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Glimmers of Light?

NEW CLUES TO WEIGHT GAIN & LOSS

Which diet can help people lose weight and keep it off? So far, no one has found a magic bullet.

“We had three decades of low-fat, and we had a decade of ‘Oh, wait, no, maybe low-carb,’ and then at the end of that we said ‘Oh, never mind, neither of them works,’” says Christopher Gardner, director of nutrition studies at the Stanford Prevention Research Center.

But several glimpses of new evidence are giving researchers renewed hope. They’re looking not just at how many calories people eat and burn, but at their genes, the microbes in their gut, how much they sleep, and more.

Here are some clues that may tip the scales in your favor.

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MEMO FROM MFJ

Loading the Dice



Loyal readers of *Nutrition Action* are certainly aware of the enormous body of scientific research showing that eating a diet that is richer in fruits and vegetables, whole grains, beans and nuts, seafood, and low-fat

dairy foods—and poorer in sugar drinks, burgers, sausage, pizza, burritos, chips, fries, ice cream, candy, baked goods, and salt—is part of the prescription for health.

Exercise regularly, throw in a bit of alcohol if you enjoy it, avoid smoking, and use a seat belt, and you're on the right track.

But what if that's not enough? I'd like to share a letter I received from Judy P., a reader in Toronto who probably follows a healthier lifestyle than 99 percent of us.

Here's part of her e-mail:

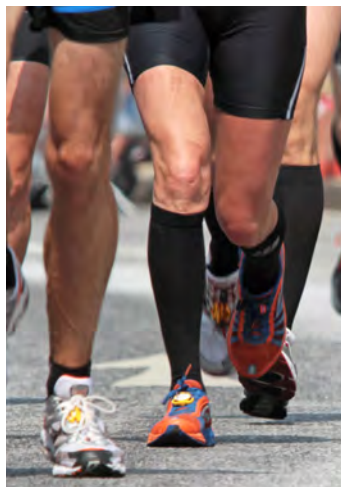
Almost every issue of Nutrition Action that I read includes recommendations on how to lead a healthy lifestyle in order to avoid a whole host of diseases: cancer, heart disease, high blood pressure, diabetes, etc. That makes absolutely good sense, but there is almost an implication that you can avoid all these diseases if you do the right things.

That can be a bit frustrating to someone like me, who did all the right things and still ended up with cancer and high blood pressure.

I have been the same weight all my adult life (5'6"—125 lbs.). For over 20 years I've been a non-smoking semi-vegetarian (mostly veggies, fruits, fish, and high-fiber carbs). I have never drunk pop. I drink mostly water, skim milk, green tea, and an occasional glass of wine. Every day I do strength exercises, flexibility training, and aerobics (I run from 7 to 10 km daily). I have done 10 marathons

and several triathlons over the last 15 years. I ski, skate, bike, swim, walk, garden, etc.

In short, I lead an active life, have a fulfilling family life, and YET...with no family history of cancer, two years ago at the age of 60 I developed breast cancer. I weathered it just fine and hope it won't come back, but now I have developed somewhat high blood pressure, despite eating plenty of produce and no high-sodium packaged or restaurant foods. The



A healthy lifestyle: an odds-changer, but no guarantee.

high BP is likely to be hereditary, courtesy of my dad.

So here's my point: Any number of "friends" challenge me, citing my example, saying "Why bother?" My only comeback, and one I truly believe, is that regardless of what eventually kills me, I have boundless energy and feel great every day.

The fact is that no one can guarantee that a stellar diet, ample exercise, and not smoking will translate into a long, healthy life.

Things get in the way. Genes, for example. Or environmental pollutants. Or accidents. Any or all of that can

undermine the best of habits.

And our DNA can sometimes inoculate us against the worst. Everyone knows someone who is in tip-top shape despite a lifetime of pepperoni pizzas and chain smoking.

That doesn't mean that what you eat and how active you are doesn't matter. A healthy lifestyle likely prevents thousands of cancers (and heart attacks, strokes, and cases of diabetes) every year. It just may not prevent yours.

It's all a matter of odds. In life, as in craps, there's no sure thing. But a good diet and an active lifestyle helps load the dice in your favor.

Michael F. Jacobson, Ph.D.
Executive Director
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Nutrition Action 2013 Index

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Glimmers of Light?

NEW CLUES TO WEIGHT GAIN & LOSS



Christopher Gardner is the director of nutrition studies at the Stanford Prevention Research Center and is an associate professor of medicine at Stanford University.

He has done research on weight loss, vegetarian diets, soy foods, and garlic. He is a member of the Obesity Society, the American Heart Association's Council on Nutrition, Physical Activity and Metabolism, and the scientific advisory board of the Culinary Institute of America. Gardner spoke to *Nutrition Action's* Bonnie Liebman by phone from Palo Alto, California.

Q: Why are you testing low-fat vs. low-carb diets for weight loss?

A: For decades, we said "Eat a low-fat diet to lose weight," and then the obesity epidemic kept going. So a bunch of people said "No, it has to be a low-carb diet," though we had no data to know if that was correct or not. So ten years later we have data. And if you pool all the studies, there's no difference in weight loss between low-fat and low-carb diets.

But even more disappointing, neither is very good for the average person. People aren't losing a lot of weight and keeping it off, regardless of which diet they

follow. You can argue about petty differences, but when you look at average weight loss, it's hugely disappointing.

Q: People lose only about five or ten pounds after a year?

A: Yes. But if you look at who lost a lot of weight and who lost very little weight, the range is stunning.

Q: Was that true in your trial?

A: Yes. Our A TO Z Weight Loss Study randomly assigned 311 overweight or obese premenopausal women to one of four diets. Atkins was the lowest-carb and Ornish was the lowest-fat. The Zone and the LEARN diets were in the middle.

After one year, the average weight loss was ten pounds for Atkins, six for LEARN, five for Ornish, and three and a half for The Zone.

Q: So Atkins was slightly better?

A: Yes, but no one's going to get excited

about ten pounds. For these women, who wanted to lose 15 to 100 pounds, we couldn't say "Congrats, the study's over. On average, you lost five or ten pounds. Everybody jump up and down." They'd say "I didn't even go down a dress size."

But what about the women in the study who lost 30 or 40 pounds? They went down multiple dress sizes. And what about those who tried their hardest and lost nothing or even gained a few pounds?

Q: How much did weight loss vary?

A: In every group, some women lost 40 or 50 pounds, and some gained five or ten pounds. So we have a 60-pound range of weight change over 12 months.

We wondered what could explain that difference. We found two small feeding studies suggesting that insulin-resistant people lost more weight on a low-carb diet, and people who were not insulin resistant lost more on a low-fat diet.

Q: If you're insulin resistant, your insulin doesn't work properly?

A: Yes. So we went back to our A TO Z data and did a post hoc analysis, which

isn't definitive because the study wasn't designed to look at insulin resistance. All we had were fasting insulin levels, which are a crude measure of insulin resistance.

We assumed that the third of the women with the highest fasting insulin were probably more insulin resistant, and the third with the lowest fasting insulin were probably less insulin resistant.

And we found that those who were more insulin resistant lost more weight on the

Are You Insulin Resistant?



There's no simple test, but you're more likely to be insulin resistant if you have the metabolic syndrome—that is, if you have any three of the five features below.

People with the syndrome have a higher risk of diabetes and heart disease. To lower your risk, cut calories, cut carbs—especially added sugars—and get moving (see *Nutrition Action*, Jul./Aug. 2012, cover story).

1. Waist size	Women: more than 35-inch waist Men: more than 40-inch waist ¹
2. Triglycerides*	150 or higher
3. HDL ("good") cholesterol*	Women: under 50 Men: under 40
4. Blood pressure	Systolic: 130 or higher or Diastolic: 85 or higher
5. Blood sugar*	110 or higher

* Fasting. ¹For some men, a 37- to 39-inch waist can be a risk factor.

Source: National Heart, Lung, and Blood Institute.

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Up at Night, Up in Weight?

Could lack of sleep or eating at night make you heavier?

■ **Sleep.** People who report sleeping less (usually 6 or less hours a night) are more likely to gain weight over the years than those who sleep more (7 or 8 hours).¹ But does less sleep *cause* weight gain?

To find out, researchers deprive people of sleep to see if they put on pounds. In a recent study, scientists allowed nearly 200 people to sleep from only 4 a.m. to 8 a.m. for the five consecutive nights they lived in the research lab. Thirty others were allowed to sleep anytime from 10 p.m. to 8 a.m. during their stay in the lab.

The results: on average, the sleep-restricted people ended the study two pounds heavier. Data from a subgroup suggested that they ate an extra 550 calories between 10 p.m. and 4 a.m. In contrast, those whose sleep was not limited gained no weight.²

Why might less sleep make people eat more? “We’re currently examining the effects of sleep loss on changes in brain activity in areas related to reward and impulse control,” says lead author Andrea Spaeth of the University of Pennsylvania.

Other studies have found that lack of sleep raises blood sugar, makes insulin less effective, or boosts ghrelin, a hormone that stimulates appetite.^{3,4}

■ **Night eating.** Researchers are just starting to look at whether it matters *when* you eat.

For example, scientists kept 160 people in a research lab with unlimited free access to food from a vending machine for three days. Those (roughly a third) who ate between 11 p.m. and 5 a.m. on at least one night gained an average of 14 pounds over the next three years. Those who didn’t eat during those hours gained only 4 pounds.⁵

“It’s not necessarily the timing of the eating that mattered, because those who ate at night consumed about 300 more calories than the others,” explains lead author Marci Gluck of the National Institute of Diabetes and Digestive and Kidney Diseases in Phoenix.

“There’s a lot of media attention paid to the idea that if you eat more late at night, you don’t burn off those calories,” notes Gluck. “I don’t know of studies showing that. In our study, the night eaters burned the same number of calories as those who didn’t eat at night.” They just ate more food.⁶

We need more research to know if eating at night causes weight gain, says Gluck. But, she cautions, “from a psychological perspective, nighttime is a trigger for some people to eat when they’re alone.”

¹ *Am. J. Epidemiol.* 2013. doi:10.1093/aje/kwt180.

² *Sleep* 36: 981, 2013.

³ *Diabetes* 59: 2126, 2010.

⁴ *Ann. Intern. Med.* 141: 846, 2004.

⁵ *Am. J. Clin. Nutr.* 88: 900, 2008.

⁶ *Obesity* 19: 319, 2011.

low-carb Atkins diet than on the low-fat Ornish diet, which is higher in carbs. Those who weren’t insulin resistant did no better on any one diet.

Q: Is that because they stuck to their diets better?

A: Possibly. We think some people have a harder time adhering to a diet because it’s the wrong one for them metabolically.

Q: How can people tell if they’re insulin resistant?

A: It’s not easy to find out, but you’re more likely to be insulin resistant if you meet the criteria for the metabolic syndrome [see p. 3].

It’s exciting because it may explain part of the difference between success and failure.

If you just randomized everyone to one of several diets, the successes and the failures might cancel each other out and make it look like no diet was better than any other.

If you tease them apart, there’s a bigger difference.

Q: How much more could someone lose on the right diet?

A: We don’t know. It may be only an extra five pounds, but it could be considerably more. We won’t know until we finish our new year-long study on 600 people.

Q: Is insulin resistance common?

A: Yes. Roughly a third of the women in the A TO Z Study met the criteria for the metabolic syndrome.

So much of the country is now overweight or obese. That means that more people are insulin resistant. So if a low-fat diet—which is high in carbs—is worse for people who are insulin resistant, that diet is less appropriate now than it was before the obesity epidemic.

Q: Shouldn’t people with insulin resistance cut back on carbs anyway?

A: Yes. Cutting carbs, and especially added sugars, can help lower triglycerides, which is part of the metabolic syndrome.

Q: Does insulin resistance alone explain why people lose so little weight in most studies?

A: Not entirely. Another issue is that when we put people on low-carb or low-fat diets, we’re not very good at differentiating the diets.

If you look at the biggest and longest study—the Pounds Lost Study—it randomly assigned 800 people to four different diets for two years. The original design was elegant because the four diets had two levels of fat, two levels of protein, and four levels of carbs. But people didn’t adhere to the diets well.

Q: So in practice, the four diets weren’t that different?

A: Right. The weight-loss trajectories were identical in the four groups, and the diets eaten by all the participants were pretty similar. So why would you expect a different outcome?

In our new large study, we’re pushing people to huge extremes—Atkins, Ornish, even beyond that—but we’re anticipating and allowing them to scale it back, because people always do in these studies.

We’re asking them to go as low as they can in either fat or carbs. They haven’t been on the diets for 12 months yet, but boy, at six months we’re seeing really different diets.

Q: When will you have results?

A: Put it on your calendar to call me in 2017, and I’ll tell you what happened. It’ll be a long time before we have all 600 people on the diets for a year.

Q: What are the participants eating?

A: They’re high-quality diets. Some studies have tested a great low-carb diet and a crappy low-fat diet that is high in added sugars. Or they tested a great low-fat diet, full of plant foods, but the low-carb diet was whipped cream and butter. That’s not fair. If you want to compare diets fairly, you have to test the best of both.

Fattening Microbes?

Can our gut bacteria help explain why we're fat or thin?

In one of the latest advances, scientists studied gut bacteria from pairs of twins in which one sibling was lean and one was obese.¹ They transplanted the lean twin's bacteria into one group of mice and the obese twin's bacteria into another.

A month later, the mice that got the lean twin's bacteria were still lean. But the mice that got the obese twin's bacteria were fatter, even though they ate no more food.

Next came what the scientists called "the battle of the microbiota."

They housed each mouse that had been given what one could call the "slimming microbes" in a cage with a mouse that had been given the "fattening microbes." (The mice had received the microbes only five days earlier, so those given the fattening microbes hadn't yet gained weight.)

Since mice eat each others' feces, their gut microbes got mixed. Which microbes won?

The slimming ones. They invaded the mice with fattening microbes, so all the mice stayed lean. One explanation: mice with fattening microbes (and obese people) have fewer and less diverse microbes in their gut than mice with slimming microbes (and lean people).²

"We think the lack of diversity leaves open niches...that can be filled by microbes associated with leanness," explained Jeffrey Gordon, director of the Center for Genome Sciences & Systems Biology at

Washington University in St. Louis, according to the university's Web site.

But there's a catch: the slimming microbes invaded mice with fattening microbes *only* if the mice with fattening microbes ate a diet that's high in fruits and vegetables and low in saturated fat.

studies disagree.^{2,3} What's more:

- Researchers put 12 obese people on a low-calorie diet for a year. As they lost weight, they acquired *Bacteroidetes* and lost *Firmicutes*.⁴

- Scientists overfed 12 lean and 9 obese people for three days. Bacteria didn't

change in the obese people, but when the lean people ate 3,400 calories a day, their *Firmicutes* increased and their *Bacteroidetes* decreased.

What's more, the lean overfed people who had a 20 percent increase in *Firmicutes*—and a 20 percent drop in *Bacteroidetes*—absorbed 150 more calories per day from their food.⁵

How do microbes affect weight gain? The bacteria in Gordon's lean mice digested more fiber, so they gave off more short-chain fatty acids than the bacteria in the obese mice. Short-chain fatty acids may cause less fat to accumulate in fat cells, boost calorie burning, and increase satiety hormones.³

"It's often harder to

translate results across species than you might expect," cautions co-author Rob Knight, a microbiologist at the University of Colorado.

"But it's possible that we could eventually prevent or treat obesity by giving people the right microbes and the right diet."

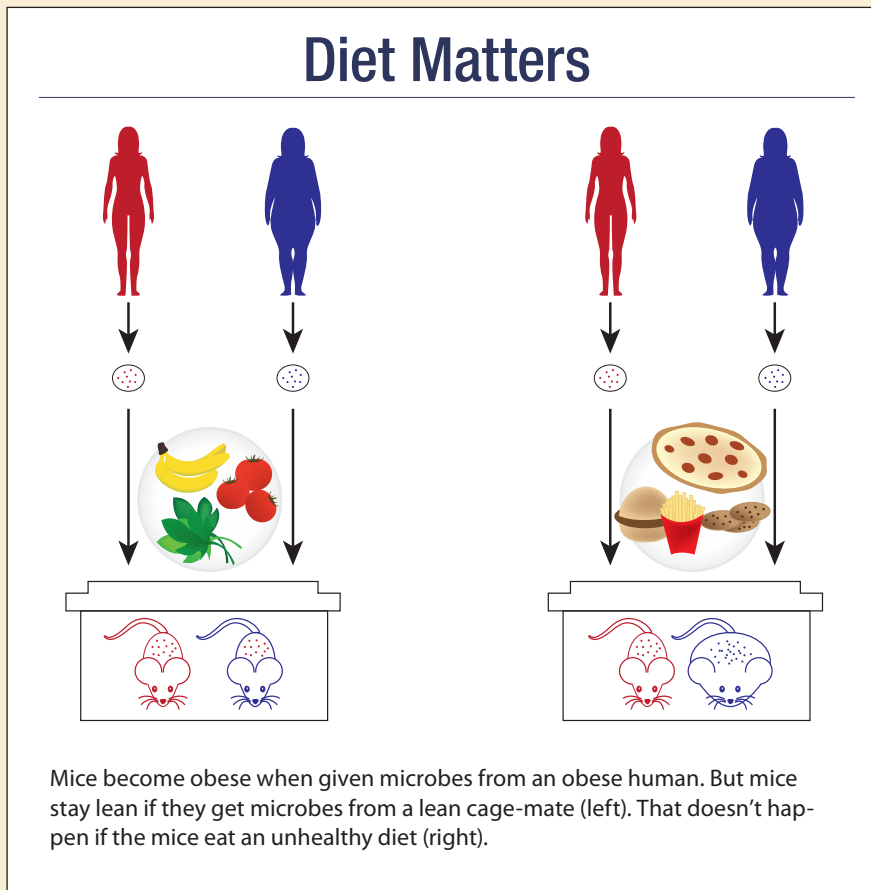
¹ *Science* 341: 1079, 2013.

² *Nature* 457: 480, 2009.

³ *Science* 341: 1069, 2013.

⁴ *Nature* 444: 1022, 2006.

⁵ *Am. J. Clin. Nutr.* 94: 58, 2011.



"Eating a healthy diet encourages microbes associated with leanness to quickly become incorporated into the gut," says Gordon. A diet high in saturated fat and low in fruits and vegetables "thwarts the invasion."

Of course, mice aren't humans. But preliminary findings in people are intriguing.

For example, some studies find that *Bacteroidetes* bacteria are more common in lean people, while *Firmicutes* bacteria are more common in the obese, though other

people to eat wheatberries, barley, whole grain oats, steel cut oats.

And we advise people on both diets to minimize or eliminate added sugars.

Q: Why cut added sugar for everyone?

A: To keep the diets high quality. There are no nutrients in all those sugary products. Sugary processed packaged stuff isn't

> > > >

The Bottom Line

Until we know more about diet and weight loss, eat a diet that's based on the Omni-Heart & DASH studies (see *NAH*, Oct. 2009). It's rich in veggies, fruit, and fiber, and low in sugar, carbs, and saturated fat. A 2,100-calorie diet should have:

		Servings	
Vegetables & Fruit (½ cup, 1 cup greens, 1 piece fruit)	11		
Grains (½ cup pasta or rice or cereal, 1 slice bread)	4		
Low-fat Dairy (1 cup milk or yogurt, ½ oz. cheese)	2		
Legumes & Nuts (½ cup beans, ¼ cup nuts, 4 oz. tofu)	2		
Poultry, Fish, Lean Meat (¼ lb., cooked)	1		
Oils & Fats (1 Tbs.)	2		
Desserts & Sweets (1 tsp. sugar, 1 small cookie)	2		
Wild Card Poultry, Meat, Fish OR Oils & Fats OR Grains OR Desserts & Sweets	1		

ferences hold up in our new study.

Q: So genes may make people respond better to one diet or another?

A: Right. And we're looking at the microbiota—the microbes in your body, especially in your gut.

We have two simple hypotheses. One is that different microbiota profiles might help to explain differences in adherence to the diets and therefore differences in weight loss. The second is that going on a low-fat or low-carb diet might change the microbiota.

Q: Why would a diet change the microbes in a person's gut?

A: The low-fat diet is going to have more fiber and good fiber, so it might have a beneficial effect on the microbiota. I don't know if that's true yet. We're

collecting poop as we speak. Then my colleague, Julie Parsonnet, a professor of medicine at Stanford, will profile the gut bacteria in the samples.

Q: What leads to healthy microbiota?

A: Healthy microbiota thrive on a high volume of diverse fiber. So we're getting back to eating more plant foods. Another colleague, Justin Sonnenberg, an assistant professor of microbiology and immunology at Stanford, studies the effect of diet on microbiota in mice.

For example, when he feeds the mice a “no fiber” sugar diet, their microbiota deteriorates rapidly. On a low-fiber diet, their microbiota does a little better. But the mice fed a diet with large amounts of diverse fiber maintain a healthy microbiota. The animals fed no- and low-fiber diets recover to a healthy state once they go back to a high-fiber diet.

Q: Which foods have diverse fiber?

A: Whole grains, beans, vegetables, and fruit. And you won't have to wait until 2017 for those results. We just did a pilot study where we collected poop from 100 people. In six months, we'll see if it has changed.

Q: Are we at the point where we can tailor a diet to the individual?

A: No. But we all know two people who tried to follow the same diet the same way and one succeeded and one failed miserably. And now we've got insulin resistance, genotyping, microbiota. So I think we're starting to untangle some of that mystery.

Q: What advice do you have for people while we're waiting for more results?

A: At the moment, it's still going to boil down to eat less added sugars. Whether you do low-carb or low-fat, when we focus on quality, we ask everybody to eliminate added sugars to the degree possible.

That means less processed packaged food and more cooking. I tell people to go to farmers markets more, because those words are somehow more intuitive than telling them to add up how many grams of unsaturated fat, how many grams of fish oil, how many grams of fiber, soluble or insoluble, glycemic index or load...my brain's on overload.

So I say “Go to the farmers market and buy what's fresh.” 🌱

real food. Once people figure out what their low-carb or low-fat level is, they need a high-quality diet that they can follow for the rest of their lives. Processed sugary foods are not high quality.

Q: Is the low-carb diet an Atkins diet?

A: No, but it's similar. All the participants take eight one-hour classes to learn what to eat. And we're telling people on both diets to eat a salad every single day. The carbs in salads aren't that high. It's a lot of water and a lot of nutrients.

And you can make salad low-carb and high-fat by putting nuts and seeds and avocados and real salad dressing on it. So they're getting low-carb and diverse fiber at the same time.

Q: What do you mean by high quality?

A: We're looking for quality on several levels. We're pushing environmental sustainability as well as health. So we're going for organic and seasonal vegetables and fruits, pasture-raised chicken and eggs, and grass-fed beef or pork. But if those are beyond their financial means, the key is minimally processed whole foods—chicken, not chicken nuggets.

Q: So people can eat meat and cheese, not just chicken and fish?

A: Yes. The low-carb diet is high in unsaturated fats like avocados, nuts, seeds, and regular salad dressing, but it's also pretty heavy in animal products. We emphasize fish, especially from the Monterey Bay Aquarium's list of sustainable seafood.

If they want cheese, we'd say don't go for the Kraft Singles. Go for some cheese from grass-fed cows at your local farmers market, and don't have a lot of it.

GENES, MICROBES, ETC.

Q: Are you looking at genetic differences between the groups?

A: Yes. In earlier studies, we identified a genotype for people who respond to a low-carb diet and a genotype for those who respond to a low-fat diet.

Using data from our A TO Z Weight Loss Study, we found that women who were matched to the right diet—say, women with low-carb-responsive genes who were assigned to a low-carb diet—lost more weight than those who were mismatched. We want to see if those dif-



Now Hear This...

Too much waist or weight and too little exercise may lead to hearing loss.

Researchers tracked roughly 68,000 female nurses who were 25 to 42 when they entered the study in 1989. In 2009, the risk of hearing loss was 11 percent higher in those who had a waist measuring 31 to 35 inches in 1993 than in those with a waist less than 28 inches. The risk was 27 percent higher for those who

Hear, hear. Go for a walk.

had a waist above 35 inches. The risk was also higher for overweight or obese women than for normal-weight women.

Women who were more active had a lower risk of hearing loss. For example, those who walked at least two or three hours a week had an 8 percent lower risk than those who walked less than one hour a week, regardless of their weight. Women who walked at least 4 hours a week had a 13 percent lower risk.

Scientists don't know how extra pounds and inactivity may cause hearing loss. One possibility: both may constrict tiny arteries that supply blood to the inner ear, damaging cells that convert sound vibrations into nerve impulses.

What to do: If you're overweight, cut calories and avoid sugary beverages. And take a walk, go dancing, or play some tennis or golf. Anything that gets you moving is a step in the right direction. Do we need to say that again a little louder?

Am. J. Med. 2013. doi:10.1016/j.amjmed.2013.04.026.

Vitamin D and Muscle

In earlier studies, vitamin D boosted muscle strength and reduced the risk of falls in older women who had low blood levels of vitamin D. A new pilot study may explain why.

Researchers looked at 21 older women (their average age was 78) with vitamin D levels that averaged 18 ng/mL, which is low, though not deficient. The women were considered at "moderate risk" for disability based on a timed 13-foot walk, a timed chair-rise test, and a balance assessment.

The participants were randomly assigned to take either a placebo or 4,000 IU a day of vitamin D. (That's the highest safe daily intake, says the Institute of Medicine of the National Academy of Sciences.)

After four months, thigh muscle fiber size had increased

by 10 percent in the vitamin D takers and decreased by 7 percent in the placebo takers.

The vitamin D takers did no better on tests of muscle strength, though, possibly because a statistically significant change is difficult to detect in a small pilot study.

What to do: Shoot for the Recommended Dietary Allowance for vitamin D (600 IU a day for adults up to age 70 and 800 IU a day for people over 70). The U.S. Preventive Services Task Force also recommends vitamin D—along with exercise and physical therapy—in adults aged 65 and older who are at risk for falls.



J. Clin. Endocrin. Metab. 2013. doi:10.1210/jc.2013-2820.

Name that Herb

There's a good chance that the black cohosh, Echinacea, ginkgo, St. John's wort, and other botanical supplements in your medicine cabinet may not be what the labels say they are.

Researchers at the University of Guelph in Ontario, Canada, bought 44 single-ingredient herbal supplements manufactured by 12 different companies from stores in the Toronto area and through the mail from distributors in the United States. All the supplements were available in both countries.

Using a gene-testing technique called DNA barcoding to identify plant species, the researchers found that 68 percent of the supplements contained a different botanical than the one listed on the label.

What's more, 59 percent contained plant material not listed on the label and 9 percent contained only rice or wheat and none of the herbs listed on the label.

One supplement labeled St. John's wort consisted only of senna, a laxative.

"We suggest that the herbal industry should voluntarily embrace DNA barcoding for authenticating herbal products," the Guelph scientists urged.

What to do: If you buy herbal supplements, don't assume that you're getting what the label says.

BMC Medicine 11: 222, 2013.

Stick to Your Ribs

Looking for a breakfast that will keep you full until lunchtime? Give oatmeal a whirl.

Researchers gave 48 people a breakfast of either Quaker Old Fashioned Oatmeal or, on another day, Honey Nut Cheerios. Both breakfasts had 360 calories, including the 110 calories in about 1½ cups of fat-free milk.

After eating the oatmeal, the participants reported feeling less hungry over the next four hours than they did after eating the Cheerios.

That could be because the oatmeal had more beta-glucan—a viscous, gummy fiber—than the Cheerios.

What to do: If you want a breakfast that holds you until lunch, try oatmeal. 🍌

J. Am. Coll. Nutr. 32: 272, 2013.

How Bittersweet It Is

Sorry. That chocolate bar isn't the next superfood.

BY DAVID SCHARDT

“Chocolate may help keep brain healthy,” proclaimed the press release from the American Academy of Neurology earlier this year. “Eat chocolate, lose weight,” announced Fox News Magazine in 2012. But before you stock your medicine cabinet with chocolate bars, keep reading.

“Many of us crave chocolate, but we also feel guilty about its calories and fat,” says Julia Hormes, an assistant professor of psychology at the State University of New York at Albany and an expert on cravings.

“I want it, but I shouldn't have it. It's taboo, but it's also really appealing. That's the ambivalence we feel about chocolate.”

No wonder the frequent chocolate-is-good-for-you stories in the media are so irresistible. But is chocolate *really* good for us?

Flavanols 101

Cocoa powder is the non-fat portion of the cocoa bean. If you combine it with cocoa butter (the fatty part of the bean) and sugar, you get chocolate. Add milk and you get milk chocolate.

The cocoa bean is one of the richest food sources of a group of phytochemicals (“phyto” means plant) called flavanols. If chocolate is good for you, it's probably because of the flavanols.

“Other foods, such as tea, red wine, berries, and some fruits, especially the skins of apples, contain flavanols,” points out Naomi Deirdre Fisher, an associate professor of medicine at the Harvard Medical School.

“It just so happens that the cocoa bean is particularly endowed with very high concentrations.”

But the flavanol content takes a hit when raw cocoa beans are converted into chocolate. How big a hit depends on how the cocoa is processed.

“Flavanols are bitter tasting, so to make cocoa more palatable, chocolate manufacturers roast, ferment, pulverize, and sometimes alkalize the beans or cocoa,” says Kevin Monahan, a physiologist and associate professor of medicine at the Penn State College of Medicine in Hershey.

“Unfortunately, this processing can destroy a lot of the flavanols.”

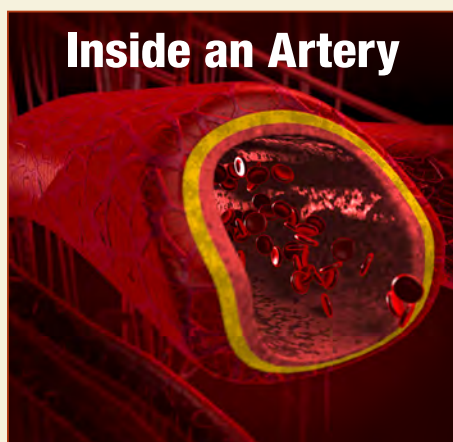
“Even something labeled ‘dark chocolate’ may or may not be a good source of flavanols,” notes Monahan. “It depends on how the beans or cocoa has been processed.”

So the question isn't just whether flavanols are good for you, but whether you can get enough of them from eating chocolate without consuming too many calories.

Cardiovascular Disease

Take people who are free of cardiovascular disease and ask them what they eat. Then, years later, find out if they've had a heart attack or stroke or have high blood pressure.

“Generally, those who report consuming the most chocolate at the start of the study are less likely to later be diagnosed with cardiovascular disease,” says Monahan.



A healthy endothelial lining releases enough nitric oxide to help arteries relax.

In two Swedish studies, for example, people who ate the most chocolate had a lower risk of stroke or a fatal heart attack than those who ate the least.^{1,2} (The “most” was about two ounces a week in one study and at least twice a week in the other.)

“That makes chocolate sound great,” says Monahan. “But those studies are limited because they're observational. You don't know if the result is an effect of eating chocolate, or if it has something to do with other factors that differ in people who eat chocolate.”

It could be that someone who eats chocolate every week is demonstrating restraint and willpower, says Catherine Kwik-Urbe, director of research and development for Mars Symbioscience, a scientific division of the candy giant that makes Snickers, M&M's, and other chocolates.

“So what we may actually be seeing is evidence of a disciplined approach to health and lifestyle that's reflected in the food choices they make, as opposed to the chocolate itself being the cause of their good health.”

That's why scientists have conducted dozens of randomized controlled trials during the past decade in which they compared (flavanol-rich) dark chocolate to (flavanol-free) white chocolate, or they compared flavanol-enriched cocoa to low-flavanol cocoa. If flavanols—rather than something else about people who consume flavanols—matter, those studies should pick it up.

■ **Blood flow.** “Large amounts of cocoa flavanols have consistently improved endothelial function in studies in healthy young people, in patients with coronary artery disease, and in people with diabetes or high blood pressure,” says Monahan.³

Endothelial function is a measure of how an artery responds to an increase in blood flow. (The endothelium is the inside lining of blood vessels.)

“The endothelium is a barometer of the health of your blood vessels,” says Joseph Vita, a professor of medicine and senior staff cardiologist at the Boston University School of Medicine.

Take a Powder



Want cocoa flavanols from food? Try an unsweetened cocoa powder.

Processing cocoa beans destroys flavanols. How much is lost depends on the beans and the processing.

Since there is no standard method of analyzing for flavanols yet, and since most manufacturers don't seem eager to disclose how much—or how little—their products contain, consumers are pretty much left in the dark.

“Even labeling a chocolate bar as having, say, ‘70% cacao’ isn’t a reliable guide to the amount of flavanols,” says Catherine Kwik-Urbe of Mars Symbiosci-

ence, a research division of the chocolate manufacturer. “You can’t tell how heavily that cocoa was fermented or processed, both of which can destroy flavanols.”

Last year, the European Food Safety Authority (the European Union’s equivalent of the Food and Drug Administration) concluded that it takes at least 200 milligrams of flavanols to improve blood flow. Most studies of cocoa have used far more than that.

How to get 200 mg? Two ounces of dark chocolate would probably do it. (That was the average in a recent analysis of Hershey’s Special Dark, Lindt Excellence 70% Cocoa, and Dove Promises Dark Chocolate.) But it will cost you 300+ calories.

“It would be unfortunate if people consumed hundreds of calories a day from confectionery chocolate, thinking they’re

helping themselves,” says Harvard flavanol researcher Naomi Deirdre Fisher.

You could also opt for the 70-or-so calories in half an ounce of baking chocolate. But your best bet might be two tablespoons of an unsweetened pure cocoa powder like Hershey’s or Nestlé Toll House, which have around 20 calories. Try mixing it into your coffee, warm milk, oatmeal, or yogurt.

Milk chocolate has less cocoa and more sugar than dark chocolate, so you’d need 10½ oz. (almost 1,600 calories’ worth) to give you 200 mg of flavanols.

Many cocoa mixes, like Swiss Miss, contain cocoa that has been “processed with alkali” (it’s also called “Dutch-process”). That slashes the flavanols to about 3 mg per serving. And white chocolate, which is mostly cocoa butter and sugar, contains no cocoa, so it has no flavanols.

To get 200 mg of flavanols from chocolate, it takes...



Cocoa Powder 1¾ Tbs.	Baking ½ oz.	Semi-sweet Chips 1½ oz.	Dark 2 oz.	Syrup 1 cup	Milk 10½ oz.
20 cals	70 cals	200 cals	320 cals	840 cals	1,580 cals

Source: *J. Agric. Food Chem.* 57: 9169, 2009.

“That’s because it’s one of the first things to go wrong on the path to atherosclerosis, which is the underlying cause of heart attack and the most common form of stroke. If your arteries are stiff, that means your heart has to work harder to pump the blood out.”

Flavanols seem to increase the body’s ability to synthesize nitric oxide, which triggers the dilation of arteries.

“Relaxing, or dilating, is good because it’s the way to get more blood, and more oxygen, flowing,” notes Monahan. “It’s like adding an extra lane to a highway so that more cars can get through.”

In a study funded by chocolate maker Hershey, Monahan and his colleagues found that blood flow in the arteries

increased within two hours after older people consumed cocoa flavanols in a beverage, compared with another time when they got a placebo drink.⁴

But Hershey’s milk chocolate division may not have been jumping for joy. Blood flow improved in people given high doses of flavanols (180, 465, or 1,095 milligrams), but not in those who got 70 mg. The classic 1½ oz. Hershey’s Milk Chocolate bar contains about 25 mg of flavanols.

Last year, the European Food Safety Authority approved a health claim for cocoa and chocolate and endothelial function after concluding that 200 mg or more of flavanols could “help maintain endothelium-dependent vasodilation, which contributes to normal blood flow.”

(The EFSA is the equivalent of the U.S. Food and Drug Administration.)

■ **Blood pressure.** Improved endothelial function could explain why cocoa or chocolate that contained large amounts of flavanols produced “a small but statistically significant effect in lowering blood pressure by 2-3 mm Hg in the short term.”

That’s what the Cochrane Collaboration, an international network of scientists who evaluate the research for medical therapies, concluded in 2012 after reviewing 15 randomized controlled trials that lasted from 2 to 18 weeks.⁵

But the trials tested an average of 560 milligrams of flavanols a day. You’d



have to eat 5½ ounces of dark chocolate to get that much.

The European Food Safety Authority hasn't been impressed with the research. The evidence is "insufficient" for chocolate manufacturers to claim that cocoa and chocolate can lower blood pressure, it declared.

Weight Loss

"Eat chocolate, lose weight," claims weight-loss author Cynthia Sass. "A new study by the University of California, San Diego, found that frequent chocolate eaters weigh less, despite consuming more calories," she wrote in Fox News Magazine.

Many people believe that, says chocolate researcher James Greenberg, an associate professor of health and nutrition sciences at Brooklyn College in New York.

"It's based on less-than-rigorous cross-sectional studies supposedly showing that those who eat more chocolate weigh less and those who eat less chocolate weigh more."

But cross-sectional studies—which take a snapshot in time—can't determine what leads to what, says Greenberg. To get a better handle on that, you need to follow people over time.

To do that, Greenberg analyzed data on chocolate consumption from the Atherosclerosis Risk in Communities (ARIC) study. More than 12,000 residents of North Carolina, Minnesota, Maryland, and Mississippi aged 45 to 64 were weighed in the late 1980s and were asked, among other things, how often they ate a serving of chocolate. Six years later, they were weighed and asked about chocolate again.⁶

"The more frequently someone ate chocolate, the more weight they gained," says Greenberg. "And those who ate the most chocolate gained the most weight."

It didn't take much, either. People who consumed just an ounce of chocolate at least once a week gained an average of 2.4 pounds over the six years.

That's consistent with the results from a small randomized trial of 91 German men and women. Those given about an ounce of chocolate to eat every night after dinner gained almost two pounds over a three-month period, while those given about a quarter of an ounce gained no weight.⁷

So why do cross-sectional studies seem



"Processed with alkali" or "Dutch-process" means almost no flavanols in the chocolate.

to show that people who eat more chocolate weigh less?

"Some heavier participants in the studies are eating less chocolate because they're trying to lose weight after having a heart attack or stroke, or after being diagnosed with a disease like diabetes," Greenberg explains. "That makes it look like people who eat more chocolate weigh less. But if researchers exclude people who have obesity-related illness, those who eat more chocolate don't weigh less."

Brain Health

Last year, a Columbia University researcher whimsically reported that the number of Nobel Prize winners in a particular country is "powerfully correlated" with the amount of chocolate that country consumes.⁸

That hardly proved cause and effect, noted other researchers, since a country's chocolate consumption is correlated with a long list of unrelated things—the number of IKEA stores, for instance.⁹

Still, there could be something to the link between chocolate and the brain, at least for some people.

"We know that

flavanols and the compounds they're metabolized into can cross into the brain and improve blood flow there," says Harvard flavanol researcher Naomi Deirdre Fisher.

"And we're learning from animal studies that flavanols may also promote neurogenesis, which is the development of nerves, as well as improve nerve function and the connections between nerves."

Mars is hot on the trail. "We now have emerging evidence that cocoa flavanols may improve cognitive function in some people, though this is still a very early area of research," says Mars Symbioscience researcher Catherine Kwik-Urbe.

In a study funded by Mars, she and her colleagues gave 90 Italian men and women with mild cognitive impairment a daily cocoa drink with one of three levels of flavanols: 990 milligrams, 520 mg, or 45 mg (which served as the control).¹⁰

(Mild cognitive impairment is memory decline beyond what normally occurs with age. While MCI is not severe enough to interfere with daily life, people with the condition are about three to five times more likely to develop dementia than people without MCI, according to the Alzheimer's Association.)

After two months, those who were consuming 990 mg scored higher on a test of verbal fluency than those getting 45 mg. Asked to name as many nouns as they could that began with a certain letter within 60 seconds, the high-flavanol group averaged 28, while the low-flavanol group averaged 22. The 520 mg group did no better than the 45 mg (placebo) group.

But both higher groups did better on a test of attention, organization, and memory. Asked to draw a line between a series of consecutive numbers, those getting 990 mg or 520 mg of flavanols a day completed the task in an average of 39 seconds, while those getting 45 mg took 53 seconds.

But when 71 healthy Australian men and women aged 40 to 65 consumed a beverage with 250 mg or

Bottom Line

■ Large amounts of flavanols can improve blood flow. There is also promising—but far from definitive—evidence that they can lower blood pressure and improve brain function.

■ The more chocolate people eat, the more weight they gain. So you're better off getting your flavanols from unsweetened cocoa powder.

Loco for Cocoa

Prefer getting your flavanols from a supplement? Not all of them are equal. Here are three that you may have seen.



CocoaVia

Mars Inc. gave up trying to market flavanol-rich chocolate candy as a health food in 2009. These days it sells cocoa flavanols as dietary supplements.

“To get the higher level of flavanols that we know to be efficacious,” says the company’s Catherine Kwik-Uribe, “we offer consumers choices of products that are more nutritionally responsible.”

That would be Mars’ line of CocoaVia capsules and powders.

Each serving (two capsules or one packet of powder) contains 250 milligrams of cocoa flavanols. The capsules have 5 calories and cost \$1.00 a serving. The powder—Mars recommends that you mix it into coffee, milk, yogurt, oatmeal, or protein shakes—has 30 calories and costs \$1.33 a serving. (The powder contains cocoa that has been processed with alkali, but Mars adds a cocoa extract and guarantees that each packet delivers 250 mg of flavanols.)



Cocoa Capsules

“Get all the natural health benefits of raw cocoa without feeling any of the guilt,” says mail-order/online marketer Swanson about its raw cocoa.

According to the label, each capsule contains 400 milligrams of cacao (cocoa). But that means less than 400 mg of flavanols.

How much less? The label doesn’t say, since flavanol levels “may vary from batch to batch,” according to the company. (“We are sorry for any disappointment this may cause,” Swanson told us in an e-mail.)

If Swanson’s (or any other company’s) raw cocoa is anything like Hershey’s unsweetened cocoa powder, the recommended dose (one to two capsules a day) would provide just 9 mg or 18 mg of flavanols. Cost? Five or ten cents a day, about 10 times what you’d pay for the same amount of a grocery-store cocoa powder like Hershey’s or Nestlé Toll House.

Clearly, more studies on flavanols and cognition are needed.

“There are reasons to be hopeful, to suspect that there’s benefit, based on test tube studies, animal studies, human population studies, and a few clinical trials,” says Fisher.

But solid evidence is lacking, she adds. “We haven’t administered flavanols for five years to a set of healthy people over 65 and seen that there was less cognitive decline in those who had higher con-



CocoaWell

Cocoa Science bars are organic and made from sustainably grown fair-trade beans, says the company. That’s great. But each bar also has more calories (240) than a similar-size Hershey’s Milk Chocolate bar (210).

Why does the label list just 120 calories per serving? CocoaWell uses a ¾ oz. half-bar serving (instead of chocolate’s 1½ oz.) by calling itself a “dietary supplement” rather than a food.

What do you get in the way of cocoa flavanols for your 240 calories? The label lists only about 6 mg from an added cocoa extract. (The bar’s “Pure Plant Flavanol Complex” provides about 80 mg of flavanols from tea and the herb catechu, not cocoa.)

As for the amount of flavanols in the bar’s main ingredient, chocolate: “We currently do not test for flavanols,” CocoaWell said in an e-mail, because “naturally occurring levels may vary.”

sumption. Those studies haven’t been done.” 🍫

- ¹ *Neurology* 79: 1223, 2012.
- ² *J. Intern. Med.* 266: 248, 2009.
- ³ *Arch. Biochem. Biophys.* 527: 90, 2012.
- ⁴ *J. Appl. Physiol.* 111: 1568, 2011.
- ⁵ *Cochrane Database Syst. Rev.* 8: CD008893, 2012.
- ⁶ *PLoS* 8: e70271, 2013.
- ⁷ *Am. J. Hyperten.* 23: 694, 2010.
- ⁸ *N. Engl. J. Med.* 367: 1562, 2012.
- ⁹ *J. Nutr.* 143: 931, 2013.
- ¹⁰ *Hypertension* 60: 794, 2012.
- ¹¹ *J. Psychopharmacol.* 27: 451, 2013.

500 mg of cocoa flavanols or a placebo every day for a month, researchers couldn’t detect any improvements in attention, memory, and other cognitive tasks in those getting flavanols.¹¹

Interestingly, when the participants filled out questionnaires at the end of the study, the 24 who had consumed 500 mg of flavanols every day reported feeling calmer and more content than those who had consumed 250 mg of flavanols or the placebo beverage.



Holiday Sides Rx

BY KATE SHERWOOD

Wouldn't it be great to have a stable of delicious, *healthy* holiday side dishes? (Not that we've got anything against eating green bean casserole once a year.) Here are three that are guaranteed to become "instant classics." 🌿

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

Cauliflower with Lemon-Pine Nut Dressing

- 1 Tbs. extra-virgin olive oil
- 3 Tbs. pine nuts, chopped
- 1 clove garlic, minced
- 1 tsp. lemon zest
- 1 Tbs. fresh lemon juice, more to taste
- 3 sprigs flat-leaf parsley, chopped
- 1 lb. cauliflower florets, about 4 cups
- ¼ tsp. kosher salt



Serves: 4 | Total Time: 15 minutes



I always try to buy organic citrus fruit when I'm using the zest.

In a small sauté pan, heat the oil over medium heat. Sauté the pine nuts until just starting to brown, 1-2 minutes. Stir in the garlic and cook 1 minute more. • Remove from the heat and transfer to a large heat-proof bowl. Allow to cool, then mix in the lemon zest, lemon juice, and parsley. • Steam the cauliflower until it's tender but still has some bite, 3-5 minutes. • Allow the cauliflower to cool slightly, then toss with the dressing. Season with up to ¼ tsp. of salt.

Per serving (1 cup): calories 100 | sodium 150 mg | total fat 8 g
sat fat 1 g | carbs 7 g | protein 3 g | fiber 3 g

Broccoli with Balsamic Dressing

- 1 Tbs. canola oil
- 3 large cloves garlic, thinly sliced
- 2 Tbs. balsamic vinegar
- 2 tsp. soy sauce
- 1 tsp. brown sugar
- 1 lb. broccoli florets, about 4 cups



Serves: 4 | Total Time: 15 minutes



You want to cook the dressing until it's thick and sticky, close to the consistency of honey.

In a small sauté pan, heat the oil over medium-low heat. Sauté the garlic until light golden, 1-2 minutes. Add the vinegar, soy sauce, and sugar and reduce the heat to low. Simmer, whisking often, until thickened into a syrup, 2-3 minutes. • Steam the broccoli until it's tender but still bright green, 2-3 minutes. • Drizzle the dressing over the broccoli.

Per serving (1 cup): calories 80 | sodium 120 mg | total fat 4 g
sat fat 0 g | carbs 9 g | protein 4 g | fiber 3 g

Brussels Sprouts with Orange Dressing

- ½ cup orange juice
- 1 tsp. orange zest
- 2 Tbs. canola oil
- 1 cup thinly sliced shallots or red onions
- 1 lb. brussels sprouts, trimmed and sliced
- freshly ground black pepper
- ¼ tsp. kosher salt



Serves: 4 | Total Time: 15 minutes



Brussels sprouts are best if cooked quickly, so cutting them in quarters or slicing (or even shredding) them is worth the effort.

In a small pot, simmer the orange juice until reduced to 2 Tbs. Remove from the heat and mix in the orange zest. • In a medium sauté pan, heat the oil over medium heat. Sauté the shallots until golden brown, 2-3 minutes. • Steam the brussels sprouts until they are tender but still bright green, 3-5 minutes. • Allow the brussels sprouts to cool slightly, then toss with the orange reduction and shallots. Season with pepper and up to ¼ tsp. of salt.

Per serving (1 cup): calories 150 | sodium 150 mg | total fat 7 g
sat fat 0.5 g | carbs 20 g | protein 5 g | fiber 6 g

Happy Holidays?

BY JAYNE HURLEY & BONNIE LIEBMAN

The holidays. A time when friends and family enjoy each other's company, drive each other nuts...and eat. In a 2012 study of 443 men and women, two-thirds gained at least one pound over the holiday season, and roughly 15 percent gained at least four pounds.

As if year-end gatherings weren't enough temptation, some restaurants help us celebrate by adding holiday items to their menus. Here's our take on a sampling of holiday foods, along with some now-year-round menu items that got their start at holiday time.

The information for this article was compiled by Paige Einstein and Lindsay Moyer.



Hors d'Oeuvres

Don't you just love holiday buffets?

You can start with a mini-quiche, at 60 calories (Nancy's Petite) or 70 calories (Whole Foods Mini Trio). Two bites, max.

Then you can move on to the mini-meatballs (around 40 calories in each Farm Rich Original or Trader Joe's Party Size). One swallow apiece.

And when else do you get to sample spanakopita? That's another 50 calories (Trader Joe's) or 60 calories (The Fillo Factory or Whole Foods Spinach & Cheese). Three dainty bites; two if you're hungry.

Have you tried arancini? Each cheese-filled ball of rice coated with breadcrumbs has 50 calories (Safeway Select Three Cheese Arancini) or 60 calories (Trader Joe's Arancini Bites). No more than two bites apiece, no matter how delicately you chew.

And let's not forget shrimp. How much harm could a single one do? About 30 to 60 calories if it's like the butterfly (read: breaded and par-fried) shrimp from SeaPak or Van de Kamp's.

Ooh...egg rolls. Each P.F. Chang's Teriyaki Chicken or General Chang's Chicken Spring Roll means 130 calories to work off. And one Tai Pei Shrimp or Vegetable Egg Roll contributes about 180 calories to your own rolls.

And wait. Are those sliders? Surely, mini-burgers couldn't do much damage. Who would expect each T.G.I. Friday's Anytime! Cheeseburger Slider (from a four-pack in the supermarket freezer case) to hit 230 calories? But that's light next to Applebee's version (430 calories).

And you haven't even touched the charcuterie (cured meats) or the cheeses. (Add 100 calories for each one-inch cube of Président Brie.)

News flash: calories count even if you're standing up.

Lattes

If you're a Starbucks fan, you know the Pumpkin Spice (Happy 10th Anniversary!), Caramel Brulée, Gingerbread, and Eggnog Lattes and the Peppermint Mocha.

Nothing like a little holiday cheer. It's just that *these* drinks come with more than cheer.

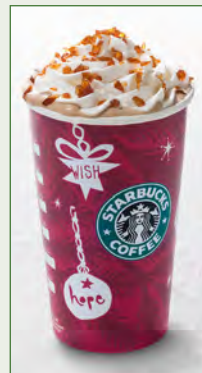
Thanks to add-ons like whipped cream, extra syrup, sauces, and caramel or chocolate pieces, they make nearly every other Starbucks' latte or macchiato (at about 250 calories for a grande) look light.

With 2% milk, the calories range from 320 (Gingerbread) to around 400 (Pumpkin Spice, Peppermint Mocha, Caramel Brulée) to 460 (Eggnog). Want a venti? Now you're up to 500 to 600 calories (the Gingerbread has "only" 390).

And those are *liquid* calories, which means that you're unlikely to compensate for them by eating 320 or 460 or 600 fewer calories at your next meal.

What's a holiday latte fan to do? Get nonfat milk to save around 50 calories. And skip the whip to save another 70. (There's no fixing the whip-less Eggnog.)

A grande Skinny Peppermint Mocha has just 130 calories. Too bad it contains possibly unsafe sucralose.



Sweet Breads

Panettone, a sweet bread originally from Milan that shows up in supermarkets around the holidays, looks so innocent. It has no icing. It's not sugary or gooey. It seems like bread with raisins or other dried fruit.

Yet a typical panettone like Bau-duccio's—which comes with candied fruits and Sun-Maid raisins or Hershey's milk chocolate chips—has

about 300 calories and 6 to 8 grams (around a third of a day's worth) of saturated fat in a 3 oz. slice (a ninth of a cake). A 3 oz. slice of a traditional German holiday stollen like KuchenMeister Butter Mandel Stollen does about the same damage.

Then there's panettone's Eastern European cousin, babka. The sweet bread, which typically comes with cinnamon or chocolate filling, may not look terribly indulgent. But a 5 oz. piece (like Panera's Chocolate Truffle Babka) has 490 calories and 8 grams of sat fat plus 8 teaspoons of added sugar. A 5 oz. piece of Green's Home Style Original Babka is in the same ballpark.

That's close to Panera's Red Velvet Cupcake, though the cupcake has 11 teaspoons of added sugar. Yikes.



Sides

They may be popular side dishes at holiday meals, but they're also popular at *any* meals.



■ **Mashed potatoes.** Refrigerator-case mashed potatoes like Bob Evans Original and Simply Potatoes Traditional have around 150 calories in a half-cup serving. That's how much—that is, how little—we *should* eat. Odds are, most

people are downing closer to the 250-calorie serving you'd get in the plain mashed potatoes at a restaurant like Applebee's or Boston Market.

Of course, those and other restaurants up the ante by also offering mashed potatoes that are "loaded" with cheese, bacon, and/or sour cream. Now the calories in your side dish are up to 310 (Boston Market), 340 (Marie Callender's), or 460 (Applebee's). And all have 9 to 12 grams of saturated fat (roughly half a day's worth). Gravy, anyone?

■ **Sweet potato casserole.** Yes, a sweet potato has more vitamin A and fiber than a white potato. But a 7.6 oz. side of Boston Market's Sweet Potato Casserole has 450 calories. Got room for that on *your* sides?

■ **Macaroni & cheese.** It's a popular holiday side dish in the South, and it's a hot item at restaurants. At Au Bon Pain, Bob Evans, and Boston Market, each serving (about 1 cup) has 280 to 350 calories.



Think that's a lot? Panera's small order (which you can get in a "You Pick 2") packs 490 calories and 13 grams of saturated fat into 1 cup. That's more than freezer-aisle mainstay Stouffer's Macaroni & Cheese, with 330 calories and 7 grams of sat fat.



■ **Biscuits.** They may look like just another kind of dinner roll, but there's a difference. Biscuits are made with palm oil or butter. So expect about 170 calories (and 3 grams of sat fat) in each Pillsbury Grands!

The biscuits at Dunkin' Donuts, McDonald's, Perkins, and Popeyes pack 260 to 320 calories (and 7 to 11 grams of sat fat).

■ **Creamed spinach.** Frozen brands like Birds Eye, Green Giant, and Seabrook Farms have just 70 to 120 calories in half a cup. Stouffer's Simple Dishes Creamed Spinach has 200 calories (and 4 grams of saturated fat). In contrast, you get 260 calories (and 12 grams of sat fat) in Boston Market's Creamed Spinach. Blame it on the cream cheese.

Everything Pumpkin

When pumpkins appear, the holidays aren't far behind. If only some companies added more than a smidgen (if that much) of pumpkin to their foods to celebrate the season.

■ **Cheesecake.** One slice (4 to 5 oz.) of Harry & David, Sara Lee, or Trader Joe's pumpkin cheesecake has 400 to 460 calories (and 12 to 15 grams of saturated fat). Each has more cream cheese and sugar—and Harry & David's has more crust—than pumpkin.



As usual, restaurants go above and beyond. The Cheesecake Factory's Pumpkin Cheesecake, for example, has 990 calories per slice, and its Pumpkin Pecan Cheesecake has 1,340 calories. Each harbors 47 grams of saturated fat—almost a 2½-day supply. *As if* the 850 calories and 38 grams of sat fat in a slice of The Cheesecake Factory's Original Cheesecake weren't enough.

■ **Muffins.** At Au Bon Pain, Dunkin' Donuts, Panera, and Starbucks, the tab runs to 420 to 590 calories per pumpkin muffin. What holiday fun!

Starbucks' Pumpkin Cream Cheese Muffin has more sugar, white flour, cream cheese, corn syrup, and modified corn starch than pumpkin.



■ **Doughnuts.** Krispy Kreme has the Pumpkin Spice (300 calories) and the Pumpkin Cheesecake (400). At



Dunkin' Donuts it's the Pumpkin (360) and the (pumpkin-less) Pumpkin Pie (380), which gets its holiday cheer from artificial and natural flavors and Yellow 5 and 6, Blue 2, and Red 40 food dyes. Yum.

Alcohol

Ready to drink up? Your weight may follow.

At Olive Garden, the bellinis and daiquiris have a cool 250 calories. At California Pizza Kitchen, a cosmopolitan adds 220 calories and a 22 oz. bottle of Ace Hard Perry Cider adds 250. Budget about 300 calories for each perfect martini or espresso martini at Romano's Macaroni Grill.

At dinner, each 6 oz. glass of red, white, or sparkling wine will cost you about 150 calories, and every 20 oz. draft beer rings up 250 (200 for a light).

And don't forget dessert. At CPK, the Irish Coffee delivers 160 calories and the B-52 Coffee (made with Baileys Irish Cream, Kahlúa, and Grand Marnier) has 230.



Cookies

What's Christmas without a gingerbread cookie? It's 200 calories lighter, if a Great American Cookies Gingerbread Man is typical.

Love the rugelach that's served at many Hanukkah celebrations? If they're like the Corner Bakery Cafe's, expect about 250 calories (and 7 grams of saturated fat) in each one. That's cream cheese, butter, and palm oil for you.

Then there's butter-laden shortbread. One tiny ($\frac{2}{3}$ oz.) Walkers Pure Butter Shortbread Finger has 100 calories and 4 grams of sat fat. At Au Bon Pain and Panera, each shortbread cookie is more than three times that size. Got room to store an extra 350 calories (and 12 grams of sat fat)? Au Bon Pain's Chocolate Dipped Shortbread Cookie hits 390 calories and 15 grams (three-quarters of a day's worth) of sat fat. And you can get it year-round!



Eggnog

If you only drink eggnog on New Year's Eve, feel free to skip this one. But if you're one of those people who starts buying eggnog as soon as it shows up on store shelves, watch out.

For starters, the Nutrition Facts on cartons use just a half-cup serving. (How did the eggnog lobby pull that one off?)

Yes, some people probably stop at half a cup. If that's not you, be prepared for roughly 360 calories and 10 grams of saturated fat per cup. But what do you expect when you mix milk, cream, sugar, and egg yolks? Add a shot of bourbon, brandy, or rum, and you're up to 460 calories.

Hood Light, Horizon Organic Lowfat, and Turkey Hill Light Vanilla use more nonfat milk, and some of them cut the cream, which slashes the sat fat to 4 or 5 grams but only trims the calories to about 300.

Silk Seasonal Nog, which is made largely of soy milk and sugar, eliminates the sat fat and gets the calories down to a low-for-eggnog 180 per cup. Does it taste like eggnog? Your call.



Cupcakes



If you're a regular at Crumbs Bake Shop, Georgetown Cupcake, Magnolia Bakery, Sprinkles Cupcakes, or similar places, having cupcakes over the holidays may seem ho-hum. If not, an array of cupcakes may look like the perfect dessert

to serve guests. Take the popular, festive red velvet cupcake (chocolate cake, red food coloring, and cream cheese frosting). At Au Bon Pain, each one has 400 calories (plus 7 grams of saturated fat and nearly 9 teaspoons of added sugar). At Panera, it's roughly the same.

But Crumbs takes the cake. Its Signature Size Red Velvet has 500 calories. (The company won't say how much sat fat and sugar it contains.) That's low for Crumbs. Plan on about 550 calories in a Devil's Food and an Ultimate S'mores and 780 calories in a (cream-cheese-filled) Pumpkin cupcake.

And odds are, you're not sharing that cupcake. Sigh.

Pies

Americans don't need a special occasion to eat pie, but some pies get more play around the holidays. Oh, Joy!

As pies go, pumpkin and sweet potato have one advantage: each is made with a vegetable that's rich in beta-carotene. But the damage done by a slice of pie depends more on its size and who's baking it than on its filling.

Frozen pies from the supermarket have the fewest calories. Mrs. Smith's pumpkin, sweet potato, mince, and apple pies, for example, have about 300 to 350 calories—and 5 to 8 grams of saturated fat—in each $4\frac{1}{2}$ oz. slice (one-tenth to one-sixth of a pie). Pecan pies tend to be more calorie dense. Edwards Georgia Pecan, Marie Callender's Southern Pecan, and Wegmans Pecan, for example, have 450 to 500 calories in a 4 oz. slice.

But restaurants, as usual, really pile it on.

At Bob Evans, the Double Crust Apple hovers around 500 calories and 10 grams—half a day's worth—of sat fat per slice (about 7 oz.). At Marie Callender's restaurants, calories start at 460 (pumpkin) and rise to 630 (apple), 760 (mince), and 920 (pecan) per $6\frac{1}{2}$ to $8\frac{1}{2}$ oz. slice. Bonus: each has 7 to 20 grams of sat fat.

Pie's problem: the sugar-laden filling comes with one (or two) layers of crust. That means a load of white flour and a saturated fat (like palm oil or lard) to get that flaky texture. Then come the extra calories in each dollop of whipped cream (70) or à la mode scoop of ice cream (150 to 250). Skip 'em.

Can't say no to your holiday dinner host? Ask for half a slice. 🍷



Fudge



Sugar, walnuts or pecans, cream, chocolate, corn syrup, butter. Those key ingredients help explain why a $1\frac{1}{2}$ oz. piece of Bordeaux Pecan or Chocolate Walnut Fudge from See's Candies has 200 calories, 4 grams of saturated fat, and roughly 4 teaspoons of added sugar. (The $1\frac{1}{2}$ oz. serving on chocolate candy labels is the weight of a Hershey's bar.)

You'll get half the calories, but no less sat fat, in each ping-pong-ball-size Godiva Milk Chocolate, Dark Chocolate, or Salted Caramel Truffle. Blame the cocoa butter, butter, and heavy cream.

With two out of three adults overweight or obese, serving a food with 100 calories in each bite or two may not be such a good idea. Just sayin'.

Nutrition Action Healthletter has been published since 1974 by the nonprofit Center for Science in the Public Interest, an independent consumer health advocacy organization. Founded in 1971, CSPI educates consumers about food safety and nutrition and presses food companies and the government to improve their policies and practices. CSPI's work is supported by Nutrition Action subscribers, individual donors, and foundation grants. CSPI does not accept funding from government or industry, and Nutrition Action is free of advertising.

RIGHT STUFF

PUMPKIN BUY



If you start your pumpkin pies, breads, muffins, soups, or stews by cutting into a whole pumpkin, more power to you.

But if you want to cook with pumpkin when there are none in the store, or you need less than an entire pumpkin, or you just don't feel like dealing with all that peeling, seeding, chopping, and cooking, there's an easier way.

Pumpkin purée.

Canned pumpkin purée is nothing new.

But most cans have liners that contain BPA (bisphenol A), a chemical that mimics estrogen. The National Institute of Environmental Health Sciences has expressed concern about BPA's "effects on the brain, behavior, and prostate gland in fetuses, infants, and children."

But you needn't worry about BPA with **Farmer's Market Organic Pumpkin** or **Pacific Organic Pumpkin Puree**. Both come in shelf-stable cartons. (Look for them at a health food store or in the "natural foods" section of your supermarket.)

The ingredient list: pumpkin. Period. Not that pumpkin needs any additions. Each half cup of Farmer's Market, for example, has 420 percent of a day's vitamin A, 10 percent of a day's iron, 4 percent of a day's calcium, and 4 grams of fiber. All for only 50 calories. Not too shabby.

Farmer's Market also sells **Organic Pumpkin**, as well as **Organic Butternut Squash** and **Organic Sweet Potato Puree**, in cans with BPA-free liners, so you can toss them into that soup with no worries.

But don't stop there. Try adding a purée to your pasta sauces, curries, or risottos.

It's time to pump it up.

Farmer's Market Foods: (541) 757-1497

Pacific Foods: (503) 924-4570

FOOD PORN

BIG WHOOP

"Go ahead, take a bite and see where we got the name," says the **Wicked Whoopies** Web site.

"Our bestselling flavor, **Classic Chocolate**, will make you shout, 'Whoopie!'"

Yup. There's nothing like what Wicked calls "rich, dark chocolate cake shells with light, fluffy cream filling" to make you shout "Whoopie!" Of course, you might shout something else if you realized that you're

eating sugar, white flour, modified food starch, eggs, partially hydrogenated soybean and cottonseed oil, and sodium stearoyl lactylate.

And you might shout yet something else if you noticed, after downing the whole thing, that the Nutrition Facts on the package are for just *half* a Whoopie.

True, the calories (370) on the label aren't low. But the full Whoopie has 740 calories and 12 teaspoons of added sugar (two days' quota for women and around a 1½-day supply for men), plus 9 grams of saturated fat (half a day's limit). It also delivers a bonus 5 grams (2½ days' worth) of trans fat, thanks to the "cream" filling, which is made of partially hydrogenated oils.

Think of each Whoopie as 10 Oreo cookies dunked in a quarter-cup of Betty Crocker Rich & Creamy Vanilla Frosting.

Wicked Whoopies sells more than 20 varieties online (and at its two bake shops in Maine). While you'd get little or no trans fat in the mini whoopie pies that are sold at Starbucks (190 calories) or Trader Joe's (290 calories), they're all still essentially sugar, flour, and oil.

Whoop dee doo.

Wicked Whoopie: (877) 447-2629

dish

OF THE MONTH

Amazing Sesame Dressing

Combine 2 Tbs. reduced-sodium soy sauce, 2 Tbs. cider vinegar, 1 Tbs. toasted sesame oil, ½ cup unsweetened apple sauce, and ½ cup canola oil in a jar with a tight lid and shake like mad. Toss with salad (greens, lentil, or grain), steamed veggies, or sautéed tofu, chicken, or shrimp.