the same place.

"We saw an increase in visceral fat in people fed fructose," says study author Kimber Stanhope of the University of

California, Davis.

Visceral (deep belly) fat is more closely linked to a higher risk of heart disease and diabetes than subcutaneous (just below the skin) fat. (See "Where's the Fat?")

"The high-fructose corn syrup industry's scientific consultants criticized our study," says Stanhope. "They said, 'This is meaningless. No one consumes foods sweetened with pure fructose so no one consumes that much fructose.'"

Now two new studies have reported similar results with less fructose:

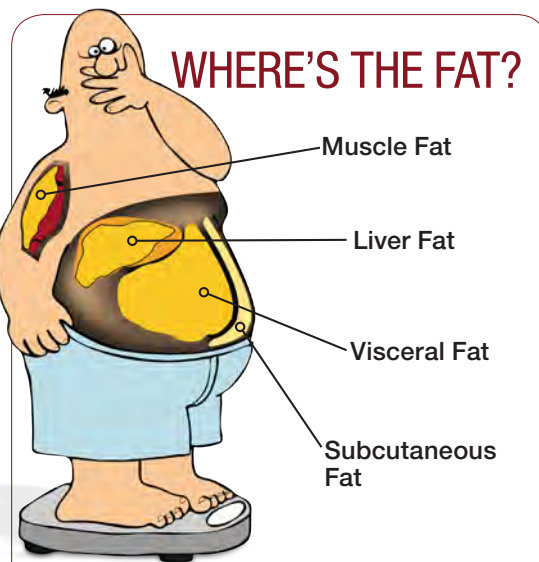
■ **Danish scientists** assigned 47 overweight men and women to drink a liter (not quite three 12 oz. cans) a day of one of four drinks: regular cola (sweetened with sucrose), reduced-fat milk, diet cola (sweetened with aspartame), or water.⁹ (Sucrose is half glucose and half fructose.)

After six months, visceral fat went up only in those drinking regular cola. "The increase in visceral fat was quite impressive," says Stanhope.

And a liter isn't much. Roughly half the population doesn't drink sugary beverages, but among the drinkers, 50 percent swallow at least half a liter a day and 5 percent gulp down at least 1½ liters.¹⁰

■ **Swiss researchers** assigned 29 healthy, normal-weight men to drink beverages with one of the following: 10 teaspoons of fructose, 20 teaspoons of fructose, 10 teaspoons of glucose, 20 teaspoons of glucose, or 20 teaspoons of sucrose each day.¹¹

"Those aren't large amounts," notes Stanhope. A 12 oz. can of soda has about 10 teaspoons of sugars (roughly half fructose and half glucose). The 10-teaspoon dose was only about 7 percent of the men's calories.



The fructose in most added sugars appears to boost liver, muscle, and visceral fat. Excess fat anywhere in the body increases the risk of insulin resistance and diabetes. But a fatty liver and visceral fat may increase your risk the most.

After just three weeks, waist-to-hip ratio rose slightly only in the men who got fructose (alone or in sucrose), but not glucose. (Measuring waist-to-hip ratio isn't as accurate as measuring visceral fat, but when your waist expands, it's often because visceral fat expands.)

"With three studies now, these data suggest that added sugars cause an increase in visceral fat," says Stanhope.

And links between visceral fat and sugary foods or drinks are now showing up elsewhere. When University of Minnesota researchers studied nearly 800 men and women, those who drank the most sugar-sweetened beverages had more visceral fat and larger waists.¹²

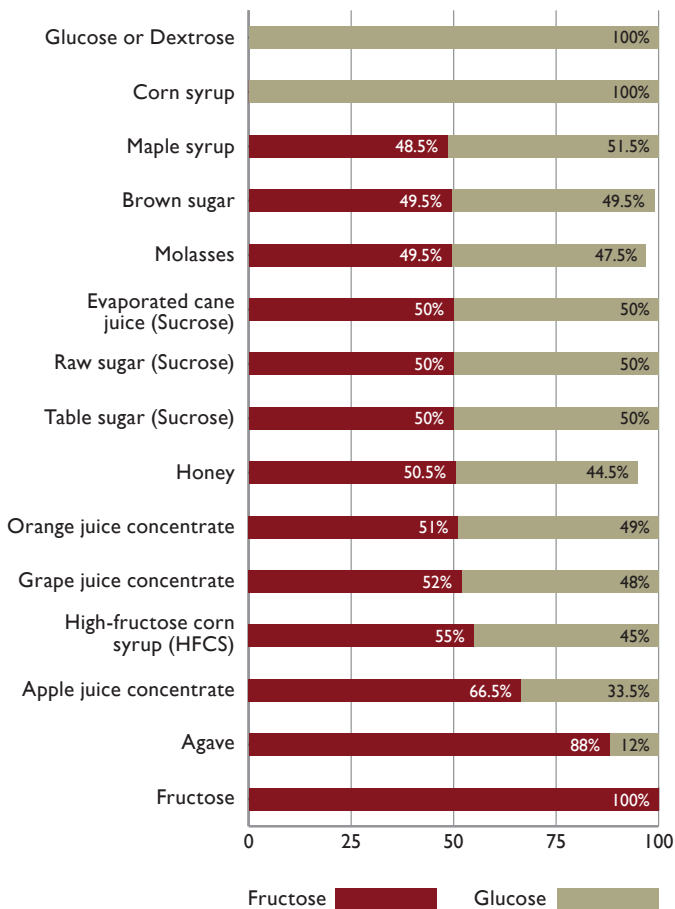
"We observed greater overall abdominal fat with increasing sugar-sweetened beverage consumption, and the increase in visceral fat was driving it," says Andrew Odegaard, a research associate at the University of Minnesota School of Public Health.

And among roughly 560 teenagers, those who consumed the most fructose (from beverages and food) had the most visceral fat, as well as the most insulin resistance, higher blood pressure, and higher blood sugar levels.¹³

"We took into account a lot of variables that could make this relationship spurious—fiber, calorie intake, fat and lean mass, socioeconomic status, physical activity," says author Norman Pollock, an assistant professor of pediatrics at the Georgia Health Sciences University in Au-

Sugar by Any Other Name

With a few exceptions (like agave and corn syrup), most sweeteners and the naturally occurring sugars in fruit break down into roughly half fructose and half glucose in the body.* The natural sugar in milk (lactose) breaks down into half glucose and half galactose.



*Sucrose is shown as its component sugars (fructose and glucose). Note: If percentages don't add up to 100, other sugars account for the difference. Sources: USDA Nutrient Database and company information.

gusta. “But the relationship with visceral fat was still there.”

It’s not as though added sugars are the only cause of a ballooning belly. Most of our expanding waistlines is due to eating too many calories, period.

But each notch on that belt could have serious consequences for your health.

“From what we understand, visceral fat may be what really drives insulin resistance and cardiometabolic disorders like type 2 diabetes and heart disease,” says Odegaard.

DIABETES & HEART DISEASE

The link between diabetes and sugars is clearest when researchers look at sugary drinks.

“We summarized the results from eight studies,” explains Harvard’s Vasanti Malik. All told, the meta-analysis pooled data on more than 300,000 people.¹⁴ The results: “For each 12 oz. serving of a sugar-sweetened beverage you drink per day, you’re getting about a 15 percent increased risk for diabetes,” says Malik. “So it really doesn’t take much to increase your risk.”

“Fewer studies have looked at cardiovascular disease,” she observes. “But we found an increased risk.”

When Malik and colleagues tracked 88,000 nurses for 24 years, those who consumed at least two sugar-sweetened beverages a day had a 35 percent higher risk of heart attack than those who drank less than one a month.¹⁵

Sugar-sweetened-beverage drinkers also have a higher risk of the metabolic syndrome, which can lead to type 2 diabetes or heart disease.^{14,16} (You have the metabolic syndrome if you have at least three of the following: elevated blood sugar, blood tri-

glycerides, blood pressure, or waist circumference, or low HDL cholesterol.)

“In our meta-analysis, people who drank two or more sugar-sweetened beverages a day had about a 20 percent increased risk of the metabolic syndrome compared to those who drank none or less than one per month,” says Malik.

And it’s not just that can of Coke. In 2010, researchers at Emory University reported that among a nationally representative sample of more than 6,000 adults, those who got more sugars from drinks *and* foods had lower HDL (“good”) cholesterol and higher triglyceride levels in their blood.¹⁷

“Elevated triglycerides, together with elevated LDL (“bad”) cholesterol, contributes to changes in our blood vessels that increase the risk of heart disease,” explains Emory’s Jean Welsh.

“The job of HDL is to carry away the triglycerides and the bad cholesterol so that they don’t cause damage.”

But none of those studies can prove cause-and-effect. “To find out if fructose is causing adverse effects, you have to give people fructose or glucose drinks for months,” says Pollock.

That’s just what the latest studies did.

Look to the Liver

In the Danish study, the people who drank a liter a day of sucrose-sweetened cola didn’t just have more visceral fat. Their liver and muscle fat more than doubled.⁹

“That’s a substantial increase,” notes Stanhope. “We had suggested that consuming high amounts of fructose-containing sugars could lead to an increase in liver fat. This is the first well-controlled study to show it.”

Sugar vs. Sugar

“No High Fructose Corn Syrup,” says the Kashi GoLean label.

Is high-fructose corn syrup worse than table sugar (sucrose), even though both are roughly half fructose and half glucose?

“Added sugars—whether they come from sucrose, high-fructose corn syrup, or fruit juice concentrates—all have equal adverse effects metabolically,” says Harvard University’s Vasanti Malik. “This obsession with high-fructose corn syrup is a little misguided.”

In January, researchers at the University of Florida reported that people who were given 24 ounces of Dr Pepper sweetened with high-fructose corn syrup had higher blood sugar levels over the next six hours than those who got sucrose-sweetened Dr Pepper.¹ But other short-term studies have found no difference.²

“If you’re getting a lot of fructose, it doesn’t matter where it’s coming from,” says the Georgia Health Sciences University’s Norman Pollock. “Even 100 percent fruit juice could be bad if you’re consuming large quantities.”

In fact, in some studies, people who drank more fruit juice had a greater risk of type 2 diabetes or weight gain.^{3,4}

“The sugars in juices are natural, but it’s still a large amount of sugar,” explains Malik. “We saw an increased risk of diabetes with juices but not whole fruit, which suggests that the fiber in fruit—which isn’t in the juice—might ameliorate the risk of diabetes.”

Her advice: “Drink water, tea, or coffee, keeping the sweeteners and creamers minimal in the coffees and teas. If you want a little flavor, try sparkling waters with a twist of lime or orange. You can cut a little lime or lemon rind or orange peel and add them yourself.”

¹ *Metabolism* (2011), DOI:10.1016/j.metabol.2011.09.013.

² *Am. J. Clin. Nutr.* 87: 1194, 2008.

³ *Diabetes Care* 31: 1311, 2008.

⁴ *JAMA* 292: 927, 2004.



Soda drinkers have a higher risk of heart disease and diabetes.



Sweet Somethings

Here's how much added sugars you'd get in a sampling of popular foods.

(The numbers don't include the naturally occurring sugars in fruit or milk ingredients.)

Most women should get no more than 100 calories (6½ teaspoons) a day from added sugars. Most men should get no more than 150 calories (9½ teaspoons). To convert teaspoons to grams of sugar, multiply by 4. To convert teaspoons to calories from sugar, multiply by 16.

Sweets (1 cookie, piece of cake, etc., unless noted)

	Calories	Added Sugar (tsp)
Kashi TLC Oatmeal Dark Chocolate Cookies (1 oz.)	130	2
Pepperidge Farm Nantucket Dark Chocolate Soft Baked Cookies (1.1 oz.)	140	2.5
Krispy Kreme Original Glazed Doughnut (1.7 oz.)	190	2.5
Nabisco Chips Ahoy! Original (3 cookies, 1.2 oz.)	160	3
Pepperidge Farm Milano Cookies (3 cookies, 1.2 oz.)	180	3
Nabisco Oreo (3 cookies, 1.2 oz.)	160	3.5
Newman's Own Organics Original Newman-O's (3 cookies, 1.3 oz.)	170	3.5
Entenmann's Ultimate Crumb Cake (½ cake, 2 oz.)	250	4
Entenmann's Rich Frosted Donut (2.1 oz.)	300	4.5
Sara Lee All Butter Pound Cake (¼ cake, 2.7 oz.)	300	5
Pepperidge Farm Golden 3-Layer Cake (½ cake, 2.5 oz.)	230	6.5
Krispy Kreme Glazed Chocolate Cake Doughnut (2.8 oz.)	300	6.5
Au Bon Pain Chocolate Mocha Whoopie Pie (3 oz.)	330	6.5
Marie Callender's Southern Pecan Pie (½ pie, 4 oz.)	490	6.5
Marie Callender's Lemon Meringue Pie (½ pie, 4.3 oz.)	320	8.5
Starbucks Marble Pound Cake (3.8 oz.)	350	8.5
Panera Chocolate Chipper cookie (3.3 oz.)	440	8.5
Entenmann's Cinnamon Danish (4 oz.)	460	8.5
Starbucks Cinnamon Chip Scone (4.2 oz.)	480	8.5
Entenmann's Jumbo Iced Honey Bun (5 oz.)	660	8.5
Au Bon Pain Red Velvet Cupcake (3.1 oz.)	400	9
Starbucks Reduced-Fat Cinnamon Swirl Coffee Cake (4 oz.)	340	10
Au Bon Pain Hazelnut Mocha Brownie (4 oz.)	450	10.5
Dunkin' Donuts Chocolate Chip Muffin	610	14
Panera Chocolate Fudge Brownie with icing (4.3 oz.)	470	14.5
Cinnabon Classic Roll	880	15
Cinnabon Caramel Pecanbon	1,080	19
IHOP CINN-A-STACK Pancakes (4) with Old Fashioned Syrup (¼ cup)	1,110	23.5
The Cheesecake Factory Black-Out Cake	1,330	38

Candy, Chocolate, etc. (1 bar, box, etc., unless noted)

Lindt Excellence 70% Cocoa Smooth Dark (4 squares, 1.4 oz.)	250	3
Planters Sweet 'N Crunchy Peanuts (1 oz.)	140	3.5
Dove Dark Chocolate Silky Smooth Promises (5 pieces, 1.4 oz.)	210	5
Hershey's Milk Chocolate Kisses (9 pieces, 1.4 oz.)	200	6
Hershey's Milk Chocolate bar (1.5 oz.)	210	6
Ghirardelli Chocolate Dark & Mint Squares (3 squares, 1.6 oz.)	210	6.5
M&M's Milk Chocolate (1.7 oz.)	230	8
Junior Mints, theater size (4 oz.)	480	22.5

Cereals

	Calories	Added Sugar (tsp)
Quaker Lower Sugar Maple & Brown Sugar Instant Oatmeal (1 pkt., 1.2 oz.)	120	1
Kellogg's Original All-Bran (½ cup, 1.1 oz.)	80	1.5
Post Honey Roasted Honey Bunches of Oats (¾ cup, 1 oz.)	120	1.5
General Mills Honey Nut Cheerios (¾ cup, 1 oz.)	110	2.5
Kellogg's Vanilla Almond Special K (¾ cup, 1 oz.)	110	2.5
Quaker Maple & Brown Sugar Instant Oatmeal (1 pkt., 1.5 oz.)	160	2.5
Kellogg's Raisin Bran (1 cup, 2.1 oz.)	190	2.5
Bear Naked Maple Pecan Granola (½ cup, 2.2 oz.)	260	2.5
Kellogg's Frosted Mini-Wheats Bite Size (21 biscuits, 1.9 oz.)	190	3
Kashi GoLean Crunch! (1 cup, 1.9 oz.)	190	3.5
Post Just Bunches! Honey Roasted Honey Bunches of Oats (⅔ cup, 2 oz.)	250	3.5

Cereal & Granola Bars (1 bar)

Kashi TLC Honey Almond Flax Chewy Granola Bar (1.2 oz.)	140	1.5
Fiber One Oats & Chocolate Chewy Bar (1.4 oz.)	140	2.5
Nature Valley Vanilla Chewy Yogurt Bar (1.2 oz.)	140	3.5
Quaker Dark Chocolatey Chewy Dipp's Granola Bar (1.1 oz.)	140	3.5
Kellogg's Special K Chocolate Caramel Protein Meal Bar (1.6 oz.)	170	4
Kashi GoLean Chocolate Malted Crisp Bar (1.9 oz.)	190	4.5
Clif Bar Maple Nut (2.4 oz.)	250	5.5

Beverages

Silk Vanilla Soymilk, refrigerated (8 fl. oz.)	100	2
Starbucks Caramel Macchiato (grande, 16 fl. oz.)	240	4*
Starbucks Vanilla Latte (grande, 16 fl. oz.)	250	4*
Silk Chocolate Soymilk, refrigerated (8 fl. oz.)	140	5
Starbucks Tazo Black Shaken Iced Tea (grande, 16 fl. oz.)	80	5.5
Ocean Spray Cranberry Juice Cocktail (8 fl. oz.)	120	5.5*
Schweppes Tonic Water (12 fl. oz.)	130	8
Gatorade Perform Lemon-Lime (20 fl. oz.)	130	9
Starbucks White Chocolate Mocha (grande, 16 fl. oz.)	470	9*
Coca-Cola (12 fl. oz.)	140	10
AriZona Extra Sweet Green Tea (23.5 fl. oz.)	260	17
McDonald's Sweet Tea (large, 32 fl. oz.)	280	17.5
Starbucks Java Chip Frappuccino (venti, 24 fl. oz.)	560	18.5*

Dairy

Häagen-Dazs Chocolate Ice Cream (3.7 oz.)	260	3*
Dannon All Natural Vanilla Yogurt (6 oz.)	150	4*
Häagen-Dazs Zesty Lemon Sorbet (4 oz.)	120	7
Cold Stone Creamery Sweet Cream Ice Cream (Love it, 8 oz.)	530	8.5*
TCBY Golden Vanilla Yogurt (large, 13.4 fl. oz.)	400	9.5*
Pinkberry Original Frozen Yogurt (large, 13 oz.)	370	14.5*
Cold Stone Creamery Very Vanilla Shake (Gotta Have It, 24 fl. oz.)	1,550	32.5*

Other

Wholesome Sweeteners Organic Raw Blue Agave (1 Tbs.)	60	4
Honey (1 Tbs.)	60	4.5
Betty Crocker Rich & Creamy Chocolate Frosting (2 Tbs.)	130	4.5
Nutella (2 Tbs.)	200	5*

* Estimate. Note: added sugars are rounded to the nearest half teaspoon.

Source: Company information.

The liver may also explain why fructose leads to higher levels of triglycerides.

“Fructose gets metabolized by the liver very quickly,” says Welsh. “When there is more sugar than the liver can process, it converts the sugar to fat. Some of the fat goes into the bloodstream, and that’s why we get elevated triglycerides.”

What’s more, in Stanhope’s study, the fructose drinkers burned less fat (and more carbohydrate).¹⁸ “The body doesn’t make fat and burn fat at the same time,” she explains.

“In our study, fat oxidation got blocked every time people drank the fructose drink because that fructose is getting turned into fat.”

Also troubling: “We saw an increase in small, dense LDL when people drank fructose,” says Stanhope. Those are cholesterol-carrying particles that are more damaging to arteries than fluffy, large LDL.

And Stanhope noticed something else. “LDL increased as much in the high-fructose corn syrup group as in the pure fructose group. That was surprising because the high-fructose corn syrup group got less fructose.”¹⁹

“Do fructose and glucose together exacerbate the problems?” she asks. “We can’t say at this point. But it’s possible that because fructose is activating the pathways by which sugar gets turned into fat, more of the glucose is getting turned into fat, too.”

As if that weren’t enough, fructose may also lead to gout, a painful inflammation due to a buildup of uric acid in joints.

“Fructose has been shown to increase uric acid,” says Malik. “And gout has also been associated with sugar-sweetened beverages.”²⁰

The problem isn’t just that fructose boosts several risk factors for diabetes and cardiovascular disease.

“It’s that those risk factors—abdominal obesity, high triglycerides, and insulin resistance—all exacerbate each other,” says Stanhope. “You get a vicious circle going.”

A case in point: “Some researchers argue that if you increase visceral fat, it sends out more inflammatory factors, which go back to the liver, where they promote more insulin resistance,” she explains.

Another example: “Fructose-containing sugars increase fat-making in the liver, which causes insulin resistance,” says Stanhope. “But insulin resistance also increases fat-making in the liver, so all the processes get revved up.”



Healthier? A slice of Starbucks Reduced-Fat Cinnamon Swirl Coffee Cake has 10 teaspoons of added sugars.

“That’s why the metabolic syndrome is so difficult to treat with one medication,” she adds. “Everything is feeding on everything else.”

EMPTY CALORIES

How much is too much added sugar? In 2009, the American Heart Association suggested a limit: no more than 100 calories a day for women and no more than 150 calories a day for men.²¹

The heart association wasn’t just concerned about “the worldwide pandemic of obesity and cardiovascular disease,” but also about the healthy foods that added sugar replaces.

“To follow recommendations to lower the risk of heart disease, diabetes, osteoporosis, hypertension, you name it, you have to use most of your calories for fruits, vegetables, grains, milk, meat, fish, poultry, and oils,” explains Susan Krebs-Smith of the National Cancer Institute. “Very few calories are left over for empty calories.”

In her recent analysis of a nationally representative survey of more than 16,000 people, roughly 78 percent of women and 67 percent of men ate too much added sugar.²²

“For example, for

someone who eats 2,000 calories a day, ‘too much’ was more than 130 calories’ worth of added sugar,” she says.

Not surprisingly, more than 90 percent of the people also came up short on green and orange vegetables, beans, dairy, and whole grains. “Most calories need to count for something nutritionally,” adds Krebs-Smith.

But growing evidence suggests that added sugars aren’t just empty calories. They’re harmful calories.

“We saw huge metabolic differences between people who consumed fructose instead of glucose, despite the same weight gain,” says Stanhope.

“Many people believe that excess calories are the problem, and it doesn’t matter where they come from. But now we know that that’s not true.” 🍌

¹ *JAMA* 292: 927, 2004.

² *Am. J. Clin. Nutr.* 87: 1662, 2008.

³ *Am. J. Clin. Nutr.* 89: 438, 2009.

⁴ *Int. J. Obes.* 24: 794, 2000.

⁵ *Am. J. Clin. Nutr.* 51: 963, 1990.

⁶ *Am. J. Clin. Nutr.* 76: 721, 2002.

⁷ *Br. J. Nutr.* 97: 193, 2002.

⁸ *J. Clin. Invest.* 119: 1322, 2009.

⁹ *Am. J. Clin. Nutr.* 95: 283, 2012.

¹⁰ cdc.gov/nchs/data/databriefs/db71.htm.

¹¹ *Am. J. Clin. Nutr.* 94: 479, 2011.

¹² *Obesity* 20: 689, 2011.

¹³ *J. Nutr.* 142: 251, 2012.

¹⁴ *Diabetes Care* 33: 2477, 2010.

¹⁵ *Am. J. Clin. Nutr.* 89: 1037, 2009.

¹⁶ *Circulation* 116: 480, 2007.

¹⁷ *JAMA* 303: 1490, 2010.

¹⁸ *Eur. J. Clin. Nutr.* 66: 201, 2012.

¹⁹ *J. Clin. Endocrinol. Metab.* 96: E1596, 2011.

²⁰ *BMJ* 336: 309, 2008.

²¹ *Circulation* 120: 1011, 2009.

²² *J. Nutr.* 140: 1832, 2010.

The Bottom Line

- Shoot for 100 calories (6½ teaspoons) a day of added sugars if you’re a woman and 150 calories (9½ teaspoons) a day if you’re a man. Even less may be better for your heart. (See “What Should I Eat?” Oct. 2009, p. 1.)
- Don’t drink sugar-sweetened beverages. Limit fruit juices to no more than 1 cup a day.
- Limit all added sugars, including high-fructose corn syrup, cane or beet sugar, evaporated cane juice, brown rice syrup, agave syrup, and honey.
- Don’t worry about the naturally occurring sugar in fruit, milk, and plain yogurt.
- If a food has little or no milk or fruit (which contain natural sugars), the “Sugars” number on the package’s Nutrition Facts panel will tell you how many grams of added sugars are in each serving. Multiply the grams by 4 to get calories from sugar. Divide the grams by 4 to get teaspoons of sugar.



Step to It

Watching TV? If you stand up and step in place during the commercials, you may burn as many calories as you would if you took a walk.

Researchers had 23 men and women watch TV for

one hour without moving and for a second hour while stepping in place during the commercials. They stepped at a moderate pace (100 to 120 steps per minute), lifting each leg six to eight inches off the ground.

During the hour that they stepped during the ads, the participants were active for 21 minutes and took roughly 2,100 steps. They also burned about 150 calories, nearly double the 80 calories they burned during the hour they sat still. The average person burns 150 calories walking for a half hour at a brisk pace (3 mph).

What to do: Get up off the couch (or out of your desk chair) and move, even if it's only for a few minutes at a time. A typical half-hour TV show has eight to 12 minutes of commercials, and American adults spend three to five hours a day watching TV. If they stood up and stepped in place during the commercials, they could burn an extra 200 to 350 calories a day.

DOI:10.1249/MSS.0b013e31822d797e

Triglyceride Trouble

For years, researchers have known that high triglyceride levels are more closely linked to a higher risk of heart disease in women than in men. Now a new study suggests that high triglycerides may also raise a woman's risk of the most common type of stroke.

In the study of roughly 2,000 postmenopausal women, those with triglyceride levels over 192 mg/dL had a 56 percent higher risk of having an ischemic stroke over the next eight years than those who had triglyceride levels below 104 mg/dL. (Ischemic strokes are caused by a blocked artery rather than a hemorrhage.)

What to do: If your triglyceride levels are high (150 or above), try losing excess weight and cutting back on carbohydrates, especially sugars.

DOI:10.1161/STROKEAHA.111.641324

More Magnesium

More magnesium may mean a lower risk of stroke.

Researchers looked at seven studies that followed a total of roughly 240,000 people for eight to 15 years. The risk of an ischemic stroke was 9 percent lower for each 100 milligrams of magnesium the participants reported eating per day.

What to do: It's worth eating magnesium-rich foods even though it's too early to know if magnesium prevents strokes (or diabetes, as other evidence suggests).

Among the best sources: leafy greens, beans, seafood, nuts, tofu, yogurt, and whole grains. Most daily multivitamin-and-mineral supplements have only about 50 to 100 milligrams of magnesium. The Recommended Dietary Allowance is 320 mg for women—and 420 mg for men—over 30.

Am. J. Clin. Nutr. 95: 362, 2012

Dairy & Prostate Cancer

It looks like men who have been diagnosed with localized prostate cancer needn't worry that dairy foods may make their cancer spread, as some studies had suggested.

For eight years, researchers tracked nearly 4,000 men who had been diagnosed with localized prostate cancer. Those who reported eating the most milk, cheese, cream, or other dairy foods were no more likely to die or be diagnosed with metastatic cancer than those who ate the least dairy.

The only link: men who drank the most whole milk had an increased risk that their cancer would spread, while those who consumed the most low-fat dairy had a reduced risk. However, it's possible that something else about people who drink whole milk or eat low-fat dairy explains their risk.

What to do: If you've been diagnosed with localized prostate cancer, you needn't avoid dairy foods. But it's worth drinking low-fat or fat-free instead of whole milk to protect your heart, whether or not it affects your risk of dying of prostate cancer.

DOI:10.1158/1055-9965.EPI-11-1004

Breast Cancer & Carrots

Eating carotenoid-rich dark green or deep orange fruits and vegetables may lower the risk of *some* breast cancers, says a new study.

Researchers pooled data on 1,028,438 women who participated in 18 studies for up to 26 years. Those who consumed more alpha-carotene, beta-carotene, or lutein had about a 13 percent lower risk of breast tumors that don't respond to estrogen, which are called estrogen receptor-*negative* cancers. Carotenoids weren't linked to the more common estrogen receptor-*positive* tumors.

"We are excited about the findings because there are so few ways to prevent or treat estrogen receptor-negative breast cancer, and it tends to have a poor survival," says senior author Stephanie Smith-Warner of the Harvard School of Public Health.

What to do: Eat spinach, broccoli, cantaloupe, carrots, apricots, or other dark green or orange fruits and vegetables that you enjoy. Though these kinds of studies can't prove that carotenoids help prevent breast cancer, eating fruits and vegetables may help lower your blood pressure, weight, and risk of heart disease. 🥕

DOI:10.3945/ajcn.111.014415



Sleep on It

When counting sheep isn't enough

BY DAVID SCHARDT

Elephants need only three to four hours of sleep a night, while mice sleep 14 hours. Humans are somewhere in the middle. But for many of us, sleep is never long enough or good enough.

About 30 percent of adults complain of problems sleeping, according to the National Institutes of Health. And the consequences go far beyond feeling tired the next day. People who average no more than six hours of sleep a night may have a higher risk of diabetes and heart disease, and may be more likely to eat more...and gain more weight. Here's what the latest research shows.

DREAM ON

Getting a good night's sleep isn't easy.

"Women tend to sleep longer and sounder than men, although women complain more than men about their sleep," says sleep anthropologist Kristen Knutson of the University of Chicago.

"We don't know if that's because women are more willing to speak up, or if we're not measuring what's making women feel that their sleep is not refreshing."

In one study, "women slept about 7 hours 50 minutes while men slept 7 hours 30 minutes," says Marie-Pierre St-Onge, a sleep and obesity researcher at Columbia University in New York.¹

Women also tend to get more slow-wave sleep, the deep phase of sleep that's most restful and restorative.

Slow-wave sleep shrinks for both sexes as they age, starting for some in their 30s, says Jeanne Duffy, a neuroscientist at Brigham and Women's Hospital and Harvard Medical School in Boston.

"If you take a group of 60-year-olds, the women will have more slow-wave sleep than the men, though still less than younger women," she notes. "That may help explain why, as people get older, they're much more likely to complain about their sleep."

Typically, older adults can fall asleep and sleep for the first several hours of the night, says Duffy. But toward the later part of the night, they wake up and often can't get back to sleep or, if they do, can't remain asleep.

Researchers find that the number of very brief awakenings during the night—

each typically lasts between five and 20 seconds—increases with age.

"Typical 25-year-olds may have only three or four of them," says Duffy, "while healthy 60-year-olds may have 25 or 30 throughout the night."

Despite all the bumps in the road to slumber, healthy sleep-deprived older people perform better the next day than



Too little sleep may cause insulin resistance, which can raise the risk of diabetes and heart disease.

sleep-deprived younger people, she notes.

"We're not sure if this means that older adults need less sleep than young adults. But even with less sleep, the older adults do better on many kinds of mental performance tests in the laboratory."

Still, the consequences of not getting enough restful sleep may be more serious than struggling to function the next day.

Diabetes & Heart Disease

"People who habitually sleep six or fewer hours a night are at increased risk of developing diabetes," says Knutson.

In a meta-analysis that pooled the results of 13 studies on more than 107,000

men and women who were followed for 4 to 32 years, those who reported sleeping six hours a night or less were 28 percent more likely to later be diagnosed with type 2 diabetes than those who slept seven or eight hours. The disease was 57 percent more likely among those who had difficulty falling asleep and 84 percent more likely among those who had trouble staying asleep.²

It's not just diabetes.

In a meta-analysis of 24 studies that followed more than 474,000 men and women for 7 to 25 years, those who reported sleeping less than six hours a night had a 48 percent greater risk of coronary heart disease than those who slept six to eight hours.³

Studies have also linked shorter sleep to high blood pressure in men and women under 60.⁴

But studies that find a higher risk of hypertension, heart disease, or diabetes in short sleepers can't prove cause and effect.

"Nonetheless, the associations are fairly consistent, strongly suggesting that poor sleep can lead to serious health problems," notes Knutson.

Insulin resistance could be the link. When researchers restrict young and middle-aged adults to about five hours of sleep a night for one to two weeks, they become more insulin resistant.^{5,6}

If your cells are insulin resistant, they don't respond well to the hormone. And that can make your pancreas pump out more and more insulin. When it can't keep up, blood sugar rises and you have diabetes. Insulin resistance also increases the risk of heart disease.

"If lack of sleep leads to the development of insulin resistance, that might explain why it could raise the risk of diabetes and heart disease," says Knutson.

Weight Gain

Do people who sleep less gain more weight?

Among the 68,000 women in the Nurses' Health Study, those who reported sleeping five hours or less a night gained

>>>>>

roughly 2½ more pounds over 16 years than those who reported sleeping seven hours. Those who said they slept six hours a night gained 1½ more pounds.⁷

And in a study that tracked the same nurses and some 70,000 other health professionals, those who slept less than six hours a night gained the most weight over 12 to 20 years.⁸

Those studies can't prove cause and effect either. Something else about short sleepers could explain their weight gain. But sleep-lab studies offer more evidence that sleeping less may lead to weighing more.

"There's substantial evidence from experiments in people that sleep deprivation leads to an increase in food intake," says Columbia University's St-Onge.

In her recent study, 30 people in their 30s and 40s ate an average of 300 more calories after being limited to about four hours of sleep a night for four nights than they did when they could sleep as long as they wanted to for four nights.¹

And in an earlier study at the University of Chicago, men and women who weren't allowed to sleep for more than five hours a night for two weeks ate 220 more calories a day from snacks, particularly at night, than they did when they could sleep more than seven hours a night.⁹

Why might sleeping less make people eat more? "Studies find that depriving people of sleep raises their blood levels of ghrelin, a hormone that increases appetite, and lowers their blood levels of leptin, a hormone that inhibits appetite," says Knutson.¹⁰

What can you do to improve your sleep? Here's the latest on some remedies.

SLEEP HELPERS?

Exercise

"There is a growing consensus that regular exercise can improve sleep," says Matthew Buman, a professor of exercise and wellness at Arizona State University.

In the largest study to date, Stanford University's Abby King and colleagues recruited 66 people aged 55 or older who exercised less than an hour a week and complained about their sleep.

"We chose people with typical mild to moderate sleep complaints who would love to sleep better but who didn't have a sleep disorder like chronic insomnia," says Buman, who helped analyze the data.

Thirty-six of the volunteers were randomly assigned to attend two one-hour sessions a week of aerobic exercises, stretching, muscle strengthening, and

balance exercises. They were also instructed to do 30 minutes of aerobic exercise at home at least three days a week.

The 30 volunteers in the control group were offered weekly classes on nutrition and other topics, but weren't told to exercise.

After 12 months, the exercisers reported feeling more rested in the morning than the control group.¹¹

"What's unique about this study is that it was the first to actually periodically measure the brain waves during sleep of people who were engaged in moderate-intensity exercise during the day," Buman notes.

The brain waves showed that the exercisers fell into a stable sleep four minutes sooner and awoke fewer times during the first third of the night than the control group. (Both groups slept about the same amount of time—six hours a night.)



Want to sleep better? Moderate-intensity exercise may help.

The results were "modest and less dramatic than we originally expected," conceded the researchers, who were also disappointed that exercise didn't increase the time the volunteers spent in slow-wave sleep.

"A few short studies in younger adults have shown that on days they exercise they're likely to have more slow-wave sleep that night," Buman notes.

Exercise is most likely to help people whose sleep is the worst and who have been exercising the least, adds Buman.¹²

Valerian

"Promotes restful sleeping," says GNC. Helps you "get the tranquil rest you deserve," promises Nature's Bounty.

"Valerian does have sedative properties in animals," says sleep researcher Diana Taibi of the University of Washington. "But

when you look at the studies in people, the effect on sleep, if any, is very small."

Most research on valerian "is poor quality," Taibi notes. One problem: "Although valerian is foul smelling, many of the studies didn't conceal the odor, so people knew if they were getting it," she says. "And since sleep disturbance is largely a psychologically conditioned problem, if someone takes something expecting it to help them sleep, it probably will."

In Taibi's trial, she and her colleagues gave 16 women in their 60s and 70s who suffered from insomnia either 300 milligrams of a valerian extract or a placebo 30 minutes before bedtime every night for two weeks. (The researchers stored the placebo next to the valerian, so it smelled just like the herb.) After a two-week break, the women switched to the other pills.

"When they were taking valerian, the women didn't fall asleep any faster, sleep any longer, or report any better sleep quality than when they were taking the placebo," says Taibi. In fact, the women were awake for an average of 11 minutes more the nights they were taking valerian.¹³

(The valerian used in the study was made by Pharmavite, which claims that its NatureMade brand of valerian is "supported by clinical trials.")

"Our results are consistent with most of the 29 previous studies in people with insomnia," says Taibi. What's more, she adds, none of the most recent studies, which were also the most carefully controlled, found any significant effect of valerian on sleep.¹⁴

However, Taibi notes, none of the studies looked at valerian tinctures, which are solutions of valerian extracts in alcohol. "The effects of tinctures could be entirely different," she says. "But since it has never been tested, we don't know."

Melatonin

"Provides relief for occasional sleeplessness," says Natrol about its melatonin pills. "For restful & peaceful sleep," claims "instant acting" Sleep Soundly liquid melatonin.

"Melatonin is a hormone produced in the brain at night that precedes the onset of sleep but doesn't necessarily cause sleep," says Harvard's Jeanne Duffy.

In 2004, the U.S. Agency for Healthcare Research & Quality (AHRQ) concluded that melatonin isn't effective in treating most "primary" or "secondary" sleep disorders. ("Primary" means that doctors can find no cause of the insomnia. "Secondary" disorders are caused by other conditions—depression or sleep apnea, for example.)

But the AHRQ found that travelers with

jet lag or night workers who took melatonin (usually 5 or 6 milligrams) slept an average of 18 minutes more than similar people who took a placebo. The hormone didn't help them fall asleep any faster or sleep any better, though.¹⁵

The AHRQ also found that melatonin might help with an uncommon condition called "delayed sleep phase syndrome," in which patients typically fall asleep hours after midnight and have difficulty waking up in the morning because their "internal clock" is off.

In two studies, melatonin helped patients with delayed sleep phase syndrome fall asleep an average of about 40 minutes earlier than usual.^{16,17}

"Melatonin can help pull their sleep timing back somewhat so they can go to sleep earlier and get up earlier," says Taibi.

Other "Aids"

■ **Kava.** "Although scientific studies provide some evidence that kava may be beneficial for the management of anxiety," notes the National Institutes of Health's National Center for Complementary and Alternative Medicine, it "is not a proven therapy for other uses."

What's more, the World Health Organization has reported more than 60 cases of possible liver toxicity in kava users. The WHO warns that kava shouldn't be used with drugs that prevent blood clots, psychotic episodes, or anxiety.

■ **Yoga.** "Yoga might help with sleep by promoting relaxation," says Taibi. However, evidence from controlled studies is elusive. In the only trial in the U.S. and Canada in adults, women reported no better quality of sleep after participating in a low-intensity yoga program for four months.¹⁸

■ **Warm baths.** "Body temperature typically is high until right before you go to bed," notes Duffy. "Then there's a rapid decline." The lowest temperature is reached just before morning.

"The drop in body temperature is one of the physiological triggers for sleep," says Taibi. When you take a warm bath, the dissipation of heat afterwards can set off that trigger, she explains.

In two studies, when 23 women in their 60s and 70s with insomnia took a hot bath (105° F) 90 minutes before bedtime, they awoke less during the night than when they took a lukewarm bath (100° F) or no bath at all. The women also reported that their sleep was deeper and more restful.^{19,20}

SLEEP HURTERS?

Caffeine

"People don't realize how much caffeine can interfere with sleep," says Thomas Roth, chief of sleep medicine at Henry Ford Hospital in Detroit. "They think that if the caffeine is out of their system, they're okay. But they may not be."

Caffeine affects sleep by interfering with adenosine, a compound found in every cell in the body. "In the brain, it pushes you to sleep," Roth explains. "If you inject adenosine into the brain of an



In two small studies, a warm bath 90 minutes before bedtime helped people sleep deeper.

animal, it will go to sleep."

While you're awake during the day, your brain is building up its levels of adenosine, says Roth. The adenosine is dissipated while you sleep, unless you don't sleep long enough to get rid of it all. That's where caffeine comes in.

Caffeine binds to adenosine receptors in the brain. That prevents the adenosine from entering nerve cells, so it can't make you drowsy.

While most people know that caffeine can disrupt sleep if it's consumed in the evening, "what isn't widely known is that caffeine taken earlier in the day can disrupt sleep later that night," says Roth.

When nine healthy young men who regularly drank one or two caffeinated beverages a day consumed 200 milligrams of caffeine at 7 a.m., their sleep

was affected 16 hours later when they went to bed at 11 p.m., even though they had no more caffeine during the rest of the day and the level in their blood was approaching zero. (A 16 oz. grande brewed coffee at Starbucks has 330 mg of caffeine.)

It took them 11 more minutes to fall into deep sleep, and their total sleep time averaged 10 minutes less than on a night when they consumed a placebo instead of caffeine in the morning.²¹

"Ten minutes isn't a big deal for a single day," says Roth. "But it is a big deal as a nightly issue."

Alcohol

"If you occasionally drink alcohol just before bedtime, it will put you to sleep more quickly for the first couple of hours and increase your slow-wave sleep, but then it will spoil your sleep during the latter part of the night," says Roth.

"After about two hours—the time depends on how much you've had—your body starts to clear the alcohol from your system," he explains. "You begin getting fragmented sleep, which is waking up briefly and repeatedly, and then disrupted sleep, which is awakening from dreams and returning to sleep with difficulty."

If you *regularly* drink alcohol to fall asleep, Roth adds, its sleep-inducing effect eventually wears off, but you'll still have fragmented and disrupted sleep.

Women and older people are especially vulnerable because the same dose produces higher levels of alcohol in their blood and their brain than it does in men and younger people. Another hazard: older people who drink before going to bed may be unsteady if they have to get up during the night to go to the bathroom. 🍷

The Bottom Line

- Sleeping six hours a night or less may raise the risk of diabetes, heart disease, obesity, and insulin resistance.
- Aerobic exercise may improve sleep.
- Melatonin may help with jet lag, night work, or delayed sleep phase syndrome.
- Valerian doesn't help most people sleep longer or better.
- Caffeine and alcohol may disturb sleep.

¹ *Am. J. Clin. Nutr.* 94: 410, 2011.

² *Diabetes Care* 33: 414, 2010.

³ *Eur. Heart J.* 32: 1484, 2011.

⁴ *Blood Press.* 21: 45, 2012.

⁵ *J. Clin. Endocrinol. Metab.* 94: 3242, 2009.

⁶ *Diabetes* 59: 2126, 2010.

⁷ *Am. J. Epidemiol.* 164: 947, 2006.

⁸ *N. Engl. J. Med.* 364: 2392, 2011.

⁹ *Am. J. Clin. Nutr.* 89: 126, 2009.

¹⁰ *Ann. Intern. Med.* 153: 435, 2010.

¹¹ *J. Gerontol. A Biol. Sci. Med. Sci.* 63: 997, 2008.

¹² *Health Psychol.* 30: 579, 2011.

¹³ *Sleep Med.* 10: 319, 2009.

¹⁴ *Sleep Med. Rev.* 11: 209, 2007.

¹⁵ AHRQ Publication No. 05-E002-2, 2004.

¹⁶ *Lancet* 337: 1121, 1991.

¹⁷ *Psychosom. Med.* 63: 40, 2001.

¹⁸ *Menopause* 14: 535, 2007.

¹⁹ *J. Geriatr. Psychiatry Neurol.* 9: 83, 1996.

²⁰ *Sleep* 22: 891, 1999.

²¹ *Brain Res.* 675: 67, 1995.



A SALAD A DAY...

BY KATE SHERWOOD

It's a lot easier to eat a plant-rich diet if you have a stable of lick-the-bowl-clean salad recipes. Here are three more to add to your repertoire. Each recipe makes four hearty side salads or a quick, scrumptious lunch for two. 🍴

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

Chopped Salad

Total Time: 10 minutes



- 3 Tbs. fresh lime juice, more to taste (about 2 limes)
- ¼ cup minced red onion
- ¼ tsp. kosher salt
- 2 Tbs. mayonnaise
- 1 avocado, chopped
- 1 15 oz. can no-salt-added kidney beans, drained and rinsed
- 2 roasted red peppers, chopped
- Freshly ground black pepper
- 6 cups chopped romaine

We roasted the red peppers under the broiler until lightly charred, 10-12 minutes, then chopped them with the skin on. You can also use raw red bell peppers (we'd avoid jarred roasted peppers). Add a pound of grilled chicken or shrimp, and dinner for four is ready.

In a large bowl, whisk together the lime juice, red onion, salt, and mayonnaise. Add the avocado, beans, and red peppers. Season generously with black pepper. Toss gently to combine. • Arrange the romaine on four plates and spoon the dressed avocado, beans, and red peppers on top. • Serves 4 as a side salad.

Per Serving (2½ cups): Calories 250; Total Fat 13 g; Sat Fat 2 g; Protein 9 g; Carbs 26 g; Fiber 14 g; Cholesterol 5 mg; Sodium 190 mg

Shredded Salad

Total Time: 15 minutes



- 2 Tbs. balsamic vinegar
- 2 Tbs. peanut butter
- 1 Tbs. reduced-sodium soy sauce
- 1 small clove garlic, minced
- 1 tsp. sugar
- 1 cup basil leaves
- 1 cup mint leaves
- 1 cup cilantro leaves
- 4 cups thinly sliced napa cabbage
- 1 cup grated carrot
- ¼ cup roasted peanuts

No, that's not iceberg lettuce. It's napa cabbage, and it's part of what makes this salad pop with flavor and crunch. To turn it into a meal for four, double the dressing and toss in a pound of shredded cooked chicken or sautéed or baked tofu.

In a small bowl, whisk together the vinegar, peanut butter, soy sauce, garlic, and sugar. • Chop the basil, mint, and cilantro leaves and toss with the cabbage and carrot. • Toss the salad with the dressing and garnish with the peanuts. • Serves 4 as a side salad.

Per Serving (2 cups): Calories 150; Total Fat 9 g; Sat Fat 1.5 g; Protein 6 g; Carbs 15 g; Fiber 6 g; Cholesterol 0 mg; Sodium 180 mg

Pan-Roasted Tomato & Chickpea Salad

Total Time: 15 minutes



- 1 pint cherry tomatoes, halved
- 3 Tbs. extra-virgin olive oil
- 2 cloves garlic, minced
- ¼ cup orange juice
- 1 Tbs. red wine vinegar
- ½ tsp. kosher salt
- Freshly ground black pepper
- 6 cups baby arugula
- 2 cups basil leaves
- 1 15 oz. can no-salt-added chickpeas, drained

For dinner for four, serve this savory and slightly sweet salad with a roasted four-pound chicken and some crusty bread.

In a large non-stick pan, sauté the tomatoes, cut side down, in 1 Tbs. of the oil until well browned, 3-5 minutes. Remove from the pan and reserve. • Add the remaining oil and sauté the garlic for 30 seconds. Stir in the juice and simmer to reduce by half, about 2 minutes. Remove from the heat and stir in the vinegar, salt, and plenty of black pepper. • Toss the arugula and basil leaves with the dressing and top with the tomatoes and chickpeas. • Serves 4 as a side salad.

Per Serving (2 cups): Calories 230; Total Fat 12 g; Sat Fat 1.5 g; Protein 7 g; Carbs 25 g; Fiber 5 g; Cholesterol 0 mg; Sodium 270 mg

Doing Dairy Right

Healthy and udderly delicious

BY JAYNE HURLEY & BONNIE LIEBMAN

There's more to the dairy aisle than milk, cheddar and Swiss cheese, and yogurt. Softer cheeses (from feta to goat and from cottage to ricotta), sour cream, crème fraîche, and quark also take up real estate in the supermarket (and in our fridges). Your goal: to keep them from setting up shop in your arteries.

Here's how to find the best contenders in each category, while keeping both your blood vessels and your taste buds in mind.

The information for this article was compiled by Paige Einstein.

hard to find. Most stores only sell whole (4 to 5 grams) and part-skim, which isn't much better (3 to 4 grams). That leaves fat-free (0 grams), which can be bland. But in a lasagna, who can tell?

Look for: No more than 2 grams sat fat and 80 mg sodium in ¼ cup.

Cream cheese. Cream cheese is more like cream than cheese. A two-tablespoon serving of most brands has just 1 or 2 grams of protein and less than 5 percent of a day's calcium. Philadelphia Fat Free

Cream Cheese has more protein (4 grams), more calcium (15 percent of a day's worth), and fewer calories (30). If its less-creamy texture doesn't work for you, try one of our Best Bites. Most have 3 grams of saturated fat, roughly half what you'd get in a full-fat cream cheese.

We excluded cream cheeses with fruit, like Philadelphia and Weight Watchers Strawberry spreads. Most contain more added sugar than fruit. Worse yet are Philadelphia's Indulgence cream cheeses. The added chocolate and sugar means an extra 2 to 3 teaspoons of sugar in every two-tablespoon serving.

Dropping dairy? Don't switch to Tofutti Better Than Cream Cheese. With 2 grams of trans fat from partially hydrogenated oil, it's clearly Worse Than Cream Cheese. Instead, look for the company's "non-hydrogenated" version of Better Than Cream Cheese.

Look for: No added sugars or trans fat and no more than 3 grams sat fat and 120 mg sodium in 2 Tbs.

Sour cream. Look for light or low-fat. Most knock full-fat sour cream's 3 grams of sat fat down to 1 or 1½ grams per two-tablespoon serving. Yet they still taste both sour and creamy. If you can't find them, try Breakstone's Reduced Fat or Daisy Brand Light, with 2 grams of sat fat. Tastewise, they all beat fat-free sour creams.

Breakstone's and Knudsen have rolled out Zesty Blends full-fat sour creams in flavors like Chipotle, Jalapeño, and Roasted Garlic & Herb. Santa Barbara Bay Tater Toppers are similar. As usual, to the food industry, "flavors" means "more salt." Don't bother.

Look for: No trans fat and no more than 2 grams sat fat and 50 mg sodium in 2 Tbs.

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Cottage cheese. "Excellent source of protein," boast many cottage cheese containers. Got that right. Cottage cheese is one of the few foods outside of the meat-poultry-seafood aisle that supply 12 to 14 grams of protein in 100 calories' worth of food. That's a bargain. But you can't blindly reach for any container.

A half-cup serving of our Best Bites has no more than 1½ grams of saturated fat and 300 milligrams of sodium and contains no added sugar. The best-tasting: Breakstone's 2% Fat Lowfat 30% Less Sodium Small Curd. (Unfortunately, the brand is sold only in the East and South.)

To dodge the empty-calorie added sugar in cottage cheeses that contain fruit, toss in your own unsweetened berries, bananas, or peaches. When companies add fruit, it displaces some protein. You may not have to worry about lost calcium, though, because many companies add calcium phosphate to their cottage cheeses.

And ignore "digestive health" fiber claims. They really should say "may cause gas." That's about all you can expect from the added inulin that boosts the fiber to 3 to 5 grams per serving in Breakstone's LiveActive, Breakstone's Cottage Doubles with Fiber, Fiber One Lowfat with Fiber, and Friendship 2% Fat Digestive Health Small Curd.

Look for: No added sugars and no more than 1½ grams sat fat and 300 mg sodium in ½ cup.

Ricotta cheese. Ricotta isn't just for lasagna and ravioli. You can use it in cheesecake, pancakes, and dips. You can even turn it into a quick, creamy dessert by adding vanilla, Splenda, and toasted sliced almonds and scooping it onto a bed of berries.

The catch is that low-fat or light ricottas (with just 1 or 2 grams of saturated fat per quarter cup) are



Breakstone's 2% Fat Lowfat 30% Less Sodium Cottage Cheese. Tastes as good as the company's regular version.



Sorrento Fat Free Ricotta. Most fat-frees can stand in for whole or part-skim without missing a beat.



Weight Watchers Whipped Cream Cheese Spread. Rich and creamy. The only large brand low enough in sodium for a Best Bite.



Organic Valley Lowfat Sour Cream. Nice sour cream tang, and plenty creamy without added gums.



Vermont Creamery Quark.
Use it instead of fatty sour cream, mascarpone, or crème fraîche.



Boursin White Cheddar & Sage. Delicious, and more calcium and protein than other cream-cheese-based spreads.



Président Feta. Less fat, less sodium, and *more* taste than most other regular fetas. Well done!



Soignon Chèvre à Tartiner Spreadable Goat Cheese.
Tangy, velvety bliss for your crackers.

Quark, Crème fraîche, Mascarpone. Mascarpone is a double or triple cream cheese. It's the main ingredient in tiramisu. Crème fraîche is a thickened cream with a slightly tangy flavor. Both are often spooned over fresh fruit or other desserts...and two tablespoons will cost you at least a third of a day's worth of sat fat.

Our advice: try quark instead. The soft, unripened cheese is always either low-fat or fat-free. It's tart like sour cream and yogurt but with a thicker texture. You can use it on baked potatoes or in cheesecakes, dips, or salads. Vermont Creamery makes a delicious version, along with a Fromage Blanc 0% Fat that's similar but really tart.

Look for: *No more than 1 gram sat fat and 50 mg sodium in 2 Tbs.*

Spreadable cheese. Many—like Alouette, Boursin, and Rondelé—are mostly cream cheese, so they're not rich in protein or calcium. Président and Trader Joe's Light Bries have less sat fat (2½ grams) and more protein (7 grams) and calcium (15 percent of a day's worth) than many spreadables, but both are a tad high in sodium (230 mg).

So are the new The Laughing Cow Light wedges—Mozzarella, Sun-Dried Tomato & Basil; Queso Fresco & Chipotle; and Blue

Cheese—which average 220 mg of sodium (like the company's other wedges). With only 35 calories, each ¾ oz. wedge would make a handy snack if only that cow would stop laughing and start trimming the salt.

Look for: *No more than 3 grams sat fat and 170 mg sodium in 2 Tbs.*

Feta. Some brands hit 400 mg of sodium per ounce. Athenos Reduced Fat and Boar's Head trim the sat fat, but barely touch the sodium. Président and Trader Joe's Fat Free fetas trim both and might taste fine in some dishes. But straight out of the package, they're a touch dry and chewy. Solution: try our favorite Best Bite: Président's regular feta.

Look for: *No more than 3 grams sat fat and 300 mg sodium in 1 oz.*

Goat cheese. Soft goat cheese isn't rich in protein or calcium, but it's not loaded with salt either. Several Best Bites—like Soignon Chèvre à Tartiner Spreadable, Chavrie, Trader Joe's Creamy, and Vermont Creamery Creamy—are worthy of your whole-grain crackers.

Look for: *No added sugars and no more than 3 grams sat fat and 170 mg sodium in 1 oz.* 🍌

Praise Cheeses

For our Best Bite (✓✓) criteria, check the "Look for" paragraph at the end of each section in the text. (Because of rounding inconsistencies, we gave Best Bites to some cheeses that look like they have ½ gram too much saturated fat.) Numbers in **green** are for nutrients you want to *maximize*. Cheeses are ranked from least to most sat fat, then sodium, then calories, then most to least calcium, then protein.

COTTAGE CHEESE (½ cup)	Calories	Sat Fat (g)	Sodium (mg)	Protein (g)	Calcium (%DV)
Breakstone's Fat Free Small Curd	80	0	400	12	20
Friendship 0% Fat Small Curd	80	0	420	13	10
Knudsen Free Nonfat	80	0	430	13	15
Light n' Lively Free Fat Free	80	0	460	12	20
✓✓ Nancy's Plain Lowfat Cultured Cottage Cheese, Organic or regular	80	0.5	300	14	6
Lactaid Lowfat	80	0.5	380	12	10
✓✓ Friendship 1% Fat No Salt Added Small Curd	90	1	60	16	10
Breakstone's 2% Fat 100 Calorie Cottage Doubles with Fiber ¹	100	1	290	9	10
Breakstone's or Knudsen 2% Fat 100 Calorie Cottage Doubles ¹	100	1	310	9	10
Light n' Lively Lowfat	80	1	420	12	20
Fiber One Lowfat with Fiber	80	1	430	10	4
✓✓ Breakstone's 2% Fat Lowfat 30% Less Sodium Small Curd	100	1.5	290	14	15
Friendship 2% Fat Digestive Health Small Curd	90	1.5	360	14	10
Breakstone's 2% Fat Lowfat Small Curd	100	1.5	370	12	15
Breakstone's LiveActive	90	1.5	380	10	15

	Calories	Sat Fat (g)	Sodium (mg)	Protein (g)	Calcium (%DV)
Horizon Organic Lowfat	100	1.5	390	13	15
Knudsen 2% Fat Lowfat Small Curd	100	1.5	440	14	15
Organic Valley Lowfat Small Curd	100	1.5	450	15	8
Breakstone's 4% Fat 30% Less Sodium Small Curd	120	3	290	12	15
Breakstone's 4% Fat Small Curd	120	3	390	12	15
Knudsen 4% Fat Small Curd	120	3	430	13	15
Organic Valley 4% Fat Small Curd	110	3	450	14	6
RICOTTA CHEESE (¼ cup)					
✓✓ Sargento Fat Free	50	0	70	5	10
✓✓ Polly-O Fat Free	50	0	80	8	20
✓✓ Precious or Sorrento Fat Free	50	0	80	6	20
Frigo Fat Free	40	0	150	6	15
✓✓ Precious or Sorrento Low Fat	50	1	70	6	15
✓✓ Sargento Light	60	1.5	60	5	10
✓✓ Polly-O Lite	70	1.5	80	8	25
Frigo Low Fat	60	2	150	7	10
Sargento Part Skim	70	3	90	6	10
Frigo Part Skim	90	3.5	90	6	10
Precious or Sorrento Part Skim	100	4	60	7	25
Polly-O Part Skim	90	4	70	8	25
Whole-milk, any brand ¹	100	5	8	6	15
CREAM CHEESE (2 Tbs. tub unless noted)					
Philadelphia Fat Free, brick or tub ¹	30	0	210	4	15
✓✓ Tofutti Better Than Cream Cheese, non-hydrogenated ¹	60	2	120	1	0
Tofutti Better Than Cream Cheese*	60	2	120	1	0
✓✓ Trader Joe's Light ¹	70	3	100	4	5

	Calories	Sat Fat (g)	Sodium (mg)	Protein (g)	Calcium (%DV)
✓✓ Trader Joe's Organic Light Whipped	60	3	110	3	8
✓✓ Follow Your Heart Vegan Gourmet	90	3	120	2	2
Philadelphia ½ Less Fat ¹	70	3	160	2	4
✓✓ Weight Watchers Whipped ¹	60	3.5	70	1	0
Philadelphia Whipped, plain	60	3.5	90	1	0
Philadelphia Indulgence Chocolate ¹	110	4	80	1	3
Horizon Organic Reduced Fat	70	4	100	2	2
Philadelphia ½ Less Fat, brick	70	4	120	2	2
Philadelphia Regular, flavored ¹	80	4	130	1	4
Organic Valley Neufchatel, brick or tub ¹	80	4	140	2	3
Galaxy Nutritional Foods Vegan or Veggie ¹	90	4.5	120	1	4
Philadelphia Regular	90	5	130	2	4
Philadelphia Original, brick	100	6	110	2	2
Organic Valley, brick or tub ¹	100	6	140	1	2

SOUR CREAM (2 Tbs)

✓✓ Breakstone's or Knudsen Fat Free ¹	30	0	30	2	5
✓✓ Cabot No Fat	20	0	40	1	4
✓✓ Land O Lakes Fat Free	20	0	50	1	4
✓✓ Knudsen Light	30	1	20	2	4
✓✓ Organic Valley Lowfat	30	1	20	1	4
✓✓ Horizon Organic Lowfat	35	1	30	1	6
✓✓ Follow Your Heart Vegan Gourmet	50	1	30	1	4
✓✓ Land O Lakes or Friendship Light ¹	40	1.5	20	2	5
✓✓ Cabot Light	35	1.5	30	1	4
✓✓ Heluva Good Light	40	1.5	40	1	4
✓✓ Breakstone's Reduced Fat	40	2	20	1	6
✓✓ Daisy Brand Light	40	2	30	2	4
Tofutti Sour Supreme Better than Sour Cream ^{1*}	60	2	120	1	0
Tofutti Better Than Sour Cream	85	2	160	1	0
Full-fat, any brand ¹	60	3	20	1	3
Santa Barbara Bay Loaded Baked Potato Tater Topper	60	3	160	2	0
Breakstone's or Knudsen Zesty Blends ¹	60	3	170	1	2

CRÈME FRAÎCHE, MASCARPONE, QUARK, ETC. (1 oz.—2 Tbs.)

✓✓ Vermont Creamery Fromage Blanc 0% Fat	20	0	50	3	5
✓✓ Vermont Creamery Quark	40	1	40	2	4
Il Villaggio Mascarpone	100	7	10	2	4
Alouette Cuisine Crème Fraîche	110	7	10	1	2
BelGioioso Mascarpone	120	7	10	2	4
Vermont Creamery Crème Fraîche	110	7	20	1	6
Polenghi Italia il Mascarpone	130	8	10	1	3
Sorrento Mascarpone	130	8	20	2	4
Vermont Creamery Mascarpone	140	9	20	1	2

SPREADABLE CHEESE (1 oz.—2 Tbs.—unless noted)

The Laughing Cow Light (1 wedge, ¾ oz.) ¹	40	1	220	2	7
Weight Watchers (1 wedge, ⅔ oz.) ¹	30	1	240	2	8
WisPride Lite Port Wine (¾ oz.)	50	1.5	170	5	10
✓✓ Alouette Light ¹	40	2	110	2	2
✓✓ Rondelé Reduced Fat Pub Cheese	50	2	160	4	6
Kaukauna Lite ¹	70	2	190	5	15
✓✓ Président Pasteurized Spreadable Cheese	50	2.5	140	2	6
✓✓ Rondelé Light Garlic & Herbs	50	2.5	160	2	4
The Laughing Cow Original Creamy Swiss (1 wedge, ¾ oz.)	50	2.5	210	2	8
Président or Trader Joe's Light Brie	70	2.5	230	7	15
✓✓ Boursin Vermont White Cheddar & Sage	70	3	120	4	10
✓✓ Boursin Light Garlic & Herbs	50	3	130	3	2
✓✓ Rondelé Reduced Fat Spinach & Garlic	60	3	160	2	4
WisPride (¾ oz.) ¹	80	3	160	5	11
Kaukauna, except Garden Vegetable ¹	90	3	180	5	15

	Calories	Sat Fat (g)	Sodium (mg)	Protein (g)	Calcium (%DV)
Boursin, except Vermont White Cheddar & Sage ¹	80	4	100	2	2
Alouette ¹	70	4	110	1	2
Rondelé ¹	70	4	140	1	2
Hans' All Natural ¹	100	4	180	5	15
Cabot Spreadable Cheddar ¹	90	4	240	5	15
Kraft Spread ¹	80	4	290	3	6
Rondelé Pub Cheese ¹	70	4.5	150	2	6
Alouette Cheddar ¹	80	5	160	2	4
Kaukauna Garden Vegetable	90	5	190	2	2
Alouette Crème de Brie ¹	80	5	240	4	10
Alouette Gourmet Logs ¹	100	6	130	2	4
Boursin ¹	120	8	160	2	2

FETA (1 oz. piece or ¼ cup crumbled)

✓✓ Président Fat Free, chunk or crumbled ¹	40	0	260	7	10
✓✓ Trader Joe's Fat Free crumbled	40	0	260	7	10
Athenos Fat Free, chunk or crumbled ¹	40	0	430	8	20
Trader Joe's Light	40	1	370	5	10
✓✓ Valbreso Light	50	2	300	6	10
Athenos Reduced Fat, chunk or crumbled	60	2	390	6	7
Boar's Head, chunk or crumbled	60	2.5	370	5	6
Organic Valley, chunk or crumbled ¹	70	2.5	430	6	10
✓✓ Stella, crumbled	70	3	270	5	10
✓✓ Président, chunk or crumbled ¹	70	3.5	260	5	10
✓✓ Trader Joe's, chunk	70	3.5	260	5	10
Pastures of Eden	70	4	240	5	6
Mt. Vikos	80	4	270	5	8
Montchevré Goat Cheese Feta	70	4	310	4	8
Treasure Cave crumbled	80	4	320	5	6
Alouette crumbled ¹	80	4	340	5	12
Athenos, chunk or crumbled ¹	80	4	370	5	8
Valbreso	80	4.5	270	4	8
Vermont Creamery Goat's Milk Feta	70	4.5	310	4	15

GOAT CHEESE (1 oz.—2 Tbs.—or ¼ cup crumbled)

✓✓ Soignon Chèvre à Tartiner Spreadable	40	2	90	3	3
✓✓ Trader Joe's Creamy	50	2	140	3	4
✓✓ Chavrie ¹	50	2.5	130	3	2
✓✓ Vermont Creamery Creamy	50	3	70	3	6
✓✓ Montchevré Fresh Medallions (1 medallion)	70	3.5	40	5	4
Trader Joe's Chevre Wild Blueberry Vanilla or with Honey ¹	80	3.5	50	5	4
Trader Joe's Fresh Medallions (1 medallion)	70	3.5	60	5	4
✓✓ Montchevré crumbled ¹	80	3.5	110	3	2
✓✓ Trader Joe's crumbled	80	3.5	110	3	2
Vermont Creamery Fresh	80	4	50	5	4
Cypress Grove Chevre ¹	70	4	90	4	2
Montchevré, except crumbled ¹	70	4	120	4	2
Chavrie Fresh ¹	80	4	120	5	2
Président Fresh	70	4	130	4	2
Alouette crumbled ¹	80	4.5	140	5	2
Ile De France ¹	80	5	130	5	6

FONDUE (¼ cup)

Anco Prestige	130	5	340	8	25
Swiss Knight L'Original	130	5	360	8	30
Emmi Original	150	6	370	9	30
Emmi Gorgonzola	140	6	460	9	30

✓✓ Best Bite. ¹Average. *Contains 2 grams of trans fat.

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

Sodium: 1,500 milligrams. **Calcium Daily Value (DV):** 1,000 milligrams.

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

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RIGHT STUFF

FOOD PORN

A BETTER BUTTER



Americans love their peanut butter. But PB has a problem: a modest serving (2 level tablespoons) has 190 calories. “Reduced fat” peanut butters are no better. Companies like Jif and Skippy replace some of the fat with carbs, so the calories don’t budge.

That’s why calorie counters will love **PB2** (“peanut butter’s second generation”). It’s a powdered peanut butter made by slow roasting and then pressing the peanuts to remove 85 percent of the oil. Just mix 2 tablespoons of PB2 with 1 tablespoon of water and stir.

The result: only 45 calories per serving (which shrinks to 1½ tablespoons), with as much protein (5 grams) and carbs (5 grams) as 1½ tablespoons of regular peanut butter.

If a powdered peanut butter seems unnatural, take a look at PB2’s ingredients: roasted peanuts, sugar, and salt. The 1 gram of sugar is nothing to worry about, and PB2 is free from the added oils that you get even in the “natural” lines of peanut butters like Jif, Skippy, and Peter Pan.

Beyond PB&J, PB2 can lighten up your Pad Thai or peanut dipping sauce or salad dressing. And it’s great for travelers and backpackers. Taste? As rich and nutty as regular peanut butter.

Also worth a try: **PB2 with Premium Chocolate**. The added cocoa powder displaces some peanuts, so the protein drops to 4 grams, but a 1½-tablespoon serving still has just 45 calories.

PB2 is sold at some Whole Foods and natural food stores. If you can’t find it, try amazon.com or bellplantation.com. You may never go back to PB1.

Bell Plantation: (229) 387-7238

CODE RED CAKE



“A traditional favorite, frosted with vanilla bean cream cheese and white chocolate curls.” That’s how **California Pizza Kitchen** describes its

Red Velvet Cake. Like many items on CPK’s dessert menu, the cake is also

available “+ Häagen-Dazs.” What a fabulous idea! Why settle for plain old cake, icing, and white chocolate when you can add 300 extra calories’ worth of super-premium ice cream?

You can always depend on California Pizza Kitchen for what its Web site calls “innovative cuisine with a signature twist that’s globally inspired yet distinctly California.” (Does the name Häagen-Dazs count as globally inspired for people who don’t know that it’s a made-up Scandinavian-sounding word?)

Nothing says California like a big piece of cake laced with red food dye. With a scoop of ice cream, it packs 1,080 calories and 30 grams of saturated fat (a 1½-day supply). Nearly half the calories come from white flour and sugar.

And few people go to the chain just for dessert. That means those 1,000+ calories will likely top off a 1,000-calorie pizza or a 1,000-calorie plate of pasta or (yes, it’s true) one of several 1,000-calorie salads.

Truth be told, CPK has no healthy desserts. The lowest-calorie option is the Apple Crisp (510 calories). Of course, the menu offers to serve it with caramel (600 calories), with Häagen-Dazs (810), or with both (900 calories).

That is just so California.

California Pizza Kitchen: (800) 275-8255

dish OF THE MONTH

Roasted Asparagus

Toss 1 pound of asparagus with 1 tsp. of canola oil. Roast in a 400° F oven until lightly browned and tender, about 15 minutes.

Drizzle with 1 tsp. of toasted sesame oil, 1 tsp. of soy sauce, and a squeeze of lemon. Sprinkle with sesame seeds.

Serve hot or cold.