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CENTER FOR SCIENCE IN THE PUBLIC INTEREST

TIP OF THE ICEBERG

MOST PEOPLE WITH PREDIABETES DON'T KNOW IT

BY BONNIE LIEBMAN

The numbers are startling. Roughly one out of 10 American adults have diabetes. Experts predict that we'll hit one out of five by 2030 and one out of three by 2050.

But people who have diabetes are just the tip of the iceberg. One out of three adults have *pre*diabetes. Ninety percent of them don't know it.

"And up to 70 percent of people with prediabetes will develop diabetes in their lifetime," says Leigh Perreault, associate professor of medicine at the University of Colorado. "It's absolutely staggering."

Here's how to lower your risk.

Continued on page 3.

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Nutrition Action Healthletter 40 1974-2014

MEMO FROM MFJ

The Food Industry Flexes its Muscles

Forget those feel-good ads. Forget the photos of food industry executives standing next to First Lady Michelle Obama. The food lobby has been out in force to thwart the government's efforts to improve the public's health. Some examples:

■ **Schools.** Companies that sell food to schools are working with (mostly) House Republicans to gut the recent improvements in school meals. If they get their way, kids will be eating less fruits and vegetables and more salt and white bread.

The industry is hiding behind the School Nutrition Association, the misnamed organization of cafeteria directors that gets half its funding from food companies. Never mind that this generation of kids is the heaviest ever and will likely have the highest rate of diabetes ever.

Food bigwigs to kids: "Skip the veggies."

■ **Spuds.** The potato industry, working with Democrats and Republicans from potato-growing states, is trying to get white potatoes into the WIC (Women, Infants, and Children) Special Supplemental Nutrition program. Never mind that women and children already eat plenty of white potatoes and don't need the government to give them more. The welfare of potato growers and processors clearly comes first.

■ **Trans fat.** Food manufacturers want to weaken, if not kill, the Food and Drug Administration's proposal to revoke the approval of partially hydrogenated oil, the main source of heart-damaging artificial trans fat. Never mind that trans fat can easily be eliminated from processed foods. So far, Argentina, Austria, Denmark, Iceland, and Switzerland have done it, and their food industries seem to have survived perfectly well.

■ **Sodium.** Companies that I've talked to are unhappy that the FDA plans to propose goals for lowering sodium levels in processed foods. Even though the targets would be voluntary, companies fear that their higher-sodium products would look bad (which they are) and that the guidelines would eventually become mandatory. Never mind that halving sodium consumption would save about 100,000 lives and tens of billions of dollars annually.

Food companies want to feed at the trough of government subsidies or continue marketing foods that are unnecessarily unhealthy. Yes, I know, that ain't exactly stop-the-presses news. Big Food has been successfully pressuring politicians for decades.

In 1980, for example, the food, advertising, and broadcasting industries strong-armed Congress into stripping the Federal Trade Commission of much of its authority to regulate advertising directed to children, after the agency said that those ads manipulate naïve minds. To this day, the FTC has less power to stop unfair advertising aimed at children than advertising aimed at adults.

In a more recent example, in 2012 the food industry got Congress to kill draft voluntary guidelines for marketing foods to children. Even that excellent proposal apparently was too much for junk-food advertisers.

If we could listen in on company lobbyists as they yammered away in the halls of Congress, I bet we'd never hear them utter the words "improving kids' health"...because that simply isn't their concern.

Mike Jacobson

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CENTER FOR Science IN THE Public Interest

TIP OF THE ICEBERG

MOST PEOPLE WITH PREDIABETES DON'T KNOW IT

A diabetes tsunami is headed our way, say experts. One in three adults—and nearly one in two men—already have prediabetes. The chief culprits: two-thirds of adults (and one-third of children) are overweight or obese, and we're a nation of couch (and computer, car, TV, and phone) potatoes. But that's not all that matters.

The Iceberg

"We already have a diabetes epidemic on our hands," says Edward Gregg, chief of the Epidemiology and Statistics Branch of the Division of Diabetes Translation at the Centers for Disease Control and Prevention.

He's talking about the 29 million American adults who have diabetes.[1] Most have type 2, the kind that's closely tied to obesity (unlike type 1 diabetes, which is an autoimmune disease). Type 2 used to be called adult-onset diabetes, but now it's showing up in teens.

"There's a fairly large proportion—roughly 28 percent—of adults with diabetes who don't know it," says Gregg. "And then you have a third of the adult population that's at very high risk for diabetes. And the vast majority of people with prediabetes don't know that they have it. That's why we think of diabetes as an iceberg."

Doctors use blood sugar levels to diagnose prediabetes and diabetes (see "How's Your Blood Sugar?"). But the trouble starts long before blood sugar soars out of control.

"For type 2 diabetes to develop, there are usually two problems," says Anastassios Pittas, co-director of the Diabetes Center at Tufts Medical Center in Boston. "The first is that the body is resistant to insulin."

Insulin acts like a key that allows sugar to enter cells, where it can be burned for fuel or stored for later. But in some people, especially those with an oversized waist, the key struggles to open the lock (see "What is Insulin Resistance?" p. 4).

To compensate for insulin resistance—which is also called impaired insulin sensitivity—the beta cells of the pancreas pump out more and more of the hormone. The extra insulin can keep a lid on blood sugar for years, but eventually the beta cells wear out.

"At some point, the pancreas cannot make enough insulin to overcome the resistance," says Pittas. That's when blood sugar surges into the "diabetes" range.

Millions of Americans are headed toward that breakpoint. Two reasons stand out.

"The population has steadily become more obese for the last few decades," says Gregg, thanks in part to larger portion sizes, sugary beverages, and less exercise.

"And baby boomers are moving into the high-incidence years," he adds. "Aside from obesity, age is the most important risk factor. Beta-cell failure occurs more rapidly with age. About 25 percent of people age 65 and older have diabetes."

And that spells trouble.

"In many ways the population is getting healthier over time," says Gregg. "But diabetes is an exception."

Complications

Diabetes threatens nearly every part of the body, raising the risk of memory loss, heart attack, kidney disease, amputations, and more (see "From Head to Toe," p. 6).

"Once a person has diabetes, there are so many different branches of complications that can occur, and the costs spiral out," says Gregg. "So if you could nip it in the bud, that would definitely be preferable."

On the upside, we're getting better at preventing those complications.[2]

"The rate of complications is lower than it used to be," notes Gregg. "And that spans the whole spectrum, from diabetic eye disease, kidney disease, and nerve disease all the way to the risk for stroke and heart attack."

But the risk of those problems starts to climb before a person has diabetes.[3]

"People with prediabetes have a 20 percent increased risk of cardiovascular disease compared to their peers with normal blood sugar," says the University of Colorado's Leigh Perreault.

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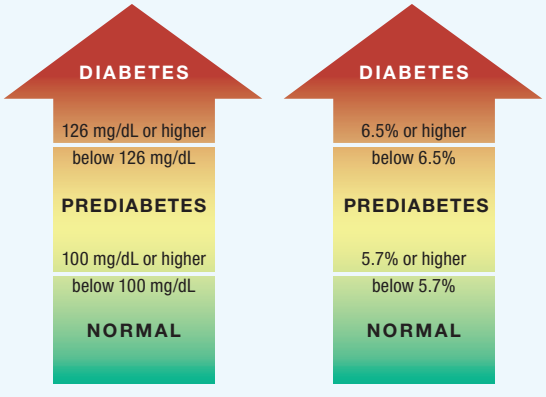
HOW'S YOUR BLOOD SUGAR?



Fasting Blood Sugar **Hemoglobin A1C**

The cutoffs for prediabetes and diabetes depend on whether your blood is tested after an eight-hour fast (left arrow) or without fasting (right arrow). If your doctor uses a third diagnostic tool, an oral glucose tolerance test, you have prediabetes if your blood sugar is 140 to 199 mg/dL and diabetes if it's over 199 mg/dL.

Source: *Diabetes Care 36 (Suppl. 1)*: S11, 2013.

Photo: © niyazz/fotolia.com.

The same goes for damage to the small blood vessels of the eyes, nerves, and kidneys, she adds. "They all exist at a higher rate in people with prediabetes, even if they never develop diabetes."

Also disturbing: a recent study found that the risk of dementia climbs before blood sugar levels reach the diabetes range.[4]

And yet, prediabetes doesn't trigger much of a fuss in the doctor's office.

"When healthcare providers see numbers that are in the prediabetic range, they usually say, 'Your blood sugar is a little high, so go home and eat less and exercise,'" notes Perreault. "We know that doesn't work."

For starters, patients need targets. "They need lipid goals, blood pressure goals, glucose goals."

And doctors need to follow up. "They should tell patients to come back in three months to make sure they get back to normal," says Perreault. "Until now, all we've done is cross our fingers and say, 'Gosh, I hope they don't develop diabetes.'"

When Perreault and colleagues followed 1,990 people with prediabetes in the Diabetes Prevention Program Outcomes Study for five years, participants who had a normal blood sugar level on at least one yearly test were 56 percent less likely to convert to diabetes.[5]

But the goal for people with prediabetes should be not just to prevent diabetes but to return to normal.

"In most trials, if someone with prediabetes doesn't develop diabetes, the intervention is deemed successful," says Perreault.

"My argument to my colleagues in the Diabetes Prevention Program is that if you guys were taking care of my mom, I would fire you. Shouldn't our goal be not just to make sure that people don't get diabetes but to lower their risk as far as we possibly can?"

And for many people, we know how.

Weight & Exercise

The good news about diabetes: it's not inevitable.

"Up to 90 percent of type 2 diabetes is preventable by lifestyle modification," says JoAnn Manson, director of preventive medicine at Brigham and Women's Hospital in Boston.

"If you can stay within a healthy weight, you're about halfway there. Once you add exercise, you're down to about a 70 percent lower risk compared to people who are overweight and not engaging in regular exercise."

Those figures come from a study that tracked tens of thousands of healthy people for 16 years.[6]

Even stronger evidence comes from the Diabetes Prevention Program study, which randomly assigned roughly 3,800 people with prediabetes to metformin (a drug that lowers blood sugar), typical diabetes education, or an "intensive lifestyle intervention" to exercise and cut calories (especially from fat).[7]

"The Diabetes Prevention Program found close to a 50 percent reduction in the progression to diabetes with very modest weight loss," says Manson, who is also a professor of medicine at Harvard Medical School. The average participant lost about 12 pounds. (The metformin takers had a 30 percent lower risk.)

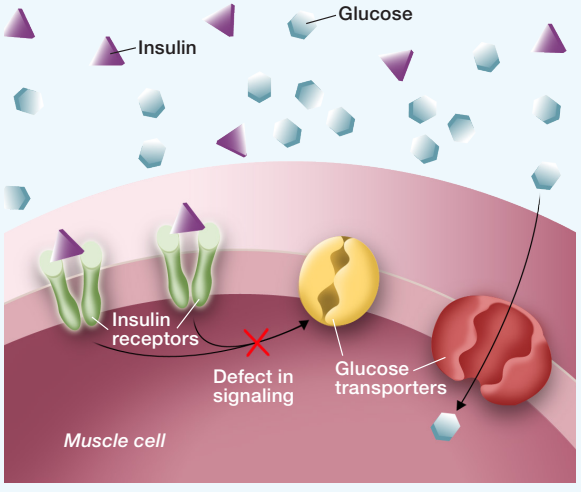
"They ate a lower-calorie, generally healthier diet and exercised about 30 minutes a day," notes Manson. "The reduction in risk you get just from weight control and regular physical activity is enormous, and it's true for all ethnicities, races, and age groups."

That also applies to people who have diabetes. "In the Look AHEAD study, we found that some people in the weight loss intervention could reverse their diabetes," says the CDC's Edward Gregg.[8]

"Among the group whose weight loss was on average 8 percent that first year, 11 percent had at least a partial remission. They were going off their medications and their levels of blood sugar were below the diabetic threshold."

Does what—not just how much—you eat also make a difference in your risk of diabetes? Yes, says Manson, "but consuming more calories than you're burning is by far the stronger risk factor."

WHAT IS INSULIN RESISTANCE?



After you eat, insulin docks in receptors on cell membranes, which signals glucose transporters to let glucose (blood sugar) into the cell. But if you're insulin resistant, some glucose transporters never get the message. That leaves excess glucose in the blood, so the pancreas has to pump out more insulin. If it can't keep up, blood sugar rises and you have diabetes.

What May Also Matter

SUGARY DRINKS

"The data are pretty compelling that we should basically cut out sugar-sweetened beverages," says Frank Sacks, professor of cardiovascular disease prevention at the Harvard School of Public Health.

Sugary drinks—soft drinks, sports drinks, energy drinks, fruit drinks, and sweetened teas—are a double whammy.

First, "there is strong evidence that sugar-sweetened beverages lead to weight gain because people tend to not compensate for liquid calories by reducing calories elsewhere," says Manson.

For example, in the largest study done so far, people who were randomly assigned to drink just one cup of sugar-sweetened soda every day for 1½ years gained more weight (and fat) than those who drank a diet soda.[9]

But sugary drinks aren't just fattening. When Manson and other researchers tracked roughly 75,000 nurses and 39,000 health professionals for 22 years, those who drank a sugary soft drink at least once a day had about a 30 percent higher risk of diabetes than those who drank one less than once a month. And that was *after* taking weight into account.[10]

Original illustration: © 2009 The Regents of the University of California. Adapted by Jorge Bach/CSPI.

"So increased weight didn't account for all of the higher risk of diabetes," says Manson.

Even those who drank fruit juice at least once a day had a 21 percent higher risk than those who drank juice less than once a week.[11] And that also was over and above the impact that juice has on weight.

"It doesn't matter whether it's fruit juice or soda, the high consumption of sugar in liquid form may lead to weight gain and may pose a major stress on the pancreas," says Manson.

Researchers aren't sure why, but evidence is mounting that fructose—found in sweeteners like table sugar, high fructose corn syrup, honey, and agave—may make the body resistant to insulin.

"We now have two studies that show that a high level of fructose impairs insulin sensitivity," says Kimber Stanhope, of the University of California, Davis.

When her research team gave middle-aged overweight or obese people a hefty daily dose (25 percent of their calories, or about 600 calories' worth) of either fructose or glucose for 10 weeks, insulin sensitivity was worse in those who got fructose.[12] And although both groups gained about the same amount of weight, the fructose group gained more visceral (deep belly) fat, which is linked to diabetes.

And Swiss researchers saw a drop in insulin sensitivity in the liver when they gave lean young men only about 14 percent of their calories from fructose—320 calories' worth—every day for three weeks.[13] (That's about twice what the average person consumes.)

"We believe that insulin resistance develops first in the liver and then in the rest of the body," says Stanhope.

"While it's not definitive, there is data to suggest that consumption of excess fructose-containing sugars reduces insulin sensitivity. And that's a risk factor for diabetes."

CARBS

Does a diet that's high in carbs—or high in the *wrong* carbs—raise your risk of diabetes? The answers are still murky.

When two large European studies pitted higher-carb diets against diets higher in monounsaturated fats, insulin sensitivity—that is, how much insulin it takes to remove a given amount of sugar from the blood—didn't change.[14,15]

ARE YOU AT RISK FOR TYPE 2 DIABETES?

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?
Man *(1 point)* Woman *(0 points)*

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

Add up your score

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.

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)*
	You weigh less than the amount in the left column *(0 points)*		

Source: American Diabetes Association.

Nor does insulin sensitivity consistently change when researchers test high-glycemic carbs (which give blood sugar a big boost) against carbs with a low glycemic index.[15-17]

"The literature does not support glycemic index making a big difference in insulin sensitivity, or much of anything besides short-term blood sugar levels," says Harvard's Frank Sacks.

And so far, large studies that swap white bread and other refined grains for whole grains have largely come up empty.[18,19]

Still, Sacks and other researchers argue that it's worth cutting back on carbs to lower blood sugar and insulin levels after meals.

"We can't say that reducing carbohydrate improves insulin sensitivity, but it reduces the need for more insulin," says Sacks. "It's logical that if you eat less carbs, less glucose will go into the bloodstream and stimulate the pancreatic beta cells to secrete insulin."

And there isn't much room for white flour and added sugars in a diet that's rich in vegetables, fruits, beans, and other healthy carbs.

"So to simplify the message, let's just say that in a more healthful diet, carbohydrate is lower—not extremely low, but at the lower end of the range of what many people now eat," says Sacks.

"And for the carbs that you eat," notes Manson, "it would be better that they be whole grains, or that they come from fruits, vegetables, and legumes."

Whole grains are rich in fiber and magnesium, which may explain why people who eat them have a lower risk of diabetes.

Carbs aside, *any* diet that helps you lose unwanted pounds is your best bet.

"We found reduced fasting insulin—which is a pretty clear indication of improved insulin sensitivity—after weight loss on any of the diets that we studied in the Pounds Lost study," says Sacks. "It's the reduction in body weight and body fat that decreased insulin levels."

> > > > >

COFFEE

While soda may boost your diabetes risk, coffee may lower it.

When researchers followed 96,000 women and 27,000 men for four years, those who upped their coffee intake by about two cups a day had an 11 percent lower risk of diabetes—while those who cut their intake by about two cups a day had a 17 percent higher risk—compared to those who didn't change.[20]

"Coffee is very consistently linked to a reduced risk of type 2 diabetes, even two or three cups a day," says Manson. Note that she's talking about an 8 oz. cup, not a Starbucks cup, which is typically 12 oz. (tall), 16 oz. (grande), or 20 oz. (venti).

Researchers aren't sure why coffee may matter. "It's not necessarily the caffeine, because even decaf is linked to a lower risk, though not as strongly as regular coffee," explains Manson.

So far, few studies have tested whether coffee can boost insulin sensitivity. In one preliminary study, both regular and decaf coffee seemed to curb the insulin resistance triggered by six days on a high-fructose diet.[21]

But Manson adds some cautions.

"Overall, I think coffee is very safe in terms of heart disease and chronic disease. But many people get jittery and get a rapid heart rate, especially if they drink more than three cups a day."

What's more, many coffee drinks are loaded with sugar and calories.

"People may think, 'I should get a large Frappuccino because coffee prevents diabetes,'" says Manson. "All those extra calories are *not* going to reduce the risk of diabetes."

MAGNESIUM

Whole grains, leafy greens, nuts, and beans. All are linked to a lower risk of diabetes and all are rich in magnesium.

What's more, people who get more magnesium from food have lower insulin levels and a lower risk of diabetes.[22]

"Magnesium looks promising," says Manson. "And it's one of the few minerals that have been tested in randomized trials."

For example, when German researchers randomly assigned 32 overweight people with insulin resistance to take either magnesium (365 milligrams a day) or a placebo for six months, fasting blood sugar dropped and insulin sensitivity improved in the magnesium takers.[23] (Note: more than 350 mg of magnesium from a supplement may cause diarrhea and stomach cramps.)

"The smaller randomized trials suggest benefits for glucose tolerance and insulin sensitivity," says Manson. "It's possible that taking a magnesium supplement could reduce your risk of diabetes, but larger randomized trials are needed to prove it."

VITAMIN D

Many studies that track healthy people for years have reached the same conclusion: "People with higher levels of vitamin D have a lower risk of developing type 2 diabetes in the future," says Tufts Medical Center's Anastassios Pittas, who is also a professor of medicine at Tufts University's Sackler School of Graduate Biomedical Sciences.[24]

But those studies can't tell if something else about people with low vitamin D increases their risk. So researchers have looked further.

"We and others have done short-term intervention studies looking at insulin sensitivity, insulin secretion, or similar outcomes," says Pittas. "Some have not shown any difference, but others show promise."

For example, Pittas and his colleagues gave 92 overweight or obese adults with prediabetes vitamin D (2,000 IU a day), calcium (400 mg twice a day), both, or a placebo for four months. Those taking vitamin D (either alone or with calcium) had better pancreatic beta-cell function than those who didn't take vitamin D.[25]

"Beta-cell function is one of the best measures we have for future risk of getting type 2 diabetes," notes Pittas.

But in other studies, vitamin D didn't help. Why?

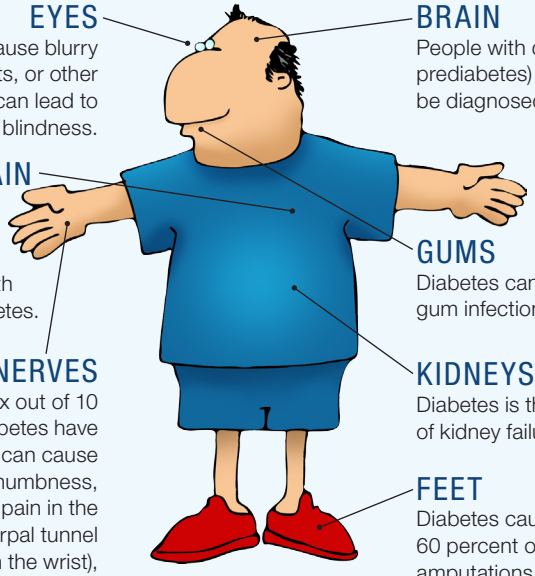
"I think that it is very difficult to show any results in people with normal glucose tolerance or established type 2 diabetes," says Pittas. "If you're normal, vitamin D will not make you any more normal. And if you have established type 2 diabetes and you're treated with insulin or other medications, vitamin D cannot compete."

That's why Pittas has launched D2d, a large trial testing vitamin D (4,000 IU a day) in people with prediabetes.

"We're targeting people at high risk for diabetes," he explains. "D2d is a national study taking place in 21 cities. There is a questionnaire online, at d2dstudy.org,

FROM HEAD TO TOE

Diabetes strikes nearly every part of the body. Among them:



EYES
Diabetes can cause blurry vision, spots, or other symptoms, and can lead to blindness.

BRAIN
People with diabetes (and prediabetes) are more likely to be diagnosed with dementia.

HEART & BRAIN
The risk of heart attack or stroke is two to four times higher in people with diabetes.

GUMS
Diabetes can raise the risk of gum infections.

NERVES
An estimated six out of 10 people with diabetes have nerve damage that can cause problems like numbness, burning, tingling, pain in the feet or hands, carpal tunnel syndrome (pain in the wrist), and delayed digestion of food.

KIDNEYS
Diabetes is the leading cause of kidney failure.

FEET
Diabetes causes about 60 percent of foot and leg amputations that are not caused by accidents.

Illustration: © Caraman/fotolia.com.

FILLING YOUR PLATE

A handy rule of thumb: Fill half your plate with vegetables, a quarter with lean protein, and just a quarter with (preferably whole) grains.

that people can complete to find out their risk of diabetes. Even if people are not interested in participating in the study, they can go there to evaluate their risk by answering a few questions."

Meanwhile, the VITAL trial will test whether a lower dose of vitamin D (2,000 IU a day) can prevent diabetes in people who aren't at high risk.

"Between the two trials, I think there will be a clear answer as to whether vitamin D supplementation is promising for preventing diabetes," says Manson.

How might vitamin D work?

"There's preliminary evidence that it may improve insulin secretion," says Pittas.

"The enzyme that converts vitamin D to its active form is expressed in beta cells, which means that the beta cell needs an adequate vitamin D supply to function. Only a few organs outside of the kidney have the ability to activate vitamin D so they don't have to depend on the circulating levels of the active vitamin."

OTHER

Many foods have been linked to the risk of diabetes but haven't been tested in trials. Among them:

■ **Red meat.** "Red meat—and particularly processed meats like luncheon meats—have been pretty consistently linked to an increased risk of diabetes," says Manson.[26]

The iron in red meat could damage the pancreas and increase the risk of diabetes, as it does in people with hemochromatosis, a genetic predisposition to iron overload.

"People with high total body iron stores, even in the absence of hemochromatosis, also have a higher risk of diabetes," says Manson.

The nitrites in processed meats could also play a role. "It isn't entirely clear, but those foods should be minimized anyway," she adds. That's because processed meats are salt laden and linked to a higher risk of colon cancer.

■ **Vegetables.** When European researchers pooled the data from five studies, they found only one type of vegetable that was linked to a lower risk of diabetes: green leafy vegetables, like spinach, chard, lettuce, and kale.[27]

But Manson doesn't take those results as gospel. Leafy-green eaters tend to be more health conscious.

"I would certainly recommend eating salads, leafy greens, cruciferous vegetables, beans, and fruit," she says.

"Even if they don't prevent diabetes, they have other health benefits."

■ **Dairy.** "Yogurt and low-fat dairy products have been linked to a reduced risk of diabetes, but it's not well understood," says Manson.[28]

Could people who eat yogurt or low-fat dairy have a lower risk because they're more health conscious?

"Absolutely," says Manson. "The studies tend to account for physical activity, smoking, alcohol, and other obvious things, but they can't account for everything. That's why short-term randomized trials would be so helpful."

THE BOTTOM LINE

- The best way to dodge diabetes is to lose (or not gain) extra pounds.
- Do *at least* 30 minutes of brisk walking or other aerobic exercise every day. Experts also recommend strength training sessions two or three times a week.
- Limit sweets, especially sugar-sweetened drinks. Even the naturally occurring sugars in 100% fruit juice may raise your risk.
- Fill up half your plate with vegetables and only a quarter with (preferably whole) grains.
- Eat leafy greens, whole grains, beans, and nuts to get enough magnesium.
- Replace saturated and trans fats with unsaturated fats to lower the risk of heart disease.
- Get the RDA for vitamin D (600 IU a day up to age 70 and 800 IU over 70) from supplements or foods fortified with vitamin D.

[1] cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf.
[2] *N. Engl. J. Med. 370*: 1514, 2014.
[3] *J. Diab. Complic. 28*: 226, 2014.
[4] *N. Engl. J. Med. 369*: 540, 2013.
[5] *Lancet 379*: 2243, 2012.
[6] *N. Engl. J. Med. 345*: 790, 2001.
[7] *N. Engl. J. Med. 346*: 393, 2002.
[8] *JAMA 308*: 2489, 2012.
[9] *N. Engl. J. Med. 367*: 1397, 2012.
[10] *Am. J. Clin. Nutr.* 2014. doi:10.3945/ajcn.113.079533.
[11] *BMJ 347*: 150001, 2013.
[12] *J. Clin. Invest. 119*: 1322, 2009.
[13] *Diabetes Care 36*: 150, 2013.
[14] *Int. J. Obes. 35*: 800, 2011.
[15] *Am. J. Clin. Nutr. 92*: 748, 2010.
[16] *Int. J. Obes.* 2014. doi:10.1038/ijo.2014.52.
[17] *Circulation 127*: A016, 2013.
[18] *Brit. J. Nutr. 104*: 125, 2010.
[19] *J. Nutr. 137*: 1401, 2007.
[20] *Diabetologia* 2014. doi:10.1007/s00125-014-3235-7.
[21] *Am. J. Clin. Nutr. 99*: 268, 2014.
[22] *Diabetes Care 34*: 2116, 2011.
[23] *Diab. Obes. Metab. 13*: 281, 2011.
[24] *Diabetes Care 36*: 1422, 2013.
[25] *Am. J. Clin. Nutr. 94*: 486, 2011.
[26] *JAMA Intern. Med. 173*: 1328, 2013.
[27] *Eur. J. Clin. Nutr. 66*: 1082, 2012.
[28] *J. Nutr. 141*: 1969, 2011.

FOR MORE INFORMATION

American Diabetes Association
(diabetes.org)

Centers for Disease Control and Prevention
(cdc.gov/diabetes)

National Diabetes Education Program
(ndep.nih.gov)

YMCA
(ymca.net/diabetes-prevention)

At risk for diabetes? At a growing number of YMCAs (and other locations) nationwide, you can participate in a year-long diet and exercise Diabetes Prevention Program supported by the CDC.

Photo: Kate Sherwood/CSPI.

STEP IT UP

GET FITTER FASTER WITH INTERVAL TRAINING

Martin Gibala is professor and chair of the department of kinesiology at McMaster University in Hamilton, Ontario. He has published numerous studies on the benefits of high-intensity interval training. Gibala spoke to *Nutrition Action*'s Bonnie Liebman from Hamilton.

No time to exercise? Here's how to get more bang for your buck. Two caveats: A short exercise session doesn't burn enough calories to help you lose weight. And getting out of your chair throughout the day can help lower your blood sugar.

Q: *What is high-intensity interval training?*

A: Interval training at its heart is just alternating periods of relatively intense exercise with periods of rest or light exercise for recovery. It's a pattern of peaks and valleys: going hard, backing off, going hard, backing off, and repeating that pattern.

Q: *Why do people do it?*

A: Interval training is a way to get relatively fit with a relatively lower time commitment. Depending on the survey, 75 percent of people aren't following the public-health exercise guidelines. And the number-one-cited barrier is lack of time.

Q: *How long does interval training take?*

A: There's no accepted definition. In many studies, the time commitment has been around 20 minutes per session, three times per week.

Q: *Twenty minutes of working hard?*

A: No. That includes recovery periods. One protocol that we've used in our lab involves 10 one-minute hard efforts with one minute of recovery between each. The hard efforts are at 85 to 90 percent of your maximum heart rate, so they're high intensity.

Q: *And that's enough?*

A: I don't want to overstate interval training research. It's a bit like a new drug on the market. In its early trials it's showing a lot of promise, but we're nowhere near the grade A evidence—the large randomized controlled trials—that we need to say that it has all the benefits of traditional endurance exercise.

But we know, for example, that interval training makes the heart a better, stronger pump. It makes the blood vessels more elastic. And it makes your muscles better at using oxygen, because it can rapidly enhance the amount of fuel-burning mitochondria in your muscles.

Q: *Does it lower blood sugar?*

A: In our study on people with type 2 diabetes, the average blood sugar level over the course of 24 hours was reduced—by a fairly large margin—after only two weeks of interval training. And fasting insulin and glucose scores were reduced after two weeks in a study of sedentary middle-aged individuals without diabetes.

Q: *Why would exercise help?*

A: Roughly half our body weight is skeletal muscle. That's where most of our blood sugar goes. When you have prediabetes, your muscles get resistant to taking up blood sugar. Any exercise—not just interval training—dramatically enhances the ability of muscles to take up and store the glucose.

To get the most out of any exercise, push yourself for a minute, back off, and repeat.

You get more of the transporters that take up the blood sugar and they become more receptive, so it takes less insulin for them to do their job. And you have less sugar floating around in the blood.

Q: *Do the people in your studies typically ride stationary bikes?*

A: Yes, because it's easy to quantify their work and power. It's also safer because you're not talking about high ground impact. And it's better tolerated if people have underlying knee or joint issues.

But any exercise that involves large muscle groups, like swimming, stair climbing, or running, should be effective.

Q: *Is any exercise better than nothing?*

A: Absolutely. And the best exercise is the one that you like and you're most likely to stick with. If you hate interval training, it's unlikely that you'll do it. But if you're pressed for time—whether it's an excuse or whether you're really busy—trying intervals is not a bad strategy.

Q: *And you don't have to sprint?*

A: No. Some people think interval training is only sprinting as hard as you can, like you're saving your child from an oncoming car.

But it can be scaled to any starting level of fitness. Just get out of your comfort zone. If your usual exercise is walking around the block, walk faster between the next two light posts.

You can feel yourself a little more out of breath, maybe it's harder to talk to your partner, your heart rate's up a little more. And then you back off. That's an interval training session for you.

Q: *Can interval training be dangerous?*

A: The knee-jerk reaction is that interval training is a heart attack waiting to happen. And that's wrong.

People should be medically cleared before they engage in any type of exercise program. But they don't need to be afraid of intervals. The potential risks are similar to other forms of exercise. The greater risk is sitting on the couch all day.

Photo: © zstock/fotolia.com.

Breakfast...or Not

Does eating breakfast speed up your metabolism and help you lose weight, as some people claim?

British researchers randomly assigned 33 normal-weight people to either eat a big breakfast (at least 700 calories) before 11 a.m. or to consume no calories until noon.

After six weeks, the breakfast eaters had no higher (or lower) resting metabolic rate than the breakfast skippers. While the eaters engaged in more light physical activity and burned more calories throughout the day, they didn't weigh less or have less body fat than the skippers, probably because they ate more calories (especially from sugar and other carbs) in the morning.

One notable difference: the breakfast skippers had more episodes of high or low blood sugar during the afternoon and evening than the breakfast eaters. That could lead to a higher risk of diabetes over time.

In a second study, U.S. researchers randomly assigned 283 overweight or obese people to get one of three pamphlets: the "breakfast" group was advised to eat breakfast every day before 10 a.m., the "no breakfast" group was told to eat nothing until 11 a.m., and the "control" group got healthy-eating advice with no mention of breakfast. After 16 weeks, all three groups had lost about the same amount of weight.

What to do: If you don't like eating breakfast, don't force yourself to eat it to lose weight or boost your metabolism. However, a light breakfast (or mid-morning snack) may keep your blood sugar more even later in the day.

Am. J. Clin. Nutr. 2014. doi:10.3945/ajcn.114.083402 & doi:10.3945/ajcn.114.089573.

Move It or Lose It

Older, heavier people who move their muscles may also be helping their brains.

Researchers studied 107 frail, obese, sedentary older people in the St. Louis area. ("Frail" meant that they had low scores on physical performance and fitness tests or had trouble with daily activities.) Participants were assigned to one of four groups:

- The "diet" group got advice and goals for cutting 500 to 750 calories a day.
- The "exercise" group did 30 minutes of aerobics, 30 minutes of strength training, 15 minutes of flexibility, and 15 minutes of balance exercise three times a week.
- The "diet-plus-exercise" group got both interventions.
- The "control" group got general advice about healthy eating.

After one year, only the diet-plus-exercise group improved more than the control group on two tests of attention, executive function, and other thinking skills. Both the exercise and diet-plus-exercise groups (but not the diet group) improved on a word fluency test more than the control group. None of the groups improved on depression scores.

What's more, the diet and diet-plus-exercise groups each lost about 20 pounds, and both lost visceral (deep belly) fat. The exercise group lost no weight or visceral fat.

What to do: Get moving, no matter your age or size. In animals, exercise can stimulate nerve cells and blood vessels to grow. If you want to lose weight, cutting calories is crucial.

Am. J. Clin. Nutr. 2014. doi:10.3945/ajcn.113.082883.

Sat Fat & Belly Fat

Excess saturated fat may lead to more belly fat than excess polyunsaturated fat.

Swedish researchers fed 37 young lean people an average of three 250-calorie muffins a day that were made with either palm oil (a saturated fat) or sunflower oil (a polyunsaturated fat). The number of daily muffins was adjusted to make each participant gain 3 percent of his or her initial weight.

After seven weeks, both groups had gained 3½ pounds' worth of fat and muscle. However, more of the weight gained by the sat fat eaters was deep belly (visceral) fat, while more of the weight gained by the poly eaters was muscle.

What to do: Replace saturated fats (in foods like red meats, dairy, and butter) with polyunsaturated fats (in foods like oils, fish, and nuts). It's too early to know if that will help you gain less belly fat, but it should help lower your risk of heart disease (see May 2014, cover story).

Diabetes 2014, Feb 18. pii: DB_131622.

D for Asthma?

If you have asthma and low vitamin D, taking the vitamin may not help your lungs.

U.S. scientists randomly assigned 408 adults with persistent asthma and low vitamin D blood levels (less than 30 ng/mL) to take an inhaled corticosteroid medicine (ciclesonide) plus either a placebo or vitamin D (one 100,000 IU dose and 4,000 IU a day afterwards). The drug doses were tapered off over time if possible.

After seven months, the vitamin D takers were no less likely than the placebo takers to experience a "treatment failure" like reduced air flow, hospitalization, or the need for additional medicine. However, there was a suggestion of fewer "exacerbations" (treatment failure plus additional worsening) in the vitamin D takers.

What to do: Everyone should shoot for the recommended levels of vitamin D (600 IU a day up to age 70 and 800 IU for those over 70). But until further studies are done, it's unclear whether vitamin D can help control asthma.

JAMA 311: 2083, 2014.

Photo: © Monkey Business/fotolia.com.

WHAT'S BUGGING YOU?

Vomiting. Diarrhea. Cramps. Food poisoning is no fun. In most cases, your body will heal itself as long as you drink plenty of fluids until the GI problems clear up. Sometimes, though, you're going to need medical help, especially if you're older, have a weakened immune system, or have severe or long-lasting symptoms. (Infants and pregnant women are also more likely to have a serious bout.) Here are the bacteria, toxins, viruses, and parasites in food that are most likely to make you sick.

	How soon you typically get sick	How long sickness typically lasts	Diarrhea	Vomiting	Fever	Abdominal pain	Other symptoms	Possible complications	WHAT TO DO
Bacillus cereus	4-16 hours	12-24 hours	✓	✓		✓			Stay hydrated
Campylobacter jejuni	2-5 days	2-10 days	✓ (may be bloody)	Sometimes		✓		Guillain-Barré syndrome	Stay hydrated
Ciguatera	6-24 hours	1 day-3 weeks	✓	✓			Numbness and tingling in hands and around mouth, pain and weakness in legs	Chronic ciguatera syndrome, which can last for months to years	**Get medical help**
Clostridium botulinum	2 hours-4 days	Weeks (months in severe cases)	Sometimes	Sometimes			Blurred vision, difficulty swallowing, slurred speech, dry mouth, respiratory failure	Long-term hospitalization in severe cases	**Get medical help immediately**
Clostridium perfringens	8-24 hours	1-2 days	✓						Stay hydrated
Cyclospora	7-10 days	May come and go for weeks to months	✓	Rare	Rare		Loss of appetite, weight loss, bloating, increased gas, fatigue		**Get medical help**
Enterotoxigenic *E. coli*	8-44 hours	3-7 days or more	✓	✓					Stay hydrated
***E. coli* O157:H7**	1-9 days	2-9 days	✓ (bloody)	✓		✓		Kidney failure from hemolytic uremic syndrome	**Get medical help immediately**
Listeria monocytogenes (mild illness)	9-48 hours	Days to weeks	✓	✓	✓		Flu-like symptoms		Stay hydrated
Listeria monocytogenes (severe invasive disease)	3-90 days	Days to weeks			✓		Headache, stiff neck, muscle ache, loss of balance, confusion	Meningitis, sepsis (blood infection), spontaneous abortions, stillbirths	**Get medical help**
Noroviruses	24-48 hours	12-72 hours	✓	✓	✓		Malaise		Stay hydrated
Salmonella	12-72 hours	4-5 days	✓	✓	✓	✓	Chills, nausea, pain in the joints, headache, muscle pain, malaise	Reactive arthritis, irritable bowel syndrome	Stay hydrated
Shigella	1-4 days	4-7 days	✓ (may be bloody)						**Get medical help**
Staphylococcus aureus	2-4 hours	Less than 48 hours	✓	✓					Stay hydrated
Vibrio parahaemolyticus	4 hours-4 days	2-6 days	✓	✓		✓			Stay hydrated
Yersinia	24-48 hours	2 days-3 weeks	✓			✓	May mimic appendicitis	Reactive arthritis	Stay hydrated

MEET THE ENEMY

***BACILLUS CEREUS*:** Often grows in foods that aren't kept at the proper temperature. Less commonly causes vomiting syndrome, which causes minimal diarrhea or abdominal pain and is associated with fried rice.

Common food sources: Meats, stews, gravies, leftovers.

***CAMPYLOBACTER JEJUNI*:** One of the most common causes of diarrhea in the U.S.

Common food sources: Undercooked poultry, raw milk.

CIGUATERA: Illness caused by an odorless, tasteless neurotoxin that contaminates some tropical reef fish and that is not destroyed by cooking.

Common food sources: Barracuda, amberjack, large groupers and snappers.

CLOSTRIDIUM BOTULINUM (BOTULISM)**:** Rare, but can be deadly if not treated. Caused by a toxin that can be inactivated by cooking.

Common food sources: Improperly home-canned foods.

***CLOSTRIDIUM PERFRINGENS*:** Often grows in foods that aren't kept at the proper temperature by restaurants, cafeterias, or caterers.

Common food sources: Improperly cooled or stored prepared foods, particularly meats and gravies.

CYCLOSPORA: A parasite spread by food or water contaminated with feces.

Common food sources: Imported berries, imported lettuce.

ENTEROTOXIGENIC *E. COLI*: The most common cause of "traveler's diarrhea."

Common food sources: Food or water that has been contaminated by feces.

***E. COLI* O157:H7:** A particularly dangerous strain that can be fatal if left untreated.

Common food sources: Undercooked beef, raw milk, unpasteurized juice, raw sprouts, contaminated water.

***LISTERIA MONOCYTOGENES*:** One of the leading causes of death from foodborne illness. Primarily strikes older adults, pregnant women, newborns, and people with weakened immune systems.

Common food sources: Raw milk, cheeses made with raw milk, deli meats.

NOROVIRUSES: The leading cause of foodborne illness in the U.S. (and on cruise ships).

Common food sources: Raw produce, mollusks (oysters, clams, mussels, scallops), food handled by an infected person.

***SALMONELLA*:** The leading cause of serious foodborne illness in the U.S.

Common food sources: Eggs, poultry, meat, raw milk, unpasteurized juice, raw produce.

***SHIGELLA*:** Typically spreads through person-to-person contact or contamination by food handlers.

Common food sources: Raw produce.

***STAPHYLOCOCCUS AUREUS*:** Introduced into foods by food handlers. Produces a toxin that causes severe vomiting.

Common food sources: Improperly refrigerated meats, potato salad, egg salad, cream-filled pastries.

***VIBRIO PARAHAEMOLYTICUS*:** Found in ocean water along the coast or in estuaries where ocean water mixes with river water.

Common food sources: Raw or improperly cooked oysters.

***YERSINIA*:** Infection may be misdiagnosed as appendicitis or Crohn's disease.

Common food sources: Undercooked pork, raw milk.

Key source: J. Glenn Morris, professor of infectious diseases and director of the Emerging Pathogens Institute at the University of Florida, and co-editor of *Foodborne Infections and Intoxications*.

Other sources: Centers for Disease Control and Prevention, Food and Drug Administration, Marcus Glassman (Food Safety Project, Center for Science in the Public Interest).

Sum Sum Summertime

BY KATE SHERWOOD

Nothing beats summer-ripe produce...which is why these three recipes really shine right around now. For a quick, light summer dinner, you can't beat 'em.

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

Grilled Chicken & Veggies with Tomato-Basil Dressing

Serves: 4 | Total Time: 30 minutes

- 1 cup chopped fresh tomatoes
- 1 Tbs. red wine vinegar
- 5 sprigs basil
- ½ tsp. kosher salt
- ¼ cup extra-virgin olive oil
- 1 lb. boneless, skinless chicken breast
- 2 red or yellow bell peppers, quartered lengthwise
- ½ lb. small zucchinis, quartered lengthwise
- 1 bunch scallions, trimmed

No grill? No problem. Just sauté the chicken and vegetables.

Combine the tomatoes, vinegar, basil, salt, and oil in a blender or food processor. Process into a smooth dressing. Transfer to a large bowl. • Put the chicken into a zip-lock bag and pound to ½" thickness. On a hot, clean grill, grill the chicken for 3-5 minutes per side and the peppers, zucchini, and scallions until well marked and tender-crisp (3-8 minutes). Remove to a cutting board. • Cut the chicken and vegetables into bite-sized pieces and toss with the dressing.

Per Serving: calories 300 | sodium 380 mg | total fat 17 g | sat fat 2.5 g | carbs 9 g | protein 27 g | fiber 3 g

Salmon Salad with Horseradish Sauce

Serves: 4 | Total Time: 20 minutes

- 1 Tbs. prepared horseradish
- 1 Tbs. dijon mustard
- ½ cup 0% greek yogurt
- ¼ tsp. kosher salt
- 1 Tbs. canola oil
- 1 lb. skinless salmon fillet
- 8 cups salad greens
- ½ cup sliced cucumber
- ¼ cup sliced radishes

You can also use canned no-salt-added salmon. (Bonus: canned salmon is almost always wild.) Just drain, remove any skin and bones, and toss with the horseradish sauce.

In a large bowl, whisk together the horseradish, mustard, yogurt, and salt. • Heat the oil in a large non-stick skillet over medium heat. Sauté the salmon until lightly browned and cooked through, 3-5 minutes per side. • Remove, allow to cool, break into large pieces, and gently toss with the horseradish sauce. • Put the salad greens on a platter. Top with the dressed salmon and the cucumber and radish.

Per Serving: calories 240 | sodium 320 mg | total fat 11 g | sat fat 1.5 g | carbs 6 g | protein 29 g | fiber 3 g

Grilled Tofu & Veggies with Tomato-Ginger Dressing

Serves: 4 | Total Time: 30 minutes

- 1 cup + 1 cup chopped fresh tomatoes
- 1 Tbs. minced fresh ginger
- 1 clove garlic
- ½ tsp. kosher salt
- 2 Tbs. rice vinegar
- 3 Tbs. + 1 Tbs. canola oil
- 14 oz. extra-firm tofu
- ½ lb. small zucchinis, quartered lengthwise
- 2 red or yellow bell peppers, quartered lengthwise
- 2 bunches scallions, trimmed

Not in the mood for tofu? Try grilled chicken, shrimp, or fish.

Combine 1 cup of the tomatoes with the ginger, garlic, salt, vinegar, and 3 Tbs. of the oil in a blender and purée into a smooth dressing. Transfer to a large bowl. • Cut the tofu into ½" slabs, blot with paper towels, and brush with the remaining 1 Tbs. of oil. • On a hot, clean grill, grill the tofu, zucchini, peppers, and scallions until well marked (3-8 minutes). Remove to a cutting board. • Cut the tofu and vegetables into bite-sized pieces and gently toss with the remaining 1 cup of tomatoes and the dressing.

Per Serving: calories 270 | sodium 260 mg | total fat 19 g | sat fat 1.5 g | carbs 14 g | protein 13 g | fiber 5 g

Photos: Kate Sherwood/CSPI.

RESTAURANT CONFIDENTIAL

TREME EATING 2014

BY JAYNE HURLEY & BONNIE LIEBMAN

When we were screening candidates for the first Xtreme Eating awards in 2007, we were shocked to see 1,500-calorie entrées. This year, nearly all of our "winners" hit (or just missed) the 2,000-calorie mark. And a few doozies topped 3,000 calories. You could take half home and *still* overeat.

The sad truth is that it's not hard to find Xtreme Eating winners. Virtually every chain has viable contenders. But this year, we're giving a special *XXXtreme* Eating award to The Cheesecake Factory. It took three of our nine coveted spots...and, as usual, it could easily have filled all nine. Congrats!

The information for this article was compiled by Paige Einstein.

You're Toast

"The 'Best' French Toast Ever!" says the Sunday brunch menu at **The Cheesecake Factory** (150 locations). "Our Extra Thick Slices of Rustic French Bread Baked and Grilled Golden Brown. Topped with Powdered Sugar and Served with Maple-Butter Syrup with Bacon or Grilled Ham."

The chain is talking about its **Bruléed French Toast**, which—even with the optional bacon—sure doesn't look like it's got 2,780 calories, 93 grams of saturated fat (almost a full work week's worth), 2,230 milligrams of sodium, and 24 teaspoons of sugar.

Don't just blame the 200-calorie side of bacon or ham. It's that largely invisible custard-like filling in the bread, plus the quarter cup of butter-infused syrup. To neutralize the calories in your brunch, you'd have to swim laps for seven hours.

Would you eat 14 slices of Aunt Jemima frozen Homestyle French Toast stuffed with 2½ (8 oz.) tubs of Kraft Philadelphia Original Cream Cheese Spread? Well, you pretty much just did.

And the dish isn't an anomaly. The Cheesecake Factory also offers a 2,900-calorie **French Toast Napoleon** ("Bruléed French Toast Stacked with Strawberries, Pecans and Chantilly Cream").

"Bruléed." That's French for "belly-building," right?

Photos: Paige Einstein/CSPI.

Monster Meal

"We are the burger authority, Zagat surveyors agree," says the menu at **Red Robin Gourmet Burgers** (470 locations).

Red Robin doesn't skimp on its Gourmet Burgers. Take the **A.1. Peppercorn**, which is topped with "hardwood-smoked bacon, melted Pepper-Jack, A.1. Peppercorn Spread, tomatoes and crispy onion straws" (AKA fried breaded onion strips).

But what makes the chain so special is its generosity. First, all "burgers are proudly served with **Bottomless Steak Fries**," so you can "proudly eat as many as you want." (You'll be bursting with pride.) Second, you can "Make it a Monster" by adding another (6 oz.) beef patty for just $1.99 more (unless you include future medical expenses). *Such* a bargain.

If your 1,670-calorie "Monster" burger and unlimited 370-calorie servings of fries make you thirsty, Red Robin offers Classic milkshakes (for $3.99). And, of course, you can "make it a Monster Milkshake with a refill tin" for just a buck more. Maybe you'd like a **Monster Salted Caramel Milkshake** ("A salty, sweet and sinful blend of caramel and Red Hawaiian Sea Salt"). Ka-ching! Here comes 1,500 more calories...and two days' more sodium.

The entire Monster meal delivers almost two days' worth of calories (3,540), 3½ days' saturated fat (69 grams), and four days' sodium (6,280 milligrams). Roughly half of each comes from the burger plus just *one* serving of Bottomless Steak Fries and half comes from the shake. And you can blame the shake for most of the estimated 38 teaspoons of added sugar.

It's like eating seven McDonald's Double Cheeseburgers washed down with a quart of Coke. Want to burn off the calories? You'd need a 12-hour brisk walk.

"Smile, you're at Red Robin," says the menu. And after you smile, make sure to burp.

> > > > >

The Big Flab

"The Big Slab" of St. Louis-Style Spareribs at **Famous Dave's** (200 locations) doesn't sound dainty. Each slab, which is "slathered with sauce over an open flame," yields nearly *1½ pounds* of meat.

But why stop there? To round out the meal (and his patrons), Dave throws in a "choice of two sides and a Corn Bread Muffin." If you go with the muffin, Famous Fries, and Wilbur (baked) Beans, you're talking 2,770 calories (more than a day's worth) and 54 grams of saturated fat seasoned with 4,320 milligrams of sodium and 14 teaspoons of sugar. That's the calories and sat fat of a bowl of Dave's Famous Chili plus two Georgia Chopped Pork Sandwiches with two sides of Dave's Cheesy Mac & Cheese and a Down Home Banana Pudding. Urp!

Not planning on mowing the lawn for 7½ hours after dinner? Expect the spareribs dinner to end up in *your* spare tire.

Cinco de Maxo

The **Chevys Super Cinco Combo** at **Chevys Fresh Mex** (51 locations) is "for those who take Fresh Mex SUPER seriously!" says the menu. "Two enchiladas: one beef, one chicken, a Crispy or Soft Beef Taco, a hand-rolled Pork Tamale and a handcrafted Chile Relleno."

Since that's clearly not enough food, it's "Served with Fresh Mex rice, our signature sweet corn tamalito and choice of homemade Beans a la Charra or Refried Beans made with bacon or Vegetarian Black Beans."

Even if you ignore the free basket of chips and the salsa that Chevys (like most Mexican restaurants) brings to your table just when you're hungriest, the Super Cinco delivers 1,920 calories, 36 grams of saturated fat, and 3,950 milligrams of sodium. You might as well eat 11 Taco Bell Crunchy Tacos.

Planning on playing 3½ hours of singles tennis tonight? Didn't think so. "You can have it all and eat it too!" says Chevys. And *look* like you ate it all, as well.

Photos: Paige Einstein/CSPI.

Pizza Padding

"BJ's unique pizza creations on flavorful, lightly sauced bakery pizza crust with BJ's signature five cheese blend," gushes the menu at **BJ's Restaurant and Brewhouse** (146 locations).

For things that are "lightly sauced," BJ's 11 Signature Deep Dish Pizzas (and, eventually, the chain's customers) are awfully heavy. Take the Small (9") **Signature Deep Dish Chicken Bacon Ranch Pizza**, which is smaller than BJ's Individual (11") Hand-Tossed Pizzas.

"Grilled garlic chicken, Applewood smoked bacon, jack and cheddar cheese, red onions, diced tomatoes and a drizzle of ranch" doesn't sound so heavy. But the pound of pizza dumps 2,160 calories, 30 grams of saturated fat, and 4,680 milligrams of sodium (three days' worth) in your lap.

Eating one BJ's Small is like eating *three* Pizza Hut Personal Pan Pepperoni Pizzas. You'd have to pedal your bike, nonstop, for 5½ hours to burn the pizza off.

"Brought to your table in the pan and fresh from the oven!" says the menu.

Think of it as a fresh layer of deep belly fat with your name on it.

Pasta Disasta

"Bow-Tie Pasta, Chicken, Mushrooms, Tomato, Pancetta, Peas and Caramelized Onions in a Roasted Garlic-Parmesan Cream Sauce" doesn't sound excessive. Sure, the **Farfalle with Chicken and Roasted Garlic** has a cream sauce, but how much harm could chicken, pasta, and some veggies do? We're talking **The Cheesecake Factory**, so you know this isn't going to end well.

Turns out the pasta's 2,410 calories and 63 grams of saturated fat (a three-day load) are what you'd get in *five* single-serve packages of Stouffer's frozen Classics Chicken Fettuccini Alfredo, each topped with a pat of butter. (The Farfalle has "only" 1,370 milligrams of sodium, a little less than a day's worth.)

No problem. You were planning on taking a five-hour jog tonight, right?

Hook, Line, & Crab Shack

"Born in the heart of Texas, we've been serving fun-loving people, great food, drink and memories since 1991," says Ignite Restaurant Group about its **Joe's Crab Shack** chain (130 locations). And Joe *has* been sending diners home with long-lasting memories...both in mind and body.

Take **The Big "Hook" Up** platter. It's got Great Balls of Fire ("seafood and crab balls full of jalapeños and cream cheese coated in panko breadcrumbs...served with ranch"), Fish & Chips ("flaky white fish hand dipped in a classic Samuel Adams beer batter...served with fries"), Coconut Shrimp ("jumbo shrimp hand dipped in shredded coconut with pineapple plum sauce for dipping"), Crab Stuffed Shrimp ("plump shrimp hand stuffed with crab"), Hushpuppies, and Coleslaw.

Talk about stuffed. The friedfoodaganza comes to 3,280 calories (your fill for today and half of tomorrow), 50 grams of saturated fat, and 7,610 milligrams of sodium (no more for you for the next five days). To burn that many calories, you'd have to play golf (without a cart or a caddie) for 11 straight hours.

If you ordered *two* of Red Lobster's Admiral's Feasts (fried shrimp, scallops, clam strips, and flounder), complete with French Fries and Cheddar Bay Biscuits, you'd get about the same calories...but less than half the sat fat.

What fun!

Reese's Obeses

"Reese's Peanut Butter Cups in Our Original Cheesecake with Layers of Delicious Fudge Cake and Caramel." There's nothing like finishing your **Cheesecake Factory** meal with a **Reese's Peanut Butter Chocolate Cake Cheesecake**, with its 1,500 calories, 43 grams of saturated fat, and 21 teaspoons of (mostly) added sugar. To turn the calorie clock back to zero, you'd have to do aerobics for 4½ hours.

It's like eating an entire four-serving (17 oz.) Sara Lee frozen Classic Original Cream Cheesecake topped with a cup of Breyers Chocolate Ice Cream.

"More than 40 legendary desserts…you should only pick a favorite after trying them all," says the menu. That Cheesecake Factory: looking out for its bottom line while ignoring its customers' growing bottoms.

Photos: Paige Einstein/CSPI.

Steak Out

At **Maggiano's Little Italy** (45 locations), you can order any steak "Contadina style." That means with "two Italian Sausage links, Crispy Red Vesuvio-Style Potatoes, Roasted Red & Yellow Peppers, Roasted Mushrooms, Caramelized Onions, Sun-Dried Tomatoes, Steak Jus, and Garlic Butter," according to Maggiano's The Chef's Table Blog.

"Many guests refer to this as a meal in itself and it is the WOW of all steaks."

Some meal. The **Prime New York Steak Contadina style**, for example, packs 2,420 calories. The 1,250-calorie steak alone is like eating five McDonald's Quarter Pounder beef patties. The 1,170-calorie Contadina-style "garnish" adds another four Quarter Pounder patties, with a Cheeseburger on the side.

The "meal" delivers 66 grams of saturated fat (3+ days' worth of damage) and 5,620 milligrams of sodium. To burn off its calories, you'd have to hit the rowing machine for 7½ hours.

WOW is right.

Eating Out: a Survival Guide

■ **Order from the lower-cal menu.** BJ's calls them Enlightened Entrees (less than 795 calories). At The Cheesecake Factory, they're SkinnyLicious (less than 590 calories). Or take home half of a regular dish for tomorrow.

■ **Skip the beef, bun, and fries.** At Red Robin, for example, that means ordering Bottomless Steamed Broccoli instead of Bottomless Steak Fries and getting a Simply Grilled Chicken Burger or The Garden Burger instead of a hamburger. And ask for your burger "bunless." Many chains will wrap it in fresh lettuce. (Adiós, 250 calories' worth of white flour.) Too bold? See if they have a whole-grain bun.

■ **Lighten your pizza.** Order a thin (preferably whole-grain) crust instead of deep-dish, pan, or hand-tossed. Ask for less cheese. Top with veggies, chicken, or seafood instead of sausage, beef, bacon, salami, or pepperoni.

■ **Ditch the chips and combos.** At Mexican joints, ask for no chips. Instead of a combo meal, order one or two chicken or fish tacos or enchiladas à la carte (around 250 calories each). Getting black beans instead of refried could save you 50 to 150 calories.

RIGHT STUFF

FREEKEH AT LAST

"Freekeh was created by accident nearly 2,000 years ago when a Middle Eastern village was attacked and their crop of young green wheat was set ablaze," notes the **Freekeh Foods Organic Freekeh** package. "Most folks would sulk over their misfortune, but the crafty villagers rubbed off the chaff, cooked it up and 'Eureka!' Freekeh was created."

Historical accuracy aside, the cracked and roasted green wheat is a find.

To see why, add water, bring to a boil, cover, and simmer for 20 to 25 minutes. You'll end up with a nutty, slightly sticky (in a good way), bulgur-like grain that you can use straight up as a side dish. Or try mixing with pesto, chopped cherry tomatoes, and roasted red peppers. Or with lentils, baby spinach, chopped apple, and a mustard vinaigrette.

When it comes to nutrients, freekeh is in the same ballpark as bulgur and quinoa. A ¾-cup serving of cooked freekeh delivers 4 grams of fiber and 6 grams of protein, along with a decent shot of folate, iron, magnesium, vitamin B-6, and zinc...all for just 130 calories.

Sodium? Zero for the **Original** and a low 150 milligrams for the **Rosemary Sage** and the **Tamari**. (A ¾-cup serving of most seasoned rice, couscous, quinoa, or other grain mixes socks you with two to three times that much.)

If you can't find Freekeh Foods, you can order from the company's website. (Even with shipping, a six-bag case is less than we paid at a local store.) Another brand to look for: **Freekehlicious**.

Isn't it time you set yourself freekeh?

freekeh-foods.com—(612) 240-1408
freekehlicious.com—(201) 297-7957

Photos: Lindsay Moyer/CSPI (left), Camilla Peterson/CSPI (right), Kate Sherwood/CSPI (bottom).

dish OF THE MONTH

Summer Zucchini

Cut 1 pound of small zucchinis into thin wedges. Sauté in 2 Tbs. of extra-virgin olive oil until lightly browned, 2-3 minutes. Sprinkle with ¼ cup of toasted sliced almonds, 1 Tbs. of chopped parsley, ⅛ tsp. of kosher salt, and freshly ground black pepper.

FOOD PORN

FRAPPUCCI-NO THANKS

"Three, two, one, sip!" goes the online ad for **Starbucks' summer Frappuccinos**. "We're super excited."

So are we! Remember when Starbucks introduced the original Coffee Frappuccino in the summer of 1995? Well, it's still around. And while a no whip venti (24 oz.) is loaded with some 14 teaspoons of added sugar, it has "just" 350 calories and three grams of saturated fat.

But that's *so* last century. This summer, you can pick up a venti **Caramel Ribbon Crunch Frappuccino** with 600 calories, 12 grams (more than half a day's worth) of sat fat, and (we estimate) 21 teaspoons of added sugar. "Yes, there are some other ingredients: coffee, milk, ice, whipped cream," says Starbucks' website, "but really this is all about ribbons and ribbons of caramel, over and over and over."

Goodbye, iced coffee. Hello, milkshake.

The **Mocha Cookie Crumble Frappuccino** has similar numbers, thanks to cookie bits, mocha sauce, vanilla syrup, chocolate chips, and whipped cream. And the **Caffè Espresso Frappuccino**, with its 460 calories, is "sure to set your summer off in the right direction." That would be toward a chubbier you.

Instead, try a grande Coffee Frappuccino Light. It's got 110 calories, zero sat fat (thanks to nonfat milk and no whipped cream), and around 4 teaspoons of added sugar (thanks to stevia, a no-calorie natural sweetener). Or order a grande nonfat Iced Caffè Latte (90 calories) or Iced Caffè Americano (20).

"Say yes to whipping life up," urges Starbucks. How about saying no to weighing yourself down?

starbucks.com—(800) 782-7282

quick tip

Avoid frozen foods with ice crystals on the package or (if you can see inside) on the food. It could mean that the food has been stored for too long or that it has thawed and been refrozen.