JANUARY/FEBRUARY 2017 \$2.50 HEALTH LETTER® CENTER FOR SCIENCE IN THE PUBLIC INTEREST

out 3 adults have

prediabetes

9 out 1 0 don't know it



Fixin' for a Fight



n November 7th, I was feeling great. After all, the Cubs had won the World Series the previous week.

On November 9th? Not so much.

Though President Trump's food policy agenda remains

unclear, his anti-regulatory, anti-science bent, and his nomination of cabinet secretaries from the food industry (Hardee's,

Carl's Ir.) and other industries, has me greatly worried about the fate of the gains we have made over the last decade.

If the Affordable Care Act is repealed, for example, not only could 22 million Americans face the devastating prospect



Junk foods could return to schools under the new administration.

of losing their health insurance, but all of us would lose the opportunity to see how many calories are in thousands of foods.

Why? Because out with the ACA would go the rule requiring chain restaurants, movie theaters, supermarket delis, and convenience stores to list calories on menu boards starting May 5th.

Other candidates for the chopping block:

- Salt reductions. The Obama administration proposed voluntary targets for cutting sodium in foods, which would save tens of thousands of lives every year. The new administration could scrap the whole effort —as some in the food industry have urged.
- "Added sugars" on labels. The Food and Drug Administration has told companies

to disclose added sugars on Nutrition Facts labels by 2018. The new administration could delay that deadline for years.

- Better food in schools. Two members of the Trump campaign's agriculture advisory committee have worked to roll back the progress we've made in improving school lunches and removing junk foods from school vending machines.
- Trans fat ban. The new administration may be inclined to grant the food industry's re-

quest to continue to use (heartdamaging) trans fat in certain processed foods.

■ Safe-food protections.

Who knows what to expect from a president whose campaign accused the "food police" (that would be the FDA) of "inspection overkill."

Have no doubt. We're going to fight to protect the gains we've made. And we'll continue to push for progress where we can, especially at the state and local level. You can also count on us to keep pressing food companies to improve their products and

It's going to be a tough few years, but with your support, we will continue the fight. To help, please go to <u>cspinet.org/support</u>.

hike Jacobson

Thank you.

Michael F. Jacobson, Ph.D., President Center for Science in the Public Interest

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

Volume 44 Number 1

EDITORIAL

Michael F. Jacobson, Ph.D.

Bonnie Liebman, M.S.

Stephen B. Schmidt Editor-in-Chief

David Schardt Lindsay Moyer, M.S., RD Caitlin Dow, Ph.D. Senior Nutritionist

> Kate Sherwood Culinary Directo

Leah Ettman, M.S., M.P.H. Jennifer Urban, B.S. Project Coordinators

CIRCULATION MANAGEMENT

Debra Brink Jennifer Green-Holmes Ken Waldmiller Brian McMeley

Chris Schmidt

SCIENCE ADVISORY BOARD

Kelly D. Brownell, Ph.D. Duke University

Caldwell B. Esselstyn Jr., M.D. Cleveland Clinic Foundation

Stephen Havas, M.D., M.P.H., M.S. Northwestern University Medical School

> Norman M. Kaplan, M.D. Southwestern Medical Center University of Texas, Dallas

JoAnn E. Manson, M.D., Ph.D. Harvard Medical School

> Julie Mares, Ph.D. University of Wisconsin

J. Glenn Morris, Jr., M.D., M.P.H.&T.M.

Emerging Pathogens Institute University of Florida

Susan B. Roberts, Ph.D. USDA Human Nutrition Research Center on Aging, Tufts University

Frank Sacks, M.D. Harvard Medical School

Jeremiah Stamler, M.D. Northwestern University Medical School

Regina G. Ziegler, Ph.D., M.P.H. National Cancer Institute

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

POSTMASTER: Send address changes to Nutrition Action Healthletter, 1220 L Street, NW, Suite 300, Washington, DC

SUBSCRIBER SERVICES

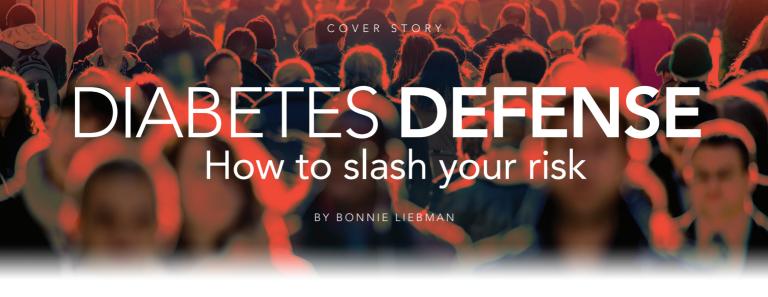
The cost of a one-year subscription or gift (10 issues) is \$24; two years are \$42. For bulk subscriptions, please write for details. To change your address, send us your subscriber number and your old and new address. If you don't want us to exchange your name, send us your name and mailing-label information.

Mail: CSPI, 1220 L Street NW, Suite 300, Washington, DC 20005 E-mail: NutritionAction@customersvc.com
Tel: (866) 293-CSPI (2774)

Internet: myaccount.nutritionaction.com For more offerings from Nutrition Action: store.nutritionaction.com



search for Nutrition Action.



One out of three U.S. adults have prediabetes. Nine out of ten of them don't know it. The good news: A healthy diet and exercise can cut their risk of diabetes in half. And that's for people whose risk is already high.

"We could prevent about 90 percent of type 2 diabetes in the United States if we could keep everyone at low risk," says Walter Willett, of the Harvard T.H. Chan School of Public Health, Here's how.



had prediabetic blood sugar readings," says retired administrative assistant Lou Ann Adams, who lives north of Omaha.

"I was a little overweight and

then I had a hip replacement, and that really put on the weight. But since I started the program, I've lost 50 pounds, and I never want to gain it back."

Adams is talking about the year-long Diabetes Prevention Program, which helps people with prediabetes dodge the disease by changing what they eat and how much they move. Left alone, 15 to 30 percent of people with prediabetes end up with diabetes within five years. (See "The Path to Diabetes," p. 5.)

"The program tells you how to eat out and how to do holidays," says Adams, 62. "It tells you what to look for on labels. I thought I knew how to eat correctly, but it was eve opening. And Jeannie, the program leader, lost weight with us."

A year after the program ended, Lou Ann and her husband still go to the gym almost daily. "I do cardio three times a week and strength twice a week," she

says. "It's about an hour a day, but it gives vou more energy to do everything."

"Now my blood sugars are normal, my cholesterol's down, my blood pressure's down," says Adams.

She joined a DPP program at the

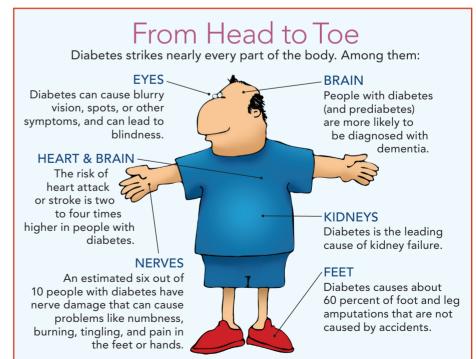
University of Nebraska Medical Center, but they're also offered online or by local groups across the country.

"It could be anything from a church to a health system to the YMCA," says Judith Wylie-Rosett, who heads the division of health promotion and nutrition research at the Albert Einstein College of Medicine in New York.

As long as programs meet standards set by the Centers for Disease Control and Prevention, they're covered by some insurance plans and, starting in 2018, by Medicare.

Why? Preventing diabetes is far cheaper than treating it.





Sources: Centers for Disease Control and Prevention, American Diabetes Assoc., American Heart Assoc.

And study after study has shown that programs like the DPP work.

The DPP Study

"It's amazing that a study on lifestyle, not medication, has changed the way we care for patients," says Wylie-Rosett.

She's talking about the Diabetes Prevention Program study, which randomly assigned roughly 3,200 overweight people with prediabetes to take either metformin (a drug that lowers blood sugar) or a placebo or to a lifestyle (diet-plus-exercise) group.1

In 2001, researchers halted the study a year early because the difference between groups was so stark.

"The lifestyle group had a 58 percent lower risk of diabetes than the placebo group," says Wylie-Rosett, who was one of the DPP investigators. Results were similar in trials in Europe and Asia.²

Metformin cut the risk of diabetes by only 31 percent.

"And the risk dropped by 70 percent among people in the lifestyle group who were over 60," notes Wylie-Rosett. "It was really dramatic."

What mattered most: whether the participants lost weight, even though they didn't lose much.

"The weight loss was 7 percent of their



Shoot for a half hour of brisk walking daily to lower your risk of diabetes. And if you have diabetes, get up and move every half hour.

Are You at Risk?

Write your score in the box

How old are you? Less than 40 years (0 points) 40-49 years (1 point)

50-59 years (2 points) 60 years or older (3 points)

Are you a man or a woman?

If you are a woman, have you ever been diagnosed with gestational diabetes?

Man (1 point) Woman (0 points)

Yes (1 point) No (0 points)

Do you have a mother, father, sister, or brother with diabetes?

Yes (1 point) No (0 points)

Have you ever been diagnosed with high blood pressure?

Yes (1 point) No (0 points)

Are you physically active?

Yes (0 points) No (1 point)

What is your weight status? (see chart at right)

If you scored 5 or higher:

You are at increased risk for prediabetes or type 2 diabetes. However, only a blood test can tell for sure.

the box	Height	Weight (lbs.)		
	4' 10"	119-142	143-190	191+
	4' 11"	124-147	148-197	198+
	5'0"	128-152	153-203	204+
	5' 1"	132-157	158-210	211+
	5' 2"	136-163	164-217	218+
	5'3"	141-168	169-224	225+
	5' 4"	145-173	174-231	232+
	5' 5"	150-179	180-239	240+
	5' 6"	155-185	186-246	247+
	5′7″	159-190	191-254	255+
	5'8"	164-196	197-261	262+
	5'9"	169-202	203-269	270+
	5′10″	174-208	209-277	278+
	5'11"	179-214	215-285	286+
	6'0"	184-220	221-293	294+
	6'1"	189-226	227-301	302+
	6'2"	194-232	233-310	311+
	6'3"	200-239	240-318	319+
	6'4"	205-245	246-327	328+
		(1 point)	(2 points)	(3 points)
Add up		You weigh less than the amount in the left column (0 points)		

Source: American Diabetes Association.

body weight at six months, and by three years it was only 5 percent," says Wylie-Rosett.

> The exercise goal—150 minutes a week-mattered, but not as much.

vour score

"If you put weight into the model, it overpowers everything else," explains Wylie-Rosett.

"Weight is the dominant factor over time. But if you look at people who didn't meet the weight-loss goal, physical activity had an effect. The takeaway is that even if you don't lose much weight, you may reduce your risk of diabetes if you're physically active."

What's more, since the study ended, many participants have regained much of the weight they lost. But if you count the number who now have diabetes, it's still 27 percent lower in the lifestyle group than in the placebo group.3

"After 10 years, there was no difference in weight loss...but the difference in the development of

diabetes persisted," explained Rena Wing, a DPP investigator at Brown University, to members of the National Academy of Medicine in October.

"That suggests that there's a legacy effect, so that if you lose weight, even if you regain it, there's a positive long-term impact of that period of weight loss."

"We investigators were probably as surprised as others that the program had a long-term effect even after people regained weight," says Wylie-Rosett. "The bottom line is that a healthy lifestyle may lower the risk of diabetes even if you can't see it on the scale."

Which Diet?

What did people in the Diabetes Prevention Program eat?

"The original DPP used a low-fat diet," notes Wylie-Rosett. "We used fat grams as a way of counting calories." For people who aren't good at math, it's easier to shoot for, say, 50 grams of fat a day than for 1,500 calories. "If people weren't

losing weight, they started counting calories," she adds.

Eating less fat got people to cut calories, but it wasn't ideal. The diet didn't emphasize cutting sugary drinks or sweets (unless they were fatty) or white-flour carbs.

"The low-fat diet was in vogue at the time, but we can do better than that," says Walter Willett, chair of the nutrition department at the Harvard T.H. Chan School of Public Health.

Would a low-carb diet make the pounds melt away? "The short-term effects of a low-carb diet seem to be better," says Wylie-Rosett. "But the long-term effects are fairly similar."45

That's why The Obesity Society and other health authorities recommend a low-carb, a low-fat, or a dozen other diets to lose weight.6

"The problem with some studies that make sensational claims about low-carb diets is that they only report on completers," says Wylie-Rosett. "In one study from Duke, about half the people dropped out. People who had trouble sticking to the diet just didn't come back."

Z

That said, cutting back on carbs is a great way to cut calories. For starters, sodas and other sugary beverages unquestionably cause weight gain.8

What's more, carbs are easy to see. You may not know if a sauce or soup or sandwich is fatty. But you know if you're eating a bagel, pizza crust, burrito, quesadilla, bowl of noodles, muffin, doughnut, cupcake, cookie, ice cream, or milkshake.

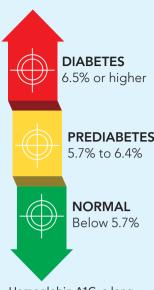
The bottom line: "You can lose weight with a low-fat diet or a low-carbohydrate diet," said Wing.

"The weight loss will be the same if you reduce your calories the same. You want to select a diet that [you] will adhere to and that will restrict calories."

Beyond the DPP

Intervention trials like the DPP show that diet-and-exercise programs can cut your risk of diabetes in half.

And in the Nurses' Health



Hemoglobin A1C, a longterm measure of blood sugar, is the easiest way to test for diabetes.

The Path to Diabetes

What leads to type 2 diabetes? The trigger seems to be insulin resistance (or insulin insensitivity).

Insulin acts as a key that allows blood sugar to enter cells, where it can be burned for fuel or stored for later. But in some people, especially those who are overweight, the key can't open the lock.

To compensate for that insulin resistance, the pancreas pumps out more and more insulin. If it's not quite enough, blood sugar creeps up to "prediabetes" levels.

"But after years of stress on the pancreas to produce more insulin, the pancreatic cells deteriorate and can't keep up with the demand," says Harvard's Walter Willett.

That's when blood sugar reaches the "diabetes" range.

Study, which tracked 85,000 women for 16 years, those with the healthiest lifestyles had about a 90 percent lower risk of diabetes than those with unhealthy lifestyles (though something else about those women may explain some of that lower risk).2

Other evidence from studies that observe people instead of enrolling them in programs:

■ Unhealthy carbs. "Cutting back on unhealthy carbohydrates—basically white

flour and other refined starch, sugar, and potatoes—is helpful," says Willett. In his recent study on 70,000 women, those who ate more starch and less fiber had a higher risk of diabetes.10

■ Sugar drinks. "There's about a 25 percent increase in the risk of diabetes for each 12 oz. serving of sugar-sweetened beverages per day," notes Willett.11

And only about half of that increased risk is due to weight gain. "It's also probably due to the high amount of unhealthy

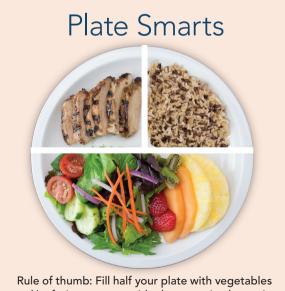
> carbohydrate that is gulped down in a few minutes."

■ Meat. "Both processed and unprocessed red meat are related to a higher risk of type 2 diabetes, consistently and quite strongly in all of our studies," says Willett.12

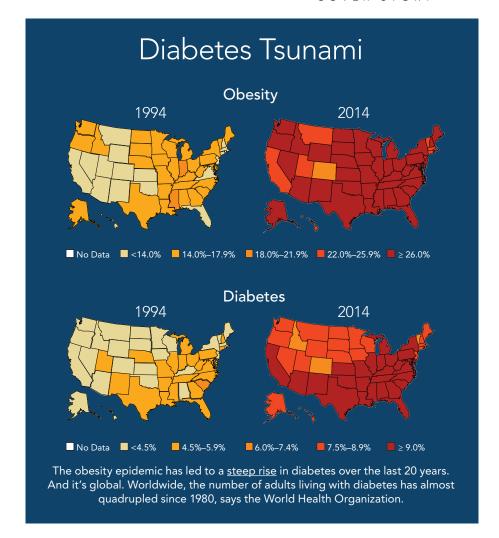
"If you want to keep diabetes risk low, replace red meat with some beans, nuts or other plant sources of protein, or some dairy, poultry, or fish."

■ Dairy. "There is always hype about the benefits of dairy," says Willett. "We need more studies, but so far it looks like vogurt—but not overall dairy—seems to reduce the risk of type 2 diabetes." 13

What about studies reporting a lower risk of diabetes in people with high blood levels of dairy fat?14 "Those levels are not good



and/or fruit, a quarter with plant or animal protein, and just a quarter with (preferably whole) grains.



measures of dairy intake," he explains. "And they're influenced by an individual's metabolism. That's tricky because diabetes is a disease of disturbed metabolism."

■ Coffee. In Willett's studies, each daily cup of coffee was linked to a 4 to 8 percent lower risk of diabetes.15

"It's probably due to the flavonoids and antioxidants in coffee," he notes, "because it looks like decaffeinated coffee has a similar benefit."

- Magnesium. People who consume more magnesium-rich foods—like leafy greens, beans, nuts, and whole grainshave a lower risk of progressing from prediabetes to diabetes.16 But something else about those people may account for their lower risk.
- Vitamin D. People with low vitamin D levels have a higher risk of diabetes. But so far, most studies that give vitamin D or a placebo to people with prediabetes have come up empty. T Stay tuned.

■ Selenium. People over age 62 who were given selenium supplements (200 micrograms a day) for roughly three years were twice as likely to get type 2 diabetes as those who got a placebo.18 Stick to a multivitamin with no more than about 100 mcg.

The good news: you can cut your risk of diabetes quickly.

"If you make a change in your diet or lifestyle today, you're taking your foot off the accelerator, and that happens almost overnight," says Willett. "If you exercise today, your insulin resistance goes down within hours. And if you keep up the daily exercise, within a day or two your risk of diabetes drops."

Changing your diet might take longer to make a difference, but it's a matter of weeks, not years. "Even if you're right at the brink of diabetes, you can still rapidly reduce your risk," says Willett.

DPP participant Lou Ann Adams would agree. "Don't give up and don't think you can't do it," she says. "Nothing tastes as good as being healthy feels. Who wants to get diabetes."

- ¹ N. Engl. J. Med. 346: 393, 2002.
- ² Ann. Intern. Med. 163: 437, 2015.
- ³ Lancet Diabetes Endocrinol. 3: 866, 2015.
- ⁴ Diabetes Care 32: 1147, 2009.
- ⁵ JAMA 312: 923, 2014.
- ⁶ Circulation 129: S102, 2014.
- ⁷ Nutr. Metab. 5: 36, 2008.
- ⁸ N. Engl. J. Med. 367: 1397, 2012.
- ⁹ N. Engl. J. Med. 345: 790, 2001.
- 10 Am. J. Clin. Nutr. 102: 1543, 2015.
- 11 Diabetes Care 33: 2477, 2010.
- ¹² Am. J. Clin. Nutr. 94: 1088, 2011.
- 13 BMC Med. 12: 215, 2014.
- 14 Circulation 133: 1645, 2016
- 15 Am. J. Clin. Nutr. 97: 155, 2013.
- 16 Diabetes Care 37: 419, 2014. 17 J. Clin. Endocrinol. Metab. 99: 3551, 2014.
- ¹⁸ J. Natl. Cancer Inst. 108: djw152, 2016.

Bottom Line

- The best way to dodge diabetes is to lose (or not gain) extra pounds.
- Shoot for at least 30 minutes of brisk walking or other aerobic exercise daily. Avoid sitting for long periods.
- Limit white flour, potatoes, and sweets, especially sugar-sweetened drinks.
- Replace red and processed meat with beans, nuts, soy, poultry, fish, or dairy.

- Drink regular or decaf coffee if you like it.
- Take a multivitamin with no more than 100 mcg of selenium.
- It's too early to know if dairy, magnesium, or vitamin D affects diabetes risk.
- If you have prediabetes, find a CDC-recognized in-person or online Diabetes Prevention Program near you. (Go to: cdc.gov/diabetes/ prevention.)



BY DAVID SCHARDT

arkinson's disease. Dementia. Type 2 diabetes. Could caffeine—or coffee, caffeine's preferred delivery system—help ward them off? Even though much of the evidence isn't the kind that can prove cause and effect, it does make you wonder.

Here's some of the latest on the world's most widely consumed drug.

PARKINSON'S DISEASE

People who consume more caffeine seem to have a lower risk of Parkinson's disease.1

"That has been clearly established in multiple studies," says David Simon, a neurologist at the Harvard Medical School.

For example, the Health Professionals Follow-Up Study tracked more than 47,000 men for nine years and the Nurses' Health Study tracked nearly 89,000 women for 16 years.²

Those who drank one to three cups of regular coffee a day had a 40 percent lower risk of being diagnosed with Parkinson's than those who consumed none.

But that's not proof that caffeine can help prevent Parkinson's.

"Caffeine intake could be a marker for something else that's affecting

whether someone develops the disease," notes Simon.

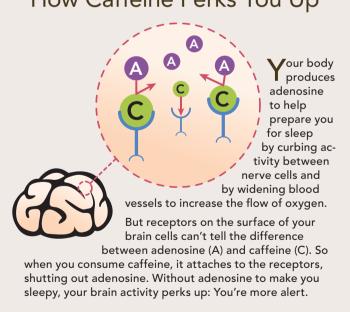
What about people who already have Parkinson's?

Simon and his colleagues analyzed results from a large drug trial that

asked people how much caffeine they consumed.3 "We were disappointed to see that a higher caffeine intake wasn't

associated with a slower progression of Parkinson's," he says.

How Caffeine Perks You Up



But that kind of study can't prove whether caffeine could have an impact on the disease. Researchers at McGill University in Montreal have been conducting trials that can.

A few years ago, when Ron Postuma

and his team gave 100 to 200 milligrams of caffeine or a placebo twice a day to 61 Parkinson's patients, some symptoms—like rigidity or impaired movement—improved in the caffeine takers after six weeks.4

"But we don't know if this is a long-lasting benefit or whether it works for a little while and then your body gets used to it," says Postuma.

He has launched a second study, to see if 200 mg twice a day for up to five years improves symptoms or slows the

> progression of the disease. First results are due later this

DIABETES

When researchers track what people eat and the diseases they get, "higher coffee consumption is consistently linked to a lower risk of developing type 2 diabetes," says epidemiologist Rob van Dam, of the National University of Singapore and the Harvard T.H. Chan School of Public Health.

"People drinking a few cups of coffee a day have a lower risk of type 2 diabetes, and drinking more than that is linked to an even lower risk."

For example, among roughly 115,000 men and

women followed for two decades, each daily cup of coffee was linked to a 4 to 8 percent lower risk of being diagnosed with type 2 diabetes.5

And it didn't matter whether they were drinking regular or decaf, so caffeine doesn't explain the lower risk.

Unfortunately, "there's no evidence that drinking coffee will slow down or reverse diabetes," notes van Dam.

HIGH BLOOD PRESSURE

About 30 minutes after you ingest caffeine, your blood pressure will probably have risen by a few points. It typically stays elevated for a few hours before returning to where it was before.6

While that's important to remember when you're having your blood pressure measured, "drinking caffeinated coffee regularly does not seem to lead to



Can caffeine help ward off disease? It's not clear

developing high blood pressure," says Jinnie Rhee, an instructor in medicine in the Division of Nephrology at the Stanford School of Medicine.

For example, Rhee and her colleagues recently analyzed three years' worth of results from the Women's Health Initiative Observational Study of nearly 30,000 postmenopausal women.⁷

Those who regularly consumed caffeine had no higher blood pressure and no greater risk of hypertension than those who consumed no caffeine.

Does caffeine boost pressure if it's already high? Researchers don't know. No good studies have lasted longer than two weeks.

IRREGULAR HEARTBEAT

"People shouldn't worry that drinking moderate amounts of coffee is going to cause a heart arrhythmia such as atrial fibrillation," says cardiologist Arthur Klatsky, of Northern California Kaiser Permanente in Oakland.

"All physicians see patients who say they get palpitations, and doctors usually advise them to cut down on drinking coffee," adds Klatsky. "I did, too. But it was rarely if ever rewarded by someone coming back and saying, 'Well, that fixed the CAFFEINE ANHYDROUS problem."

OWDER "So I wasn't surprised when we did a study and found that coffee drinkers—even heavy drinkers-had no higher risk of being hospitalized for arrhythmia than non-coffee drinkers."

Klatsky and his team analyzed the medical records of more than 130,000 healthy Kaiser Permanente participants.8 Over 18 years, roughly 3,100 of them were hospitalized for a cardiac arrhythmia. Those who drank one or more cups a day of regular or decaf had no greater risk of being hospitalized than those who drank little or no coffee.

That's consistent with the results of other research.2

COGNITIVE DECLINE

"Drinking coffee could reduce your risk for dementia," ran the headline in Fortune magazine last October.

In a study that tracked more than 6,000 women aged 65 and older for 10 years, the average participant consumed about

Bottom Line

- It's too early to know if caffeine can lower your risk of Parkinson's or dementia.
- Coffee (decaf or regular) may lower your risk of type 2 diabetes.
- Caffeine doesn't cause hypertension, but it does raise your blood pressure for several hours.

Uh Oh

oo much caffeine can cause jitteriness, and caffeine too close to bedtime can make it harder to fall asleep.

But the jury is still out over whether caffeine consumed during pregnancy can increase the risk of miscarriage or low birth weight. That's why many health organizations recommend that pregnant women consume only moderate amounts of caffeine or none at all.

> And everyone should stay away from pure caffeine powder. Why?

A single teaspoon is equal to roughly 28 cups of

coffee. That means two to four teaspoons could kill you.

Dual Health

175 mg of caffeine a day. Those who got more than that were 26 percent less likely to show signs of cognitive impairment or dementia than those who got less.10

But in a 2010 meta-analysis of seven studies that lasted an average of about 10 years, people who reported consuming more caffeine had no lower risk of dementia or cognitive impairment.11

"The studies on caffeine and dementia are intriguing," says Martha Clare Morris, a nutritional epidemiologist at Rush University in Chicago. "But the findings are all over the place and are not consistent enough for us to be confident that there's really an association there."

Coffee consumption typically declines in older age, notes Morris. "The people who choose to continue to drink coffee may be different from those who choose not to, and it's this difference and not caffeine that may matter more."

- ¹ Lancet Neurol. 15: 1257, 2016.
- ² <u>Ann. Neurol. 50: 56, 2001</u>.
- ³ Clin. Neuropharmacol. 38: 163, 2015.
- ⁴ Neurology 79: 651, 2012.
- ⁵ <u>Am. J. Clin. Nutr. 97: 155, 2013</u>
- ⁶ Ann. Pharmacother. 42: 105, 2008.
- Am. J. Clin. Nutr. 103: 210, 2016.
- ⁸ Perm. J. 15: 19, 2011. 9 Heart 99: 1383, 2013.
- 10 J. Gerontol. A Biol. Sci. Med. Sci. 71:1596, 2016.
- ¹¹ J. Alzheimers Dis. 20: S187, 2010.

The Buzz Feed

Snapple Lemon Tea has 37 mg of caffeine—as much as half a shot of Starbucks espresso. But you'd never know it from the label. The FDA doesn't require companies to disclose caffeine (many companies voluntarily do). If they all did, here's what you'd see in some popular items. For a longer list, go to <u>cspinet.org/caffeine</u>.

Coffee Caffe	ine (mg)
Starbucks Coffee, Blonde Roast (venti, 20 oz.)	475
Dunkin' Donuts Coffee with Turbo Shot (large, 20 oz.)	398
Starbucks Coffee, Pike Place Roast (grande, 16 oz.)	310
Panera Coffee, Light Roast (medium, 16 oz.)	300
Starbucks Coffee, Pike Place Roast (tall, 12 oz.)	235
Starbucks Caffè Americano (grande, 16 oz.)	225
Dunkin' Donuts Coffee (medium, 14 oz.)	210
Starbucks Iced Coffee (grande, 16 oz.)	190
Starbucks Caffè Mocha (grande, 16 oz.)	175
Starbucks Iced Black Coffee, bottle (11 oz.)	160
Starbucks—Caffè Latte or Cappuccino (grande, 16 oz.)	150
Starbucks Espresso (doppio, 2 oz.)	150
Starbucks Frappuccino Coffee, bottle (14 oz.)	130
Nespresso Kazaar capsule (1 capsule, makes 1 oz.)	120
Starbucks Mocha Frappuccino (grande, 16 oz.)	110
Maxwell House Lite Ground Coffee (2 Tbs., makes 12 oz.)	50-100
Starbucks Coffee Frappuccino (grande, 16 oz.)	95
Folgers Ground Coffee, House Blend (2 Tbs., makes 12 oz.)	60-80
Nespresso capsule—except Kazaar (1 capsule, makes 1 oz.)	50-80
Green Mountain Keurig K-Cup—Breakfast Blend or Nantucket Blend (1 pod, makes 8 oz.)	75
International Delight—Iced Coffee or Iced Coffee Light (8 oz.) 55-65
Califia Farms Café Latte Cold Brew Coffee (8 oz.)	50
Dunkin' Donuts, Panera, or Starbucks Decaf Coffee (16 oz	z.) 10-25
Maxwell House Decaf Ground Coffee (2 Tbs., makes 12 oz.)	2-10

Tea

Starbucks Chai Latte—iced or regular (grande, 16 oz.)	95
Honest Tea Organic Lemon Tea (17 oz.)	90
KeVita Master Brew Kombucha (15 oz.)	80
Starbucks Green Tea Latte—iced or regular (grande, 16 oz.)	
Black tea, brewed (8 oz.)	47
Tazo Organic Iced Black Tea, bottle (14 oz.)	45
Snapple Lemon Tea (16 oz.)	37
Arizona Iced Tea, black (16 oz.)	30
Green tea, brewed (8 oz.)	29
Lipton Lemon Iced Tea (20 oz.)	25
Gold Peak Unsweetened Tea (19 oz.)	23
Arizona Iced Tea, green (16 oz.)	15
Lipton Decaffeinated Tea, black, brewed (8 oz.)	5
Herbal tea, brewed (8 oz.)	0

Soft Drinks (12 oz.)

Pepsi Zero Sugar	69
Mountain Dew—diet or regular	54
Diet Coke	46

	Caffeine (mg)
Dr Pepper or Sunkist—diet or regular	41
Pepsi or Pepsi True	38
Coca-Cola, Coke Zero, or Diet Pepsi	34
Coca-Cola Life	28
Barq's Root Beer, regular	22
7-Up, Fanta, Fresca, ginger ale, or Sprite	0
Root beer, most brands—diet or regular	0

Energy Drinks & Other Beverages

5-hour Energy (2 oz.)	200
Hiball—Organic Energy Drink or Sparkling Energy Water (16 oz.)	160
Monster Energy (16 oz.)	160
Rockstar Energy (16 oz.)	160
AMP Energy Zero (16 oz.)	157
ávitāe Caffeine + Water (17 oz.) 4!	5-125
Red Bull (8 oz.)	80
V8 V-Fusion +Energy (8 oz.)	80
Bai Antioxidant Infusion (16 oz.)	70
Crystal Light with Caffeine (1 packet, makes 16 oz.)	60
MiO Energy (½ tsp., makes 8 oz.)	60
Ocean Spray Cran-Energy (8 oz.)	55
Glacéau Vitaminwater Energy (20 oz.)	50
Starbucks Refreshers, can (12 oz.)	50

Ice Cream & Yogurt (4 oz., unless noted)

Dannon Coffee Yogurt (6 oz.)	30
Häagen-Dazs Coffee Ice Cream	29
Stonyfield Organic Gotta Have Java Nonfat Frozen Yogurt	28
Dreyer's or Edy's Slow Churned Coffee Ice Cream	15
Breyers Coffee Ice Cream	11
Dannon Oikos Café Latte Greek Yogurt (5 oz.) less t	han 1
Häagen-Dazs Chocolate Ice Cream less t	han 1

Chocolate Candy & Chocolate Drinks

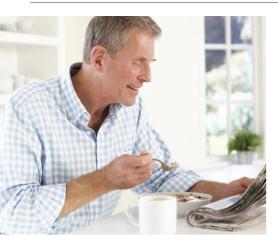
Starbucks Hot Chocolate (grande, 16 oz.)	25
Hershey's Milk Chocolate Kisses (9 pieces, 1.4 oz.)	10
Hershey's Milk Chocolate Bar (1.6 oz.)	9
Hershey's Cocoa (1 Tbs.)	8
Silk Dark Chocolate Almondmilk (8 oz.)	4
Silk Soymilk—Chocolate or Light Chocolate (8 oz.)	4
Hershey's Chocolate Lowfat Milk (12 oz.)	2

Over-the-Counter Pills

NoDoz or Vivarin (1 caplet or tablet)	200
Excedrin Migraine (2 caplets)	130
Midol Complete (2 caplets)	120
Bayer Back & Body (2 caplets)	65
Anacin (2 tablets)	64

Sources: Company information, USDA. Chart compiled by Leah Ettman.

Take It to Heart



hich foods can best protect your heart? The American Heart Association released a "scientific statement" in November, in part because recent media reports have claimed that high-fat dairy foods are heart-healthy. Among the statement's key recommendations:

- Dairy: Choose low-fat or fat-free milk, cheese, or yogurt, or nondairy milks with added calcium and vitamin D if they are low in sugar.
- Meats and poultry: Choose lean or extra-lean instead of fatty or processed meats.
- Eggs: Eat fewer egg yolks if you have high LDL ("bad") cholesterol.
- Unsaturated fats: Choose oils (like soybean, olive, or canola), mayo, salad dressings, and soft margarines.
- Saturated fats: Avoid butter, cream, beef tallow, lard, and tropical oils (palm, palm kernel, and coconut).
- Added sugars: Limit to 100 calories (6 teaspoons) a day for women and children, and to 150 (9 tsp.) for men (because they typically consume more calories).
- Salt: Limit sodium to 2,300 milligrams a day (1,500 mg for people with prehypertension or high blood pressure). The "salty six": bread and rolls, cured meats, pizza, poultry, soup, and sandwiches.

What to do: For more information, go to circ.ahajournals.org/content/134/22/e505.

Circulation 134: e505, 2016

A "Natural" Halo?

oes the word "natural" make a food or drink sound healthier? Researchers showed 578 people a label—with or without the word "natural" on it—for one of six foods: bean dip, coconut water, a fruit smoothie, Pepsi-Cola, peanut butter, or tea.

The participants estimated that the "natural" products had 18 percent fewer calories per serving. They also rated the natural products as more healthful and less likely to cause weight gain than their regular counterparts.

What to do: Don't read too much into "natural" claims. The only criteria for the claim: the foods can contain no added colors, artificial flavors, or synthetic substances. And "natural" meat



and poultry must also be only minimally processed. But that doesn't necessarily mean that they're good for you.

Lipton

Appetite 108: 506, 2017.

Vitamin D & Asthma

sthma attacks cause symptoms like Awheezing, coughing, chest tightness, and shortness of breath. Severe cases can be fatal. Could vitamin D help, as some studies suggest?

Scientists reviewed nine trials testing vitamin D against a placebo on nearly 1.100 children and adults. Most had mild or moderate asthma and continued to take their usual asthma medication. The studies lasted four to 12 months.

Vitamin D supplements reduced the risk of severe asthma attacks requiring a hospital admission or visit from 6 percent to 3 percent. However, they had no impact on lung function or day-to-day symptoms.

"This is an exciting result, but some caution is warranted," said lead author Adrian Martineau, of Queen Mary University of London.

First, more trials are needed to find out if vitamin D can help people with severe asthma. "Second, it is not yet clear whether vitamin D supplements can reduce risk of severe asthma attacks in all patients, or whether this effect is just seen in those who have low vitamin D levels to start with," noted Martineau.

What to do: If you have asthma, get your vitamin D levels tested. Stay tuned.

Cochrane Database Syst. Rev. 9: CD011511, 2016.

Weight & the Prostate

oes gaining weight raise the risk of fatal prostate cancer?

Scientists tracked nearly 70,000 men in the Prostate, Lung, Colorectal and Ovarian Screening Trial for 13 years.

Those who were normal weight at age 20 and obese when they entered the trial at age 55 to 74 were twice as likely to die of prostate cancer than those who stayed normal weight. Those who were overweight at age 20 and obese when they entered the trial had roughly 2½ times the risk.

What to do: Lose (or don't gain) excess weight.

J. Natl. Cancer Inst. 2017. doi:10.1093/jnci/djw225.

Lindsay Moyer/CSPI, (middle row):















IN YOUR FACE! Calories everywhere you look

BY LINDSAY MOYER

alls, movie theaters, airports, coffee shops, ballparks, checkout aisles. Oversized snacks you didn't plan on eating are everywhere you turn. Who cares about the obesity and diabetes epidemics when companies can make a buck? 🥑

Häagen-Dazs Mint Chip Dazzler



1,170 calories A "portable three-scoop sundae." How convenient.

Regal Cinemas

Popcorn (large)



980 calories

Bonus: a free refill! Even a medium has 630 calories.

Cinnabon Classic Roll



880 calories

The classic mall calorie bomb.

Jamba Juice

Coconut Berry Bliss Smoothie (large)



590 calories

What do you expect from a 27 oz. serving?

Whole Foods

365 Organic Dark Chocolate bar



500 calories

Who needs candy bars in the checkout line.

Regal Cinemas Soft Pretzel

480 calories

Worse: Regal's Pretzel Bites & cheese (970 calories).

Sbarro

Pepperoni Pizza (1 slice)



480 calories

It's just 150 calories shy of a Pizza Hut Personal Pan Pizza.

Panera Chocolate Chipper Cookie



440 calories

Ready to order? Not before you pass Panera's sweets.

Starbucks

Blueberry Scone



420 calories

More than a brownie or jelly-filled doughnut.

Budweiser

Beer (20 oz.)



240 calories

Why so high? Draft beers at stadiums hit 20 to 24 oz.

Piece of Fruit



100 calories

Hungry? Look for fruit in the checkout aisle!

Green Beans with Parsley-Almond Pesto

- 1 lb. green beans, trimmed
- 1/4 cup smoked almonds
- small clove garlic, minced
- 1/4 cup flat-leaf parsley leaves
- 2 Tbs. extra-virgin olive oil
- 2 tsp. lemon juice
- 1/4 tsp. kosher salt
- 1. Steam the green beans until tender, 8-10 minutes.
- 2. Make the pesto: Combine the remaining ingredients in a food processor. Pulse until uniformly minced.
- 3. Toss the green beans with the pesto.

Per serving (1 cup): calories 140 | total fat 11 g sat fat 1 g | carbs 9 g | fiber 3 g | protein 4 g sodium 160 mg







Spiced Roasted Cauliflower

- Tbs. extra-virgin olive oil
- Tbs. tomato paste
- ½ tsp. paprika
- ¼ tsp. ground cumin
- ¼ tsp. ground coriander pinch of cayenne pepper
- tsp. kosher salt
- head cauliflower, chopped
- 1. Preheat the oven to 450°F.
- 2. In a large bowl, combine the oil, tomato paste, spices, and salt.
- 3. Toss the cauliflower in the oil mixture.
- 4. Roast on a lined, rimmed baking sheet until tender, 20-25 minutes.

Per serving (¾ cup): calories 100 | total fat 7 g sat fat 1 g | carbs 7 g | fiber 3 g | protein 3 g sodium 160 ma

Serves 4



Broccoli with Sesame Dressing

- broccoli crowns, cut into florets
- Tbs. reduced-sodium soy
- 1 small clove garlic, minced
- tsp. grated ginger
- 2 tsp. rice vinegar
- 2 tsp. toasted sesame oil
- tsp. honey
- 1. Steam the broccoli until tendercrisp, 2-3 minutes. Drain well.
- 2. Make the vinaigrette: Whisk the remaining ingredients together.
- 3. Toss the vinaigrette with the broccoli.

Per serving (¾ cup): calories 70 | total fat 2.5 g sat fat 0 g | carbs 9 g | fiber 2 g | protein 3 g sodium 170 mg

Serves 4





Veggie Nice!

From Spinach Pearl Barley Risotto to Black Bean Chili with Cilantro Sour Cream Sauce, 31 vegetarian main dishes from Kate Sherwood, Nutrition Action's Healthy Cook.

Visit NutritionAction.com/VeggieNice or send a check for \$16.99 and your name & address to CSPI-Veggie Nice, Suite 300, 1220 L St. NW, Washington DC 20005.

Restaurant Frauds & Finds

Is that dish really healthier?

BY LINDSAY MOYER & BONNIE LIEBMAN

hat's new on restaurant menus? Mostly mortal threats to your waist-line and arteries.

At least you can tell that a deep-dish pizza topped with hash browns, bacon, and cheese nachos is *probably* not a smart pick. But what about veggie sandwiches, bowls, grass-fed burgers, mini-desserts, and other healthy-sounding items? Which are true finds and which are frauds? (Memo to restaurants: Even most "finds" are far too salty.)

The information for this article was compiled by Leah Ettman.



Veggie-packed salads at The Cheesecake Factory? Who knew?

Salads that Dazzle

The Cheesecake Factory's six impressive Super Foods salads are indeed super...*if* you take home half. They start with a bed of greens and toss in things like beans, fruit, nuts, avocado, and whole grains (and, for an extra charge, grilled shrimp, salmon, chicken, or steak). Our faves:

- Almond-Crusted Salmon (salmon, kale, shaved brussels sprouts, arugula, avocado, quinoa, cranberries, radishes, shallot vinaigrette)—1,200 calories and 37 grams of protein.
- Kale and Quinoa (kale, quinoa, grapes, sweet red pepper, sunflower seeds, parmesan, lemon vinaigrette)—980 calories and 21 grams of protein.

The Factory's SkinnyLicious menu also offers a delicious French Country Salad (mixed greens, grilled asparagus, beets, goat cheese, candied pecans, vinaigrette) for only 550 calories, and a Fresh Vegetable Salad (asparagus, green beans, tomato, cucumber, roasted beets, apple, edamame, radicchio, romaine, white cheddar, pomegranate vinaigrette) for 390.

BJ's Restaurant & Brewhouse's Enlightened Superfood salads—Kale and Roasted Brussels Sprouts (440 calories) and The Super Salad (460)—follow the same playbook. Bravo!

Bottom line: Wherever you eat, go for salads loaded with flavor-packed veggies. Watching your weight? Watch the dressing.

Bowled Over

Plates are out, bowls are in. But a dish that packs an entire meal—vegetables, lean protein or beans, and whole grains—into one bowl can be a fraud or a find. A few examples:

- **Pei Wei.** "Noodles that nourish," promise signs inside the fast-casual Asian chain. What's so nourishing about a Noodle Bowl with 1,000 to 1,600 calories (about 3½ cups) of white or rice flour noodles, chicken or steak and shrimp, only a smattering of veggies, and enough sauce to hit 3,000 to 7,000 milligrams of sodium (two to four days' worth)?
- BJ's. Its Enlightened Superfood Quinoa Bowls—Roasted Salmon or Roasted Chicken and Spinach—pack about 1,000 calories (700-ish if you order a lunch portion). But at least you're getting whole grain quinoa and a few veggies.
- Sweetgreen. The salad chain's irresistible Shroomami Warm Bowl (wild rice, kale, beets, bean sprouts, basil, spicy sunflower seeds, warm portobellos, roasted sesame tofu, and miso sesame ginger dressing) weighs in at 640 calories. (Swap the raw sprouts for shredded cabbage.) Too high? Build your own salad.

Bottom line: Bowls are only a "find" if they're mostly veggies.



Load your bowl with veggies, not white rice or noodles.





How to eat a lettuce wrap? Peel back as you go.

Sparkle

Is soda too sweet and tap water too boring?

Olive Garden adds just a touch of sugar to its Mixed Berry Sparkling Water with whole berries (30 calories). Or try a BJ's Cucumber Mint Sparkling Water (20 calories).



Finally. Sparkling fruit and cucumber water on menus.

And Panera offers Spindrift's Lemon (0 calories) or Raspberry Lime (10 calories) canned sparkling waters with a dash of fruit juice. They sure beat sugary San Pellegrino cans that are sold there (and elsewhere).

Bottom line: If plain water won't do, try a low-calorie flavored sparkling water. It's far better than a soda.

Lettuce In

"Switch it up," says Which Wich, a chain with more than 400 locations in 39 states. One switch: a Lettucewich, which swaps the 280 calories of white flour in a "small" 7-inch sub roll for 15 calories of lettuce.

Likewise, Jimmy John's offers an Unwich that saves about 300 calories for an 8-inch sub. And at Bareburger, you can choose a collardgreen wrap instead of about 200 calories' worth of white flour.

(At Which Wich, you can also "Skinny My Wich"—scoop out the middle of your roll—which trims a small by about 100 calories.)

Bottom line: Forget the roll or flour wrap. Find a sandwich shop that surrounds its stuffings with something green.

It's a Wrap

"Piadinas are an authentic Italian street food" that are made with "fresh ingredients," says Olive Garden.

Don't be fooled by that thin wrap-like flatbread. You're getting a load of white flour and cheese, and just a smidgen of veggies, for about 650 calories (without soup or salad).

Expect 550 to 750 calories at BJ's. Applebee's Maple Bacon Chicken Piadini hovers around 1,000.



A piadina (like Applebee's) is no healthier than a panini...or any other white-bread sandwich.

And that's before you add the fries or chips (400 calories).

Bottom line: A piadina—like a panini—is no healthier than an ordinary white-bread sandwich.

Greener Grass?

"When we started Chili's, people called us the hamburger hippies," says the TV ad. "Maybe the name still fits—100% grassfed beef. New on any of our hand-crafted all-natural burgers."

You might prefer that the cattle that became your dinner grazed on grass. And some cuts of grass-fed beef may be leaner than grain-fed. But don't assume that grass-fed burgers are lighter.

Chili's grass-fed beef patty has the same calories (about 400), saturated fat (14 grams), and trans fat (1½ grams) as its regular beef patty. That means that an Oldtimer made with a grass-fed patty still packs 780 calories and 20 grams of sat fat (a day's worth). And that's before you add the 390-calorie side of fries. Urp.

Grass-fed beef is also showing up in supermarkets and at Outback Steakhouse, Chipotle, and other chains.

Bottom line: Roaming pastures may be better for cattle, but don't assume that grass-fed burgers are healthier for you.



A grass-fed burger may not be a healthier burger.

Veggie Good?

A veggie sandwich sure sounds healthy. But if you're not careful, you could end up with an oversized grilled cheese sandwich with just a few vegetables.

Take The Cheesecake Factory.

Its Veggie Melt offers "avocado, artichoke, roasted red pepper, tomato and kale with herbed goat cheese, mozzarella, fontina and parmesan cheeses on grilled multi-grain bread." But each order—three half-sandwiches-delivers 1,570 calories, 34 grams of saturated fat, and 3,010 milligrams of sodium. You're talking three McDonald's Big Macs.

Did we mention that there's no whole grain in the bread? (The company told us.) And that it gets smeared with butter (and maybe oil) before grilling? Or that the Melt comes with a 470-calorie side of fries? (Or you can

get a 190-calorie salad.)

Dave & Buster's Grilled Portobello & Veggie Sandwich (1,150 calories, including the small side of dressed greens) and the Corner Bakery Cafe's California Grille (700 calories) are better, but you're still beyond Big Mac territory.

Bottom line: Want veggies? Order a salad. Otherwise, you're probably getting mostly white flour, cheese, and grilling grease.

Dying for a sandwich? Half is enough. Today's half-sandwiches are as big as what we used to call, well, sandwiches.



Stick to half a sandwich...not 2 (or 3) halves.



"Light" menus are no guarantee, but they're always worth a look.

See the Light

Many chains offer just five or six "lighter" entrées. But a handful have

Seasons 52 has 40 locations in 18 states, but it's growing. Most of its entrées have around 500 calories or less. (Check the menu for outliers in the 700s.) But the chain doesn't just count calories. From Cedar Plank-Roasted Salmon (see photo) to Wood-Grilled Boneless Rainbow Trout to the seasonal Vegetarian Tasting plate—last fall it featured wood-grilled kohlrabi steak, vegan paella, asparagus, and fennel-roasted onion—it's a far cry from the usual chicken breast and steamed broccoli. The taste? To die for.

The Cheesecake Factory's SkinnyLicious menu also gets creative, with an impressive 20 entrées and salads that stop at 590 calories.

Just be sure to check the calories. Some Maggiano's Lighter Take and BJ's Enlightened dishes, for example, hit 1,000.

Bottom line: Head for the light...so you don't end up on the heavy side.

Mini Mouth

Mini. Shorty. Bite-size. Mini-desserts were a top trend in 2016, according to the National Restaurant Association.

Clearly, a mini does less damage than the usual 1,000-calorie full-size dessert or milkshake.

But healthy? Are you kiddin'?

Expect 650 to 700 calories in an Outback Steakhouse Double Chocolate Mini Dessert Parfait, a Yard House Mini Crème Brûlée, or an Uno Mini Macadamia Nut White Chocolate Chunk Deep Dish Cookie Sundae. Bonus: each has roughly a day's saturated fat and 10 teaspoons of (mostly added) sugar.

At Applebee's, the Hot Fudge Sundae Shooter has more calories (470) than a Mc-Donald's Hot Fudge Sundae (340). And the Chocolate Nut Brownie Shorty Shake winds up with nearly 700 calories.

On the lower end, the Mini Indulgences at Seasons 52 and the Dolcini at Olive Garden range from about 200 to 400 calories. For some people, that's not too bad (if you get just one). But if you'd otherwise skip any dessert, a mini on the menu is a

Bottom line: No matter how petite a mini dessert looks, don't even think about it before asking how many calories it delivers.



Nothing's mini about the calories in this Outback Mini Dessert Parfait.

RIGHT STUFF

Orange Orange



When it comes to nutrient-packed fruits, oranges are in the top 10 (along with guavas, watermelons, kiwis, papayas, grapefruits, kumquats, cantaloupes, lychees, and strawberries).

And around this time of year, oranges

are among the few fruits that promise a little in-season sunshine.

Now there's a new kid on the citrus block. When you're out hunting for clementines, oranges, and grapefruits, don't ignore the Cara Cara navel orange bin.

Cara Caras may be the perfect oranges: intensely sweet, lower in acid, juicy, no seeds. And that drop-dead gorgeous pink-grapefruit color. Then there's the 11/2 days' worth of vitamin C, 30 percent of a day's vitamin A (regular navels have just 2 percent), and 15 percent of a day's folate, for just 80 calories.

As for taste, think of a cross between a navel orange and a tangerine, with a hint of berry. Makes us go all weak in the knees.

Cara Caras—they were discovered in 1976 on the Hacienda Cara Cara plantation in Venezuela—are available from December through May.

And it's only January!

sunkist.com (among others)—(661) 290-8710

FOOD PORN



Piled On

Just what we needed. Applebee's All-Day Brunch Burger is served (spoiler alert) all day. How thoughtful.

"Seared in: bacon & onion," says the menu. "Piled on: fried egg,

crispy hashbrowns, American cheese and ketchup."

Yup. What's a burger without bacon, eggs, and hash browns on it? And in case you haven't had enough carbs from the white bun and potatoes, Applebee's serves fries on the side. What? No room for some pancakes or toast?

The burger alone has 29 grams (1½ days' worth) of saturated fat, 335 milligrams (a day's supply) of cholesterol, and 2,370 milligrams (1½ days' worth) of sodium.

With fries, you're talking 1,620 calories. That's like eating two McDonald's Big Macs, each topped with hash browns, plus an Egg McMuffin for dessert.

Eggs on a burger sound odd to you? It doesn't to IHOP (Denver Omelette Burger), or Denny's (Slamburger), or BJ's (Late Night Burger), or Chili's (Sunrise Burger).

"A great American bar and grill needs a killer burger," said Apple-

bee's in an August 2015 press release.

Can't argue with that.

applebees.com -- (888) 592-7753





Want to know if your dried herbs have anything left? Rub them between your fingers. If they smell aromatic, you're good to go. If you don't get much of anything, neither will your recipe.