Nutrition Action

Prediabetes

WHAT MAY—OR MAY NOT—HELP **REVERSE IT**

Exercise myths

Easy beans!

SLEEP APNEA Now easier to treat

Cut the salt



PETER G. LURIE MD, MPH President, Center for Science in the Public Interest

Nearly half of U.S. adults have high blood pressure, which raises the risk of heart attack and stroke. Salt (sodium chloride) boosts blood pressure. In fact, cutting sodium consumption by about a third could prevent an

estimated 252,500 deaths over 10 years.

The problem: More than 70 percent of the sodium we consume is added to packaged or restaurant food before it

ever reaches our plate.

That's why the Center for Science in the Public Interest (Nutrition Action's publisher) has been fighting to limit sodium in the food supply since 1978. Here's the latest.

■ Sodium targets. In 2015, CSPI sued the FDA for failing

to limit sodium in foods. That led the agency to set voluntary 2½-year sodium targets in 2021. And this past August, the FDA proposed a new round of threeyear voluntary sodium limits. While that's a step in the right direction, the targets need to be more ambitious.

The food industry also needs to step up to the plate. Sodium levels in nearly half of all restaurant food categories rose between 2010 and 2022, says the FDA.

■ Salt-ridden restaurant food. According to our recent study of 2019 data, 5 percent of items at the top 91 U.S.

restaurant chains contain an entire day's sodium (2,300 milligrams), and 20 percent deliver more than half a day's worth.

Sit-down restaurants top the charts. For example, an order of Loaded Waffle Fries at Friendly's has 3,646 mg, a Crispy Shrimp Platter at Ruby Tuesday has 4,990 mg, and a Big Bordurrito with Chicken at On the Border has 6,780 mg, according to the restaurants' own data.

Thanks in part to CSPI's efforts, New York City and Philadelphia now require menus at chain restaurants to post warning labels on items that contain a day's worth of sodium or more.

Until restaurants do more to cut the salt, you'll need to check online to see

> how much sodium they're dishing out. Chains with 20 or more locations are required to disclose sodium and most other Nutrition Facts.

■ Potassium salt. Switching from

sodium chloride to potassium chloride can help companies cut sodium. That's a

win-win, because potassium can help lower blood pressure.

But potassium chloride sounds like an unfamiliar chemical, so in 2019, CSPI urged the FDA to allow labels to call it "potassium salt." In 2020, the FDA agreed.

We'll keep pushing the food industry and the FDA to cut salt. Until then, minimize high-sodium foods and load up on (potassium-rich) fruits and vegetables.



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An order of Chili's Chicken Fajitas has two

days' worth of sodium (4,640 milligrams).



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Prediabetes WHAT MAY-OR MAY NOT-HELP REVERSE IT BY BONNIE LIEBMAN

Nearly 40 percent of U.S. adults—and 50 percent of those over 65—have prediabetes. Eight out of 10 don't know it. On the upside, the toolbox for preventing or reversing prediabetes is expanding. Here's what to know.

Prediabetes isn't pre-disease.

"Don't let the 'pre' fool you," says the Centers for Disease Control and Prevention. "Prediabetes puts you at increased risk of developing type 2 diabetes, heart disease, and stroke."

The good news: If you have prediabetes, losing excess weight and boosting exercise can help keep type 2 diabetes at bay. That was one takeaway from the Diabetes Prevention Program (DPP), a trial involving 3,234 people with prediabetes.

"The lifestyle intervention reduced the risk of type 2 diabetes by 58 percent," says Dana Dabelea, professor of epidemiology and pediatrics at the University of Colorado.¹

And keeping your blood sugar under control may protect your blood vessels even if you never get diabetes.

"After the trial ended, everyone in the DPP was offered the lifestyle intervention," explains Dabelea

Over the next 15 years, the participants who kept a lid on their blood sugar did better.

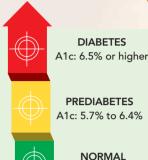
"People who did not develop diabetes had

nearly a 30 percent lower prevalence of damage in small blood vessels compared to those who developed diabetes," notes Dabelea.² That damage occurs mostly in the eyes, nerves, and kidneys.

And even among people who stayed in the prediabetes range, the lower their hemoglobin A1c, the lower their risk of damage to tiny blood vessels in the eyes.³

"The higher the A1c, the higher the risk, even before you get to diabetes," says Dabelea.

Hemoglobin A1c, a longterm measure of blood sugar, is the easiest way to test for diabetes.



A1c: Below 5.7%

2 Cut the crappy carbs.

"A stunning 40 percent of what we eat is added sugars and refined carbs," says Christopher Gardner, professor of medicine at the Stanford University School of Medicine.

"Most people don't do a good job of getting rid of those

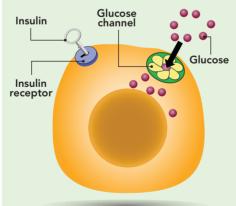
crappy carbs."

Many diets—from Mediterranean to keto to Paleo—do get that job done, he points out.

"Looking across all the popular diets, you see no added sugar, no refined grain, lots of vegetables, and whole—rather than ultra-processed—foods," says Gardner.

In a recent trial, he randomly assigned 33 people with prediabetes or type 2 diabetes to eat a keto (very-low-carb) or Mediterranean diet for 12 weeks each. 4 Both diets were low in added sugars and refined grains and rich in non-starchy vegetables.

Diabetes 101



nsulin acts as a key that allows blood sugar (glucose) to enter the body's cells, where it is either burned for fuel or stored.

But in some people, the key can't open the lock.

To compensate for that "insulin resistance," the

pancreas pumps out more and more insulin, but it's not enough to keep blood sugar from creeping up to "prediabetes" levels. After years of straining to keep up, the pancreas starts to fail and blood sugar reaches the "diabetes" range.

(That's type 2 diabetes. In type 1 diabetes, the body's immune system destroys the pancreas's ability to make insulin. Type 1 accounts for about 5 percent of diabetes.)

A key difference: People could eat fruits, beans, and whole, unprocessed grains on the Mediterranean diet, but not on the keto diet.

The main results: "Hemoglobin A1c fell on both diets," says Gardner.

"LDL—so-called bad cholesterol was worse for keto, but triglycerides were better." And people lost about 15 pounds on each diet.

"If it's a wash, why get rid of the beans, fruits, and grains?" asks Gardner. "They provide far more variety, so the Mediterranean diet is more appealing and easier to stick with."

Think twice about a continuous alucose

"Meet your metabolism." "See how your body responds to food in real time," says Signos.com.

Levels, Lingo, Nutrisense, Signos, Stelo. They're just some of the websites that sell continuous glucose monitors (CGMs). Since early 2024, when the FDA cleared the first device that didn't need a prescription, the market for CGMs has exploded.

They're not cheap. Most charge roughly \$200 to \$500 per month, depending on whether you sign up for 1, 3, 6, or 12 months.

The CGMs are all made by one of two companies: Abbott or Dexcom. And CGMs sold directly by those companies are cheaper. Abbott's Hellolingo.com offers a 2-week CGM for just \$49, and Dexcom's Stelo.com sells a 1-month subscription for \$89.

For people with type 1—and some with type 2—diabetes, a CGM that sends alerts for low blood sugar can replace frequent finger sticks to test blood sugar levels. Is a CGM worth the cost for everyone else? Here's what to keep in mind:

■ Are CGMs accurate? CGMs measure glucose levels in the space between cells just under your skin. The devices can detect the wide swings in

Are You at Risk for Diabetes?

Write vour

vvrite yo					
score in the b	Height	Height Weight (lbs.)			
How old are you?	4′10″	119–142	143–190	191+	
Less than 40 years (0 points)	4′11″	124–147	148–197	198+	
40–49 years (1 point)	5′0″	128–152	153-203	204+	
50–59 years (2 points)	5′1″	132–157	158–210	211+	
60 years or older (3 points)	5′2″	136–163	164–217	218+	
Are you a man or a woman?	5′3″	141–168	169-224	225+	
Woman (0 points) Man (1 point)	5′4″	145–173	174-231	232+	
Have you ever been diagnosed	5′5″	150–179	180-239	240+	
with gestational diabetes?	5′6″	155–185	186–246	247+	
Yes (1 point) No (0 points)	5′7″	159–190	191–254	255+	
Do you have a mother, father,	5′8″	164–196	197–261	262+	
sister, or brother with diabetes?	5′9″	169–202	203-269	270+	
Yes (1 point) No (0 points)	5′10″	174–208	209–277	278+	
Have you ever been diagnosed	5′11″	179–214	215-285	286+	
with high blood pressure?	6′0″	184–220	221–293	294+	
Yes (1 point) No (0 points)	6′1″	189–226	227-301	302+	
Are you physically active?	6'2"	194–232	233–310	311+	
Yes (0 points) No (1 point)	6′3″	200-239	240-318	319+	
What is your weight category?	6'4"	205–245	246-327	328+	
(see chart at right)		(1 point)	(2 points)	(3 points)	
Add u your sco		You weigh less than the amount in the left column (0 points)			
If you scored 5 or higher: You are at increased risk for prediabetes and type 2 diabetes. However, only a blood test can tell for sure.	Source:	Centers for Disc	ease Control ar	nd Prevention	
If you are African American, Hispanic/Latin Asian American, or Pacific Islander, you are diabetes. (Asian Americans are at increase weight—about 15 pounds lower than weight	at higher risk d risk for type	for prediabe 2 diabetes st	tes and type arting at a lo	2	

blood sugar that occur in people with diabetes. But for smaller swings, their results may be less reliable.

"We often found different glucose responses to the same meals when people without diabetes simultaneously wore two different CGMs," says Kevin Hall of the National Institute of Diabetes and Digestive and Kidney Diseases.5

And you can't jump to conclusions about foods based on one CGM reading, adds Hall.6

"Our CGM responses to a meal on one day didn't reliably predict the CGM response of the same person to the same meal on another day."

■ Will CGMs help you lose weight? "As glucose rises, so does insulin," explains Lingo. "And when insulin is chronically elevated, it can impair the

body's ability to burn fat for energy. That's why having steady glucose levels can help with losing and maintaining weight."

But there's no good evidence that lower—or "steady"—glucose levels cause people to lose weight.

"When we put people on a low-carbohydrate diet, they had much lower glucose levels on CGMs after meals than when they ate a high-carbohydrate diet," says Hall. "But they didn't lose more body fat on the low-carbohydrate diet."7

Likewise, CGM results didn't track with weight loss in Gardner's study.

"When people were on the Keto diet, the CGM data showed lower average blood sugar levels than when they were on the Mediterranean diet, but we saw no difference in overall

weight loss," he points out.

It's not as though the calories in protein and fat don't count. Ditto for the calories in fructose, even though it raises blood sugar far less than glucose.

"The CGM is a shiny new toy, and it has led some people to do whatever they can to blunt a normal glucose response, as if any kind of spike is unhealthy," notes Gardner.

"But a spike doesn't mean you're going to gain weight. If you eat some carbs, it's normal for your glucose to go up. Your body secretes insulin, and you put the glucose away."

■ Don't be alarmed by high glucose readings. When researchers had 1,175 people aged roughly 50 to 70 wear a CGM for a week, those without diabetes or prediabetes spent three hours a day with their blood sugar above what many experts—and many CGMs—consider a healthy range (70 to 140 milligrams per deciliter).8

(People with prediabetes spent 5½ hours—and those with diabetes averaged 13¾ hours—above that range.)

"Don't panic," says Nicole Spartano, assistant professor of medicine at the Boston University Chobanian & Avedisian School of Medicine, who led the study.

"We don't yet know what CGM levels are of concern for people without diabetes or prediabetes."

■ A CGM might get you moving.

"You can take a bite out of a glucose spike by doing 15 minutes of exercise 30 minutes after your meal," says Spartano, citing a study on older people with prediabetes and obesity.⁹

"Seeing that change on a CGM might increase your physical activity. But that may only last a few weeks, as we see with wearables like a Fitbit."

Exercise can reverse prediabetes.

Exercise can curb your risk of type 2 diabetes. 10 Researchers are

trying to figure out how...and which kind of exercise is best.

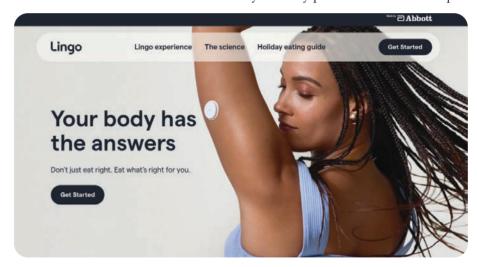
"We wanted to tease out whether high- and moderate-intensity exercise had similar benefits," says Steven Malin, director of the Applied Metabolism & Physiology Laboratory at Rutgers University.

His team randomly assigned 31 sedentary older adults with prediabetes and obesity to one of two groups that did an hour of cycling every day for two weeks.¹¹

blood sugar levels didn't rise as much as it did when they entered the study. And their muscle cells were less insulin-resistant than when the study started.

What's more, exercise revved up the insulin-secreting cells in the pancreas. 12 "Beta-cell function improved similarly in the two groups," notes Malin.

His bottom line: "Get out there and move. An hour a day should help your body produce insulin and help



Lingo and Stelo offer continuous glucose monitors at a lower cost than most other websites. But don't expect them to help you lose weight.

"Both groups burned the same 350 calories at each workout," explains Malin. "But the continuous moderate-intensity exercise group cycled at about 70 percent of their maximum heart rate for an hour, while the high-intensity interval group alternated between 3 minutes at 90 percent of their maximum and 3 minutes at 50 percent for an hour."

The results: "About 40 percent of both groups reversed their prediabetes," says Malin. "That was pretty impressive for a two-week trial."

(Of course, their prediabetes could have returned after the trial, especially if they stopped the exercise.)

What did the exercise change? When both groups took a glucose tolerance test—that is, when they drank a hefty dose of glucose—their manage your blood glucose levels. It can be high-intensity interval exercise, but walking or biking is okay, too."

5 Obesity meds work...and more are coming.

In a recent trial on people with prediabetes and obesity, 81 percent of semaglutide takers—but only 14 percent of placebo takers—no longer had prediabetes after one year.¹³

(The trial was funded by Novo Nordisk, which sells semaglutide as Ozempic for diabetes and Wegovy for obesity.)

Remarkable? Yes. Surprising? No, since the drug is approved to treat not just obesity but—given its ability to

The Bottom Line

lower blood sugar—type 2 diabetes.

(The same goes for tirzepatide, which is sold as Mounjaro for diabetes and Zepbound for obesity.)

How do the drugs reverse prediabe-

"They're improving insulin secretion from the beta-cells," explained Ania Jastreboff, associate professor of medicine at the Yale School of Medicine, in Yale's recent "Health & Veritas" podcast.

And "if you lose weight, you're improving insulin sensitivity," she added, "because you're offloading the work that the beta-cell has to do."

(Jastreboff has led several clinical trials on tirzepatide and retatrutide funded by Eli Lilly and has served on the Scientific Advisory Boards for Eli Lilly, Novo Nordisk, Pfizer, Amgen,

- The best way to dodge prediabetes or type 2 diabetes is to lose (or not gain) extra pounds.
- Cutting carbs—especially white flour, added sugars, and juices—may help lower blood sugar even if you don't lose weight.
- Replace unhealthy carbs with unsaturated fats like olive or canola oil, nuts, and fish. Fill half your plate with nonstarchy vegetables.
- Aim for 30 to 60 minutes of brisk walking or other aerobic exercise daily.
- If you have prediabetes, find a CDC-recognized in-person or online Diabetes Prevention Program. (Go to cdc.gov/diabetes-prevention.)
- If you have obesity, ask your physician about Ozempic-like medications. (So far, the drugs have been approved for treating type 2 diabetes but not prediabetes.)

and several other companies.)

How do the drugs trigger weight

Semaglutide is a long-acting version of a hormone released by the intestine —GLP-1 (glucagon-like peptide-1) that slows gastric emptying and makes you feel full. Tirzepatide leads to even more weight loss because it's a longacting version of GLP-1 plus GIP (glucose-dependent insulinotropic polypeptide), which has similar effects.

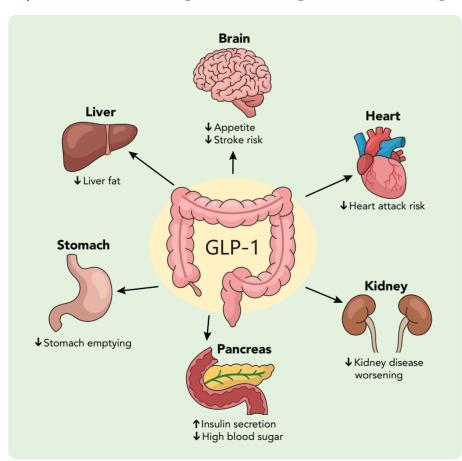
But "this is just the tip of the iceberg," Jastreboff noted. Among the dozens of meds in the pipeline:

- Survodutide. Long-acting GLP-1 plus glucagon, a hormone that curbs food intake.14
- Retatrutide. Long-acting GLP-1 plus GIP and glucagon. 15,16
- CagriSema. A long-acting version of GLP-1 plus amylin, a hormone that slows stomach emptying.17

The drugs are "all based on these hormones that are stimulated when we eat," explained Jastreboff.

Also in the works: drugs to curb the loss of muscle and lean tissue that occurs whether you lose weight with drugs, surgery, or diet.

Drugs that extend the life of GLP-1 "have been around for over 20 years," Jastreboff noted. But when it comes to the newer drugs' safety, "we have to do our due diligence." Stay tuned.



Semaglutide (sold as Ozempic for diabetes) is a long-acting version of the GLP-1 hormone secreted by the gut. Here are some of its effects (seen in industry-sponsored trials). Some effects are partly due to weight loss.

¹ N. Engl. J. Med. 346: 393, 2002.

² Lancet Diabetes Endocrinol. 3: 866, 2015.

³ Diabetes Care 45: 2653, 2022

⁴ Am. J. Clin. Nutr. 116: 640, 2022

⁵ Am. J. Clin. Nutr. 112: 1114, 2020.

⁶ Am. J. Clin. Nutr. in press.

⁷ Nat. Med. 27: 344, 2021.

⁸ J. Clin. Endocrinol. Metab. 2024. doi:10.1210/ clinem/dgae626.

⁹ Diabetes Care 36: 3262, 2013.

¹⁰ Diabetes Care 44: 43, 2021.

¹¹ Med. Sci. Sports Exerc. 50: 2058, 2018.

¹² J. Appl. Physiol. 125: 1979, 2018

¹³ Lancet Diabetes Endocrinol. 12: 631, 2024.

¹⁴ Lancet Diabetes Endocrinol. 12: 162, 2024.

¹⁵ N. Engl. J. Med. 389: 514, 2023.

¹⁶ Lancet 402: 529, 2023.

¹⁷ Lancet 402: 720, 2023.



Nearly 30 million U.S. adults have sleep apnea, say experts. Roughly 80 percent of them don't know it. If you keep your bed partner up with your snoring, wake up gasping for air in the middle of the night, fall asleep while stopped at red lights, or wake up with morning headaches, you may be one of them.

SLEEP APNEA 101

"Sleep apnea is a common problem where people stop breathing in their sleep," says Atul Malhotra, research chief of pulmonary, critical care, and sleep medicine at the University of California, San Diego. Those pauses in breathing—the apneas—happen when the airway at the back of the throat collapses for brief periods.

"Apneas are often worse when you

are lying on your back because gravity causes the tongue to fall backward into the airway," says Virend Somers, a cardiologist at the Mayo Clinic.

"Sleeping on your side can help reduce snoring and apneas because you don't have gravity pulling the tongue and lower jaw backward."

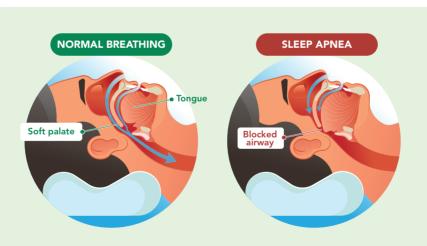
"Apnea episodes, by

definition, last at least 10 seconds," notes Steven Feinsilver, director of the Center for Sleep Medicine at Northwell Lenox Hill Hospital in New York.

"But you're usually not aware of it." Repeated lapses in breathing can have consequences.

"When you stop breathing, you often wake up," says Malhotra. You may not remember waking up, but those repeated awakenings result in poor, fragmented sleep and sleepiness the next day.

What's more, during an apnea, "blood oxygen levels can be surpris-



In people with sleep apnea, the airway collapses and causes brief lapses in breathing up to hundreds of times a night.

> ingly low," says Feinsilver. "It's brief, but that could be happening 20, 30, 40 times or more per hour, and you're doing it every night over years."

HEALTH TROUBLES

Over the short term, people with sleep apnea may suffer from worse mood, difficulty concentrating, and lower quality of life because they don't sleep well.1

"Sleepy people can get into trouble," says Feinsilver.

Motor vehicle accidents, for example, are about two to five times more likely in people with untreated sleep apnea than in those without.2,3

Night after night of disrupted breathing also takes a long-term toll.

"When you stop breathing, oxygen levels fall and carbon dioxide goes up," notes Somers. That triggers the "fight or flight" response.

"The blood vessels tighten, which

raises blood pressure," he adds.

Sleep apnea is also linked to a higher risk of heart attacks, strokes, heart failure, and atrial fibrillation (an irregular heartbeat that raises the risk of a stroke).4

WHO'S AT RISK?

Some risk factors for sleep apnea are out of your control.

For example, your odds of developing apnea

rise with age. And men are two to three times more likely than women to have it.

"We don't know why, though it may

be due to sex hormones like estrogen," says Somers. "More women develop sleep apnea after menopause, when estrogen levels fall."5

What else matters?

A crowded airway

The shape of your airway—and the tissue that surrounds it—also matters.

"A lot of your risk has to do with how much room you have in the back of your throat," explains Feinsilver.

If you have a large tongue, a small jaw, or a long soft palate (the back of the roof of your mouth), the airway may be more crowded.

"One of the best clues to having sleep apnea is neck size," Feinsilver notes.

Apnea is more common in women with a neck circumference of at least 16 inches and in men with a neck that's 17 inches or more.5

down, weight around the belly is pushing against the diaphragm, which makes it a little harder to breathe," says Malhotra.

But it's not just weight in the midsection that matters. "One of the places that humans deposit fat is in the neck," says Feinsilver, "and the airway may be very sensitive to even small changes in the amount of fat surrounding it."

you have sleep apnea and how severe

"The typical metric for severity is the apnea-hypopnea index," explains Malhotra. "Apneas are lapses in breathing and hypopneas are reductions in breathing. If you add those up per hour of sleep, that gives you a yardstick of severity." Less than 5 is considered normal. Five to 14 is mild, 15 to 29 is moderate, and 30 or more is severe.



A CPAP is the gold standard treatment for sleep apnea. Newer machines are quieter, and masks are less cumbersome than CPAPs of the past.

Excess weight

"Obesity is the most common risk factor for sleep apnea that's reversible," says Malhotra. "For every excess pound you gain, your risk for sleep apnea goes up a little bit."

In one study, a 10 percent increase in weight was linked to a six-fold higher risk of moderate-to-severe sleep apnea.6

And where you carry the weight is more important than how much you weigh: Those with a larger midsection are at greater risk than those who hold their weight in their hips and thighs.⁵

How might excess weight trigger sleep apnea? "When you're lying

DO YOU HAVE SLEEP APNEA?

No surefire sign or symptom can tell you if you have sleep apnea. "But if you snore at night and you're sleepy during the daytime, see your doctor," says Feinsilver.

While most people with sleep apnea snore, not everybody who snores has sleep apnea. "But snoring is a clue," notes Feinsilver, "because some people who snore completely close off the back of the throat and stop breathing."

Your physician can decide if it makes sense to do a sleep test, which records oxygen levels, breathing patterns, heart rate, and more while you sleep. The test can determine if

HOW TO TREAT SLEEP APNEA

"The treatments for sleep apnea have a reputation of being cumbersome or intolerable," says Malhotra.

"That's not true. There are good treatments out there."

Continuous positive airway pressure

The first-line treatment for obstructive sleep apnea: a continu-

ous positive airway pressure (CPAP) device.

"A CPAP is a little box that you plug into the wall, and it generates just enough air pressure to keep the airway from collapsing," Feinsilver explains.

And CPAPs have come a long way. They make almost no noise, and for most people, gone are the days of wearing a mask that covers your nose and mouth. "Most people use what looks like a flat, flexible tube that sits under the nostrils," says Feinsilver.

"The hard part is getting used to having something on your face when you sleep. But once you have a mask that fits, if you have significant apnea, a CPAP improves your sleep so much that that's not a hard sell."

"I tell people, 'When you see this machine, you know it must work because nobody would sleep with this stupid-looking thing otherwise.'"

Give yourself a month or so to get used to it, he suggests.

That said, "CPAP is not for everybody," says Malhotra. "There are some people who just don't tolerate it."

Hypoglossal nerve stimulation

For people with moderate-to-severe sleep apnea who can't tolerate a CPAP, one approach to keeping the airway open is to stimulate the hypoglossal nerve, which controls the tongue.

That's the premise behind Inspire, the only device approved by the FDA that does that.

In an outpatient procedure, a surgeon implants a battery-powered pacemaker into the chest, a breathing sensor that activates the device when you inhale, and a lead that connects to the hypoglossal nerve.

While Inspire is generally well tolerated, infections can occur. And surgery is sometimes needed to remove or reposition the device.⁷

"It's a pacemaker," explains Feinsilver. It works like a cardiac pacemaker that stimulates the heart muscle.

Inspire "delivers gentle pulses that move your tongue out of the way each time you take a breath, keeping your airway open while you sleep soundly," says the company's website.

In a company-funded trial of 126 adults with obstructive sleep apnea, the number of complete or partial breathing lapses fell from roughly 29 to just 9 per hour after a year of using Inspire.⁸

It typically works well, but it's not for everyone, says Feinsilver. "It requires an operation, and that will turn some people off."

Oral devices

You can also wear "oral devices" to help keep your airway open. One popular type "has a top and a bottom piece that anchor your teeth, and it holds your lower jaw slightly forward compared to the upper jaw," says Feinsilver.

"By just pulling the jaw forward a little bit, you're also pulling the tongue forward, so it gives you more room in the back of the throat. It's a simple thing, and people like it because it's easy for travel and nobody sees that you're using it."

"It works pretty well for mild apnea," adds Feinsilver, "but it's usually not enough to treat severe apnea."⁵

What's more, the devices have to be custom-made by a dentist. "If you want to try an oral device, have an experienced dentist do it," cautions Feinsilver. "You can really mess up the jaw joint if you do it wrong."

used a CPAP got tirzepatide or a placebo.

After one year, the number of lapses or reductions in breathing per hour in the tirzepatide takers dropped by about 55 percent compared to the placebo takers in those using a CPAP and by 48 percent in those not using a CPAP.¹⁰

What's more, in the tirzepatide groups "we saw a nearly 20 percent reduction in weight, and improvements in systolic blood pressure and high-sensitivity C-reactive protein, a cardiovascular risk marker," says Malhotra.

Apnea improved so much, in fact, that around half of the tirzepatide takers in the second study may no longer need a CPAP.

Does that mean that they were



Some oral devices pull the jaw forward to keep the airway open. They're best for people with mild apnea.

Weight loss

For people with obesity, studies show that "the more weight you lose, the less sleep apnea you have," notes Malhotra.⁹

He looked at the impact of tirzepatide (sold as Zepbound for weight loss and Mounjaro for diabetes) on sleep apnea in people with obesity in two recent studies funded by Eli Lilly, which makes the drug.

"In trial one, 234 people who couldn't tolerate CPAP were randomized to get tirzepatide or a placebo," explains Malhotra.

In the second trial, 235 people who

"cured" of their sleep apnea?

"Where are they in 5 or 10 years?" asks Malhotra.

"We'd need to see if the results are sustained long term before we can use that word."

- ¹ sleepeducation.org/wp-content/uploads/2023/ 03/obstructive-sleep-apnea-indicator-report.pdf.
- ² Sleep 38: 341, 2015.
- ³ Sleep 39: 967, 2016.
- ⁴ Circulation 144: e56, 2021.
- ⁵ Int. Forum Allergy Rhinol. 13: 1061, 2023.
- 6 JAMA. 284: 3015, 2000.
- ⁷ Otolaryngol. Head Neck Surg. 164: 443, 2021.
- ⁸ N. Engl. J. Med. 370: 139, 2014.
- ⁹ Sleep Med. 121: 26, 2024.
- ¹⁰ N. Engl. J. Med. 391: 1193, 2024.

Prostate cancer? Diet & exercise can't hurt.



Curbing insulin may help some men on "active surveillance" for their lowgrade prostate cancer.

Scientists randomly assigned 100 men with prostate cancer grade group 1 or 2 and excess weight to a control group or to cut 500 to 1,000 calories a day and do 150 minutes of exercise per week.

After 6 months, the

diet-and-exercise group had lost 15 pounds, and their fasting insulin and insulin resistance dropped by about 24 percent. The control group lost 4 pounds, and their fasting insulin and insulin resistance rose by about 7 percent. (Not surprisingly, cancer progression didn't vary in just 6 months.)

WHAT TO DO: On active surveillance? Try diet and exercise to curb insulin levels. If insulin fuels cancer growth, as studies suggest, that may keep your cancer from progressing. Bonus: It should also help prevent type 2 diabetes.

Cancer 130: 2108, 2024

Heated mittens for arthritis?

Can heated mittens help with hand osteoarthritis? Researchers randomly assigned 200 people with hand osteoarthritis to wear battery-heated or non-heated mittens for at least 15 minutes a day.

After 6 weeks, the two groups reported no significant difference in function. The heated-mitten wearers did report slightly less pain and stiffness, but they might have overestimated those benefits because they knew that their mittens were heated.

WHAT TO DO: Got hand arthritis? Try heating them (with or without mittens), but don't expect miracles.

BMJ 387: e078222, 2024



Semaglutide for knees



Semaglutide (sold as Ozempic for type 2 diabetes and Wegovy for obesity) may relieve pain caused by osteoarthritis in your knees.

Scientists randomly assigned 407 adults with obesity and knee osteoarthritis to take semaglutide (2.4 milligrams) or a placebo each week. (The study was funded by Novo Nordisk, which sells the drug.)

After 68 weeks, pain scores had improved by 42 points in the semaglutide takers versus 28 points in the placebo takers (on a scale of 1 to 100). The semaglutide takers also reported less stiffness and were able to walk farther on a 6-minute walk test. And weight dropped by 14 percent in the semaglutide group but only by 3 percent in the placebo group.

WHAT TO DO: Got obesity and osteoarthritis? Ask your doctor about semaglutide.

N. Engl. J. Med. 391: 1573, 2024.



Aspirin & fish oil fail to protect eyes

People with diabetes have an elevated risk of retinopathy (damage to tiny blood vessels in the retina) and maculopathy (damage to the center of the retina).

In a 6½-year trial on 7,360 people with diabetes, those risks were no lower in people randomly assigned

to take a daily aspirin (100 milligrams) or fish oil supplement (460 mg of EPA plus 380 mg of DHA) than in those who took matching placebos.

WHAT TO DO: Don't expect aspirin or fish oil to lower your risk of diabetic retinopathy or maculopathy.

Ophthalmol. 131: 526, 771, 2024



Meat & satiety?

Does meat keep you feeling full longer than vegetable protein?

Researchers randomly assigned 25 young men to eat a 750-calorie pasta with bolognese sauce that was made with either beef or texturized pea and oat protein at noon.

At 2:30 p.m., when the men were told to eat as much quiche with potatoes and carrots as they wanted, they ate more calories if they had eaten the meat sauce (230) than if they had eaten the pea-oat sauce (180) earlier.

WHAT TO DO: Don't assume that meat keeps you full the longest.

Nutrients 16: 3407, 2024.

Can coffee help you stay sharp?

Drinking coffee is linked to higher scores on cognitive tests in people with atrial fibrillation, an abnormal heart rhythm that raises the risk of a stroke.

In a study of 2,413 older people with atrial fibrillation, those who drank



2 to 5 cups of coffee a day had higher scores on a set of cognitive tests than those who drank less than 1 cup a day.

WHAT TO DO: This kind of study can't prove that coffee can keep you sharp if you have atrial fibrillation because something else about coffee drinkers may explain their cognitive scores. But since there's no good evidence that giving up coffee or caffeine will lower your risk of atrial fibrillation, enjoy. Just keep in mind that a Starbucks grande (16 oz.) is 2 cups.

J. Am. Heart Assoc. 2024. doi:10.1161/JAHA.124.034365

Seeing green



Leafy greens and fish may help protect your vision.

Researchers tracked 2,697 eyes (in 1,757 people) with early or intermediate agerelated macular degeneration (AMD). After 5 years, people who reported eating at least 2.7 servings of green leafy vegetables a week had a 25 percent lower risk of moving to a more severe level of macular degeneration than those who reported eating no leafy greens.

And those who ate at least two servings of fish per week had a 21 percent lower risk than those who ate less.

WHAT TO DO: Salad and salmon, anyone? This kind of study can't prove that greens and fish protect eyes because something else about people who eat those foods may explain their lower risk.

However, leafy greens are rich in lutein and zeaxanthin, which helped slow macular degeneration in people with intermediate or advanced—but not early—AMD in earlier studies (see Jul./Aug. 2021, p. 3).

Am. J. Clin. Nutr. 2024. doi:10.1016/j.ajcnut.2024.08.019.



Diets that may keep kidneys in shape

What's the best diet to lower your risk of chronic kidney disease?

Researchers tracked 106,870 participants in the UK Biobank study. After 9 years, eating either a DASH (Dietary Approaches to Stop Hypertension) diet or a *healthy* plant-based diet was linked to about a 22 percent lower risk of chronic kidney disease. Both diets are rich in fruits, vegetables, whole grains,

beans, and nuts. In contrast, an *unhealthy* plant-based diet—packed with white bread, potatoes, and sweets—was linked to a 27 percent *higher* risk of kidney disease.

WHAT TO DO: This kind of study can't prove that a healthy diet will protect your kidneys, but hypertension and type 2 diabetes are the biggest threats to them.

Am. J. Clin. Nutr. 2024. doi:10.1016/j.ajcnut.2024.12.005.

We all know that beans—beans, split peas, lentils, and chickpeas, that is—are healthy. Add fast, great tasting, and modest in sodium (unless noted, no more than 400 mg per serving), and you've got these winners.



NET WY. 10 OT 1283

The sofrito secret

"Our ready-to-eat Latin staples only taste like you spent all day in the cocina," says Fillo's website. Why?

It's "that punch of fresh vegetables cooked in extra virgin olive oil" known as "sofrito, the super-flavorful base behind most Latin American dishes."

A sofrito is made by sautéing and then slowly cooking finely chopped vegetables like peppers, onions, tomatoes, and garlic in olive oil to concentrate their flavor. And Fillo's sofritoit's the starter for all their seasoned beans—made the brand a top pick among our taste testers.

Try Fillo's great-tasting lower-sodium varieties (these all have less than 400 mg per ½ cup):

- Cuban Black Beans Sofrito. A do-it-all bean that would be at home in tacos or served with roasted chicken with vegetables or eggs with avocado.
- Peruvian Lentils Sofrito. Toss them right into a chopped salad (no need to heat!) or microwave and serve atop a warm grain bowl with vegetables.
- Mexican Mayocoba Sofrito. The Mayocoba is a mild-tasting pale-yellow bean. Fillo's pick up flavor from onion, garlic, olive oil, and ancho chile.
- Refried Mild Cranberry Beans. Creamy and versatile. Keep a pouch on standby for when a beanand-cheese quesadilla craving hits. (Add hot sauce if you want some heat.)

If your supermarket doesn't stock Fillo's, see if it has A Dozen Cousins. Its Cuban Black Beans and Mexican Pinto Beans get their flavor from ingredients like onions, garlic, and peppers, with about the same sodium as Fillo's.

Everyday winners

Maya Kaimal's organic Everyday Dals and Chanas are standouts. Most go heavy on flavor but are lighter on sodium than competing brands.

To limit saturated fat, skip any pouch with "Coconut" in its name. (They pack about 30 to 40 percent of a day's worth per serving.) Instead, try:



- Kidney Bean, Carrot & Tamarind Dal. Its tangy tamarind (a sweet-sour fruit) was a hit in our taste test.
- Black Lentil, Tomato & Cumin Dal. The company's take on dal makhani has a touch of richness from coconut (but only 13 percent of a day's sat fat).
- Green Garbanzo, Corn & Coriander Dal. Green garbanzos are chickpeas picked while they're still young. Try 'em.
- Yellow Lentils, Tomato & Garlic Dal. A spin on an aromatic dal that's a mainstay at Indian restaurants.
- Black Chickpeas, Tamarind & Sweet Potato Chana. Black chickpeas have an earthier flavor than tan ones.
- Chickpeas, Tomato & Onion Chana. If your go-to Indian food order is chana masala, look no further.



Start without salt

Got a recipe that calls for cooked beans? If you use a can, carton, or pouch of regular (salted) beans, you'll typically be adding 250 to 500 mg of sodium with every ½ cup. That's more than you may need, especially if the recipe calls for salt.

Draining and rinsing salted beans only cuts their sodium by about a

third. Instead, look for "low sodium" (140 mg or less) or "no salt added" on the label. Next best: "reduced sodium" (typically up to 240 mg).

Got time? Cook your own beans from scratch (see cspinet.org/drybeans). Two rules of thumb:

- It takes 1½ to 1¾ cups of cooked beans to replace a 15 oz. can or pouch of beans.
- 1 pound of dry beans (about 2½ cups) makes 6 to 8 cups of cooked beans.



Lentils: Cook by color

Need a quick-cooking legume?

Most dried lentils take just 15 to 25 minutes to cook—no soaking needed. (Most dry beans, on the other hand, hover around 45 to 75 minutes after an overnight soak.)

Your menu of lentil options: ■ Brown or green lentils.

These everyday lentils soften as they cook, and they end up with just the right texture for lentil soups and stews. ■ French green lentils. These firmer, dark-green gems may look almost like regular green lentils, but they hold their shape after cooking, so they're ideal for salads and pilafs. To be sure you've got the right ones, check for

"French," "French style," or "Le Puy" on the package.

- Black lentils. Like their French kin, black (aka "beluga") lentils stay firm when cooked. And they show off that dazzling caviar-like look! Try The Healthy Cook's recipes for Black Lentil Tabouli, Broccoli & Lentil Salad, or Roasted Winter Veg over Lentils with Spicy Herb Sauce (search for them at cspinet.org/recipes).
- Red or other split lentils. Got just 10 or 15 minutes? Like split peas, red lentils have their skins removed, so they're soft and quick cooking. That makes them the perfect creamy texture for dal or Turkish red lentil soup.

Can't wait? For lentils at a moment's notice, stockpile pre-cooked pouches like Target's shelf-stable Good & Gather 90 Second Black Lentils, which have zero added salt.



Lively beans

BeanVivo Organics knows how to jazz up sometimes-humdrum staples like baked beans and chili. Top picks that don't pile on the salt:

■ Smoky BBQ Pinto Beans. Most baked beans have 8 to 14 grams of added sugar per ½ cup, but these saucy, smoky-sweet ones have just 1 gram. (They also get a few grams of naturally occurring sugar

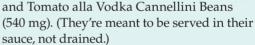
from their tomato paste.) Or turn down the sugar with homemade tomatoey British-style baked beans. For The Healthy Cook's recipe, go to cspinet.org/BritishBeans.

- Three Bean Vegan Chili. Plant-based chorizo gives this not-spicy chili (with 410 mg of sodium per ½ cup) some zing.
- Baja Black Beans. Beans seasoned with onion, salt, garlic, and spices that are flexible enough to use in "tacos, nachos, tostadas, enchiladas, burritos, you name it!" says the pouch.

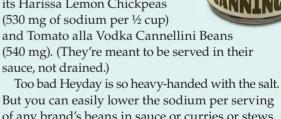
Stretch the sauce

"Beans are a perfect food, made even more perfect when simmered in aromatic, vibrantly flavored sauces," says Heyday.

Can't argue with that. Heyday has disrupted the canned-bean scene with punchy sauces like in its Harissa Lemon Chickpeas (530 mg of sodium per ½ cup)



But you can easily lower the sodium per serving of any brand's beans in sauce or curries or stews. Just add extra canned or cooked unsalted beans or lentils to stretch the dish into more servings.



Step up your salads

Snacks like Saffron Road Organic Crunchy Sea Salt Chickpeas beat chips, pretzels, and other salty nibbles.

But crispy chickpeas also make the perfect crunchy topper for your salad. Instead of low-fiber white-flour croutons, you'll get roughly 5 grams of both protein and unprocessed fiber per ounce (for just 130 calories).

No Saffron Road at your supermarket? Try Bada Bean Bada Boom's Crunchy Broad Beans or The Good Bean's Crunchy Chickpeas or Crispy Favas.



Feeling more adventuresome? Roast your own with The Healthy Cook's easy-as-1-2-3 Spicy Chickpea Poppers recipe:

- Preheat the oven to 450°F.
- Drain, rinse, and blot dry a 15 oz. can of no-salt-added chickpeas.
- Toss the chickpeas with 2 Tbs. olive oil, 1 tsp. paprika, and ¼ tsp. each ground coriander, ground cumin, and chili powder.
- Roast on a lined baking sheet for 25 minutes, then toss with ¼ tsp. kosher salt.
- Allow to cool before enjoying. •



Don't let these exercise myths fool you

GET THE FACTS TO MAKE THE MOST OUT OF YOUR WORKOUT

BY CAITLIN DOW

Are you judging the effectiveness of your workout based on how sore it makes you? Are you a woman who's avoiding lifting weights because it will make you look too "bulky"? Are you not running because it may wear out your knees? We're here to set the record straight.

Myth: Exercise before breakfast to burn more body fat

To maximize fat burned during exercise, roll out of bed, lace up your sneakers, bypass the kitchen on your way out the door, and get your heart pumping. Or so the theory goes.

"The claim has a logical basis," explains Brad Schoenfeld, professor of exercise science at Lehman College in

And people do burn a bit more fat during exercise that's completed before they've eaten than when they exercise after eating.1

The problem: "The theory is shortsighted," says Schoenfeld. "It only considers what happens during the exercise session. But how much fat you're burning in this minute or the next doesn't matter. Body fat loss

> happens when you're burning more calories than you're eating over the course of weeks."

Only a handful of small studies have tested whether exercising before or after eating causes greater fat loss over the course of several weeks.

"They show no meaningful dif-

Exercising before breakfast won't help you burn more body fat, so eat (and exercise) whenever it works best for you.

New York City. "If you don't consume food prior to exercise, your glycogen —which is carbohydrate stored in the muscle and liver—will be somewhat depleted. So your body would rely more on fat than carbohydrate for fuel during exercise."

ference," says Schoenfeld.2

In one study, Schoenfeld randomly assigned 20 young women to eat a lower-calorie diet and drink a 250calorie shake either before or after running on a treadmill for an hour three times a week. After four weeks, the two groups had lost the same amount of body fat.3

Bottom line

Eat whenever you prefer, either before or after you exercise, says Schoenfeld. "It's not going to make an appreciable difference to fat loss one way or the other."

Myth: No pain, no gain

Using soreness after you exercise to gauge how good your workout was? You need a new yardstick.

For many people, the calculus goes like this: A challenging workout results in micro tears in the muscle fibers, and that kind of "good" muscle damage—it leads to muscle repair and muscle growth—causes soreness.

So if you feel sore, that surely means you've got bigger, stronger muscles coming your way. And if you feel nothing the next day, did you even work out?

But there are some flaws in that logic.

For starters, "we're still not completely sure what causes soreness at the level of the muscle," says Schoenfeld. "It's related to muscle damage, but whether it's damage to the muscle fibers themselves or to the connective tissue like the fascia or a combination is not completely clear."4

And soreness likely isn't even a good gauge for muscle damage (let alone muscle growth).

One of the best markers of muscle damage is a drop in the amount of force that a muscle can produce. But in a study in 110 young men who performed a challenging biceps

workout, soreness wasn't related to muscle force or other markers of muscle damage like inflammation.⁵

Schoenfeld looks at the causes and consequences of soreness differently.

"Novelty causes soreness," he explains. When you start training your muscles for the first time after taking a long break, or if you're trying something new, the odds are higher that you'll get sore. Over time, you'll get less sore even if you're gradually increasing weight or intensity.

"Let's say you do a novel exercise," says Schoenfeld. "Your body isn't used to that exercise, so there's going to be muscle damage, which can be quite severe if you overdo it. However, if you do that exercise again relatively soon, usually within several days to a week, your body will have experienced that movement before and you'll have much less damage."

"And after a few weeks, the connective tissue has gotten stronger and the body does a better job at activating more muscle fibers and distributing the workload across the fibers. So the muscle has adjusted its response to the exercise, and it's able to stave off the damage."

During that time, you'll be slowly building larger, stronger muscles. No soreness required.

But you don't need to avoid soreness altogether. "You want to avoid severe soreness," says Schoenfeld.

"People who chase soreness and end up walking like Frankenstein the day or two after a hard workout won't be able to train effectively for days on end after. And that's going to have a negative effect on your ability to build muscle or strength."

Schoenfeld's advice: "When you're just starting out with strength training, err on the side of caution and be judicious about how much and how hard you're working out."

Then, over the course of a few weeks, you can start increasing the weight or the intensity of your workouts.

Bottom line

Don't shoot for soreness. More isn't better, and it can make it harder to stick with your strength-training program.

Myth: Enhance your workouts with an ice bath

Cold water plunges are all the rage. They're popular among everyone from Harry Styles to Joe Rogan (and, probably, your neighbor).

Proponents claim that submerging

yourself in cold water after a challenging workout can reduce swelling and inflammation and hasten recovery so you can emerge stronger and less sore. Is that true?

"The literature pretty consistently shows that cold water immersion can accelerate recovery from

soreness," says Susan Kwiecien, manager of clinical research at the Nicholas Institute of Sports Medicine and Athletic Trauma at the Manhattan Eye, Ear & Throat Hospital at Northwell Health. "It works very well for reducing pain and soreness."

That's the upside. The downside: "Ice baths blunt muscle development following resistance exercise," says Kwiecien.

Several studies have shown that hopping in an ice bath after you've racked your weights blunts the signaling processes that lead to muscle growth and may negate much of the hard work you've done in the gym. While that wasn't seen in all studies, there's no evidence that ice baths *help* muscle growth or strength.⁸

In one of the longest and best studies, researchers randomly as-

signed volunteers to sit in a 50°F cold water bath or to ride a stationary bike at a light, easy pace for 10 minutes after each session of a lower-body strength-training program.

After 12 weeks, strength and muscle mass increased more in those who pedaled than in those who plunged (the pedaling wasn't intense enough to build muscle). For example, quadriceps muscles grew by about 300 grams in the biking group compared to just 100 grams in the



An ice bath can help relieve soreness, but it blunts muscle gains.

cold-water-immersion group.9

That said, most studies have been small and were carried out in young men. How ice baths affect muscle growth in women, older adults, and people of varying levels of fitness remains to be seen.

In some situations, though—if you're seeking a quick recovery, say—an ice bath might be a good idea.

"It can be great for weekend warriors," says Kwiecien.

For example, if you play on a soccer team that has games two days in a row, "an ice bath will help you be less sore so that you can play the next day."

Ditto for a weekend of skiing, so that you can hit the slopes on Day 2 without having to stick to the bunny hill because your quads are too sore.

If you try it, don't use really cold

water, says Kwiecien. "If you start shivering, that's your body's alarm bell that your core temperature has dropped too much."

"The literature has shown that duration matters more than temperature," notes Kwiecien. 10 That's because it takes time for the cold to permeate down to your deepest tissues. If you're in and out within a couple of minutes, vou've made vour skin frigid without affecting your muscles.

Kwiecien suggests soaking in 50°-to-60°F water for 10 to 15 minutes.

"But tailor that based on how you're feeling," she adds. "And remember, your body fat is an insulator. So people with more body fat will cool more slowly."

Bottom line

If you're trying to build muscle, skip the cold plunge after your workout. If you want to occasionally prevent soreness, stick with cool water that you can tolerate for at least 10 to 15 minutes.

Myth: You can "spot reduce" fat

We've all seen the claims: "Lose belly fat in 10 days!" "5 effective exercises to reduce arm fat!"

But don't be fooled. Strengthening the muscles in your abdomen, arms, or anywhere else doesn't mean you'll burn more fat from that area.

"The idea is that the generation of heat from working the muscle will liberate fat from the fat cells that surround that muscle," explains Lehman College's Brad Schoenfeld. Nice idea.

Too bad there's nothing to it. Doing crunches to try to burn belly fat? "Your body is no more likely to burn fat from your abdomen than from fat cells elsewhere," says Schoenfeld.

Research shows that targeted exercises—like crunches for your abs or triceps dips and biceps curls for your arms—don't lead to localized fat loss.

In one study, researchers had 104

adults perform strength-training exercises on only their non-dominant arm twice each week. After 12 weeks, the trained arm had no less fat than the untrained arm.11

In another study, 30 women with excess weight were randomly assigned to eat a reduced-calorie diet or to follow the diet in addition to doing a series of ab exercises like crunches, oblique crunches, and abdominal bracing three times a week.12

After 12 weeks, both groups had lost similar amounts of weight and fat, with no differences in waist size or the amount of fat in their abdomen.

What governs where you lose fat?

"Mostly genetics," says Schoenfeld. "People have different propensities to lose fat from different areas." Some people will lose it from their thighs first, others from their belly, hips, arms, or face, "You can't dictate where your body is going to pull fat from."

Bottom line

Where you lose fat from is largely determined by your genes, not by which muscles you strengthen.

Myth: Lifting weights will make women bulk up

Ladies, if you've been steering clear of the weight rack at the gym to avoid getting too "bulky," let us quell your concerns.

"Women's ability to gain appreciable muscle is somewhat limited," says Schoenfeld.

And while a number of sexbased differences can explain that, one stands out: "Women don't have much testosterone, which is a key hormone for

muscle growth."

In fact, most people—not just women—struggle to put on large amounts of muscle. Building a noticeable amount of muscle requires dedication to a program of strength training that continuously challenges your muscles. You're not going to end up with chiseled shoulders and powerful thighs without really working at it.

"If it were that easy to gain muscle, we'd have a lot of people who look like bodybuilders walking around," says Schoenfeld. "Go into any gym and most people do not look very big. And many of them have probably been training for years."

If, by some stroke of luck, you're one of those people who put on muscle easily and you decide you don't like the look of it, "it's very easy to lose muscle," Schoenfeld points out. That's because muscles operate on a use-it-or-lose-it basis. "It's not like vou're stuck with it. I wish that were the case."

But you'd be smart to try to keep any muscle you build.

"Gaining muscle has a huge number of benefits," says Schoenfeld. More muscle means a lower risk of falls and higher odds of remaining self-sufficient as you age, better blood sugar control, and maybe even living longer.

And weightlifting isn't the only



Women are unlikely to get "bulky" from strength training, in part because their bodies don't make much testosterone.

way to build muscle. Maybe bodyweight or resistance-band exercises, Pilates or barre, or boot camp classes would suit you better.

Just don't believe any marketing that promises "long, lean muscles" from one type of exercise over another.

"The shape of muscle is genetically predetermined," says Schoenfeld.

What a muscle looks like depends on the length of the muscle belly (the thickest part of the muscle) and where the muscle attaches to the bone via the tendon.

"Some people have long tendons. Some people have short tendons," says Schoenfeld.

Assuming two people have thigh bones that are the same length, the person with shorter tendons will have longer muscles. And you can't change that through training.

So choose a type of strength training based on what you enjoy, not on promises of how it will make you look.

Bottom line

You won't get "bulky" by accident, and the benefits of strength training are too important to forgo.

Myth: Running will wear out your knees

If you're a runner, you've likely heard the well-meaning warning that your beloved habit is eventually going to do a number on your knees. Or maybe you're avoiding running now, assuming you're doing your future knees a favor.

Those concerns aren't entirely unfounded.

"The knee is the most frequently injured body part in runners," acknowledges Jean-Francois Esculier, head of research and development at The Running Clinic in Quebec. 13

But those acute injuries don't necessarily mean that running is bad for most knees over the course of a knee's life.

On the contrary, "the latest research shows that runners have three times

less knee and hip osteoarthritis than sedentary non-runners," says Esculier. (Of course, something other than running—a history of injury or genetics, for example—might explain the differences between sedentary people and runners.)

"The exception to this may be elite runners, who have a higher risk of

knee and hip arthritis than recreational runners and sedentary people," adds Esculier.¹⁴ (He's talking Olympic-level and professional athletes.)

"But for 99 percent of runners out there—even those who aim to qualify for the

Boston Marathon—running is likely beneficial to their knees."

Already have arthritis in your knees but still love to run? Though research is limited, it indicates that you don't need to stop.

"There is no evidence to suggest that osteoarthritis would progress any differently in people who continue to run," says Esculier. That is, cartilage isn't likely to degrade more, nor will the space in the joint shrink any faster.

In fact, "based on early evidence from studies that follow people with knee osteoarthritis over time, those who run may end up decreasing their pain levels more than those who don't run."¹⁵

One reason for misconceptions about running and knees may be rooted in past beliefs about cartilage.

"We used to think that cartilage couldn't get stronger because it lacked a blood and nerve supply," explains Esculier. "We thought it could only wear out." "But now we know that running stimulates fluid moving out of the cartilage during the run and then back in when the run is over.¹⁶"

"This process brings nutrients to the cartilage, which helps it adapt and get stronger with activity, much like your muscles and bones get stronger with exercise."



Running is linked to a lower—not higher—risk of knee arthritis.

Like all types of exercise, introduce running gradually. "Avoid drastic increases in distance or speed," advises Esculier. "Listen to your body. Don't run through pain unless it was advised by a qualified healthcare professional."

Bottom line

"We need to forget the old idea that running is bad for the knees," says Esculier. "Running is good for the knees. Rare are the people who should avoid running altogether."

¹ Br. J. Nutr. 116: 1153, 2015.

² J. Funct. Morphol. Kinesiol. 2: 43, 2017.

³ J. Int. Soc. Sports Nutr. 11: 54, 2014.

⁴ Strength Cond. J. 35: 16, 2013.

⁵ Scand. J. Med. Sci. Sports 12: 337, 2002.

⁶ Eur. J. Appl. Physiol. 118: 485, 2018.

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Winter warmers Stewed spiced beans and hearty winter

squash. Roasted vegetables nestled under a nutty, cheesy, garlicky sprinkle. A pot of creamy oven-baked sweet potatoes. The warm-up-your-winter gang's all here!

SMOKY BEAN & BUTTERNUT STEW

I love the colorful combo of orange butternut squash, white cannellini beans, and red kidney beans, but you could also use chickpeas, pink beans, and/or navy beans.

- Tbs. extra-virgin olive oil
- white onion, diced
- Tbs. tomato paste
- cloves garlic, minced
- Tbs. minced ginger
- Tbs. smoked paprika
- 1 tsp. ground cumin pinch of cinnamon

- cups diced butternut squash
- 15 oz. cans nosalt-added beans, undrained
- 1 cup vegetable stock, preferably homemade
- 1 tsp. kosher salt freshly ground black pepper, to taste
- 1 In a large heavy pot over medium heat, heat the oil until shimmering. Sauté the onion until softened, 2-3 minutes.
- 2 Add the tomato paste, garlic, ginger, paprika, cumin, and cinnamon. Cook, stirring often, until the tomato paste darkens, 1–2 minutes.
- 3 Add the squash, beans with their liquid, stock, salt, and pepper. Simmer until the squash is tender, 10-12 minutes.

TIME: 30 MINUTES | SERVES 8

PER SERVING (1 cup): calories 140 | total fat 4 g | sat fat 0.5 g | carbs 22 g | fiber 8 g | total sugar 3 g | added sugar 0 g | protein 7 g | sodium 270 mg

For more cozy dishes: cspinet.org/TheHealthyCook

Garlicky Beans Winter Chicken Braise

For cooking advice, write to Chef Kate at healthycook@cspinet.org

NUTTY ROASTED CAULIFLOWER

Roasting vegetables with flat surfaces is a surefire way to produce flavor-rich browning. That's why step 2 calls for cutting your cauliflower into slices, not florets.

- 1 large or 2 small heads cauliflower (any color)
- 1 Tbs. + 1 Tbs. extra-virgin olive oil
- 1 clove garlic
- 1/4 cup roasted salted almonds or smoked almonds
- 2 Tbs. grated parmesan
- 1/4 tsp. freshly ground black pepper

TIME: 30 MINUTES | SERVES 4

PER SERVING (1 cup): calories 180 | total fat 13 g sat fat 2 g | carbs 13 g | fiber 5 g | total sugar 4 g | added sugar 0 g protein 7 g | sodium 150 mg



- 1 Preheat the oven to 425°F.
- 2 Cut the cauliflower into ½-inch slices. Brush a large rimmed baking sheet with 1 Tbs. oil. Spread the cauliflower on the sheet and brush with the remaining 1 Tbs. oil. Add the garlic to the center of the sheet. Roast on the lowest rack until the cauliflower is browned on the bottom and tender-crisp, 20–25 minutes.
- 3 Crush the roasted garlic into a paste, then chop with the nuts to combine. Toss with the cheese and pepper and sprinkle over the cauliflower.

SCALLOPED SWEET POTATOES

I like to contrast slices of orange-fleshed sweet potatoes with yellow-fleshed Japanese sweet potatoes. (Tip: Shopping for yellow sweets? Look for their purple skin.) In either case, there's no need to peel the potatoes before slicing.

- 2 Tbs. extra-virgin olive oil
- 1 large onion, sliced
- 2 bay leaves
- 3 fresh thyme sprigs
- 2 cups whole milk
- 1 tsp. kosher salt
- ½ tsp. freshly ground black pepper
- 3 lbs. sweet potatoes, thinly sliced

TIME: 45 MINUTES | SERVES 8

PER SERVING (½ cup): calories 220 | total fat 5 g sat fat 1.5 g | carbs 39 g | fiber 5 g | total sugar 11 g | added sugar 0 g protein 5 g | sodium 360 mg



- 1 Preheat the oven to 375°F.
- 2 In a large oven-safe pot over medium heat, heat the oil until shimmering. Sauté the onions with the bay leaves and thyme until the onions soften, 2–3 minutes.
- **3** Add the milk, salt, and pepper. Bring to a simmer, add the potatoes, and stir frequently until the mixture returns to a simmer. Remove the bay leaves and thyme.
- 4 Cover and bake until the potatoes are tender, 25–30 minutes.



Avocado oil or plant based? Light or full fat? Chipotle or garlic aioli? The mayonnaise aisle has so many options that you may wonder if your current go-to needs replacing. Yet health-wise, mayo's not bad. Here's what to know about shopping for the spread. Check the photos for some great-tasting Best Bites.



Hellmann's Light It's hard to find a better-tasting and lower-calorie light mayo. (If you're west of the Rockies, it's sold as Best Foods.)



NotCo Not Mayo Original

Good news for vegan eaters: Most plantbased mayos (like this one) taste like, well, mayo!



Hellmann's Mild Chipotle

A not-too-spicy flavored mayo that's not-toohigh in calories (just 35 per tablespoon).



Acid League Tangy

If you like your mayo extra tangy, the hint of yuzu (a lemony fruit) is just the ticket.



365 Organic Spicy Harissa

A full-fat mayo that's spicy enough for heat seekers.

Take your pick. Most are healthy enough. Mayo may look creamy, but it has no cream. And because it's mostly unsaturated vegetable oil and water (plus a touch of egg, vinegar, and salt), a tablespoon of full-fat mayo has just 1 to 1½ grams or so of unhealthy saturated fat...plus plenty of healthy fats.

Who knew? In fact, we didn't need to set a sat fat limit for our Best Bites because no mayos have too much.

Sodium is low, too. Typical mayos range from 70 to 120 milligrams per tablespoon. And most mayos that add sugar contain so little that it shows up as zero or "<1 g" (less than 1 gram) on the Nutrition Facts label.

Mayo doesn't need an **a** oil change. "We make our mayo with avocado oil, NOT soy or canola oil, because you deserve only the best," says Primal Kitchen about its Avocado Oil Mayonnaise.

Don't let an unfounded fear of sovbean, canola, safflower, or sunflower oil steer you toward avocado oil mayos, which can cost more than twice as much as Hellmann's.

Despite what some "seed oil" critics claim, the best evidence doesn't show that those oils cause inflammation (see Nov./Dec. 2024, p. 10).

All the oils that are used to make

mayos are largely unsaturated, including avocado and olive. But sovbean oil has a bonus: It's richer in polyunsaturated fats, which can lower LDL ("bad") cholesterol more than the monounsaturated fats in avocado, olive, and canola oil (see p. 22).

Go plant based...or not. Follow Your Heart Vegenaise is "the original egg-free spread that's Better than Mayo!" boasts the label.

Are plant-based mayos really "better"? No. Mayo uses egg to keep its oil and water from separatingthat is, emulsified. Plant-based mayos do that with ingredients like pea protein, food starch, chickpea flour, or chickpea cooking water (the "aquafaba" in Sir Kensington's Vegan Mayos).

But unless your diet is 100 percent plant based (vegan), there's no benefit in abandoning regular mayo, which contains just a tiny bit of egg.

How do we know it's so little? A tablespoon of most mayos has a trivial 5 to 15 milligrams of cholesterol. A large egg yolk has roughly 200 mg (two-thirds of a day's max).

If you're watching calories, try light mayo. Mayo has 90 to 100 calories per tablespoon. There are plenty of reasons to go lower.

Maybe you're adding mayo to a dish like chicken salad or a burger that's high in calorie density—that is, calories per bite. Maybe you're trying to lose—or not gain—extra weight. Maybe your dish has so much flavor or so many ingredients that you won't even notice the difference.

The spreadsheet

Our chart doesn't list saturated fat because all mayos have 2 grams or less per tablespoon. **Best Bites** (v v) have no sucralose or acesulfame potassium and no more than 120 milligrams of sodium or 1 gram of added sugar per tablespoon. Within each section, products are ranked from least to most sodium, then added sugar. Note: West of the Rockies, Hellmann's is sold as "Best Foods."

2	.3	_0
ž	200/	4000
100	50	0
90	70	0
100	85	0
90	90	0
100	95	0
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90	100	0
110	105	0
80	70	0
80	75	0
90	75	0
90	85	0
70	100	0
90	100	0
90	110	0
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	90 100 90 100 100 90 110 80 80 90 90 70 90	100 50 90 70 100 85 90 90 100 95 100 95 100 100 110 105 80 70 80 75 90 75 90 85 70 100 90 100 90 110

Duke's—Light or Light with Olive Oil	50	100	Ü
✓✓ Hellmann's Light	35	110	0
✓✓ Hellmann's Olive Oil	60	110	0
✓ Hellmann's Canola	40	115	0
✓ ✓ Kraft Olive Oil	45	115	0
Miracle Whip Light ^s	20	130	<1
Flavored mayo (1 Tbs.)			
✓✓ 365 Organic Spicy Harissa	100	95	0
✓ Hellmann's Garlic Aioli	70	95	0
✓✓ Sir Kensington's Chipotle	90	100	0
✓ Hellmann's Spicy	40	100	<1
✓ Hellmann's Mild Chipotle	35	105	<1
✓ Heinz Mayoracha	90	115	<1
Hellmann's Chili Lime	40	150	0
Kraft Chipotle Aioli	80	150	0
Kraft Buffalo Style	80	170	0
Lee Kum Kee Sriracha	60	180	1

VV Best Bite | SContains sucralose and acesulfame potassium.
Daily Values (DVs)—Sodium 2,300 mg | Added Sugar 50 g

Sources: company information and NIQ Product Explorer. Nutrition Facts and ingredients can change; always check the label. The use of information from this article for commercial purposes is strictly prohibited without written permission from CSPI.

In that case, try a "light" or "reduced fat" or "30% fewer calories" mayo. Most clock in at 40 to 60 calories per tablespoon.

Just skip Miracle Whip Light, which replaces some of regular Miracle Whip's high fructose corn syrup with sucralose and acesulfame potassium. We rate those low-calorie sweeteners as "avoid" (see chemicalcuisine.org). You won't find either in our Best Bites.

5 Additives to avoid are rare. Miracle Whip Light aside, we found little reason to worry. Three ingredients in many mayos may sound unfamiliar, but we rate them as "safe": calcium disodium EDTA

(which helps prevent oils from going rancid) and sorbic acid or potassium sorbate (which preserves foods).

Try flavored mayo or make your own. Flavored mayos—think chipotle, sriracha, or garlic—can add a punch to sandwich-

es or other dishes, and they often clock in with a reasonable 90 to 120 mg of sodium per tablespoon.

But they're good for a lot more than that. Try thinning your flavored mayo by whisking in a teensy splash of water, then drizzling it on grain bowls, roasted vegetables, or tacos. Or use it as a dipping sauce for breaded chicken or plant-based tenders.

Sriracha mayo is also great mixed with canned salmon. Or use it to top an Asian-inspired rice bowl with edamame and vegetables like shredded carrot, cucumbers, and bell peppers.

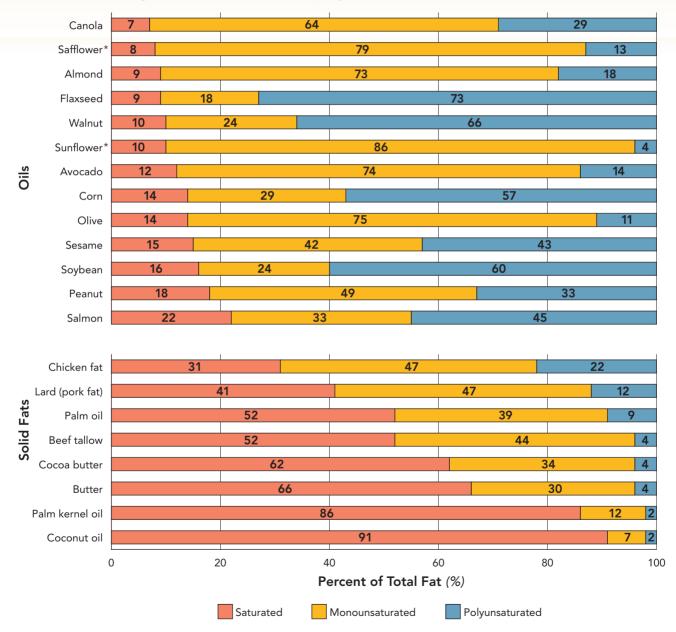
Just keep in mind that, except for a handful of Hellmann's, most flavored mayos are full fat, so they have about 80 to 100 calories per tablespoon.

That too much for you? Or not crazy about buying a whole jar of a single mayo flavor? No problem.

Start with plain mayo, then mix in a squirt of sriracha, a bit of mashed roasted garlic or black garlic, some chipotle in adobo sauce, or a pinch of curry powder (great for chicken salad with apples and almonds). Mmm.

Need an oil change?

All fats are a mix of (unhealthy) saturated fatty acids and (healthy) monounsaturated and polyunsaturated fatty acids, though people usually categorize each by the fatty acid that predominates. Our chart shows the percent of each fat. Odds are, you get mostly soybean oil in prepared foods (like salad dressings, mayonnaise, and margarine) and restaurant foods. If you cook with olive oil and canola oil, you'll probably end up with a good mix of monos and polys.



^{*}Sunflower seeds are higher in polyunsaturated fat and lower in monounsaturated fat than most sunflower oils. Some health food stores may sell high-poly sunflower or safflower oils.

Note: The fatty acids in meats, nuts, chocolate, and other foods are similar to their respective oils, butters, etc., shown above. Sources: USDA National Nutrient Database for Standard Reference (Release 28), National Sunflower Association, Flax Council of Canada.



Got salt questions?

HOW TO SLASH SODIUM

BY LINDSAY MOYER

Most of the sodium we eat comes from processed or restaurant foods, not the saltshaker. But you still need salt for cooking at home. Are some salts better for you because they're higher in minerals or lower in sodium? We have answers, as well as which claims to take with a few grains of, um, salt.

Is kosher salt lower in sodium?



Gram for gram, kosher salt has as much sodium as any other salt. But there's more air between kosher salt's larger crystals, so teaspoon for teaspoon, you get less salt, which means less sodium.

How much less? A quarter teaspoon of table salt has about 590 milligrams of sodium—a quarter of a day's max. Morton Coarse Kosher Salt lowers that to 480 mg. And Diamond Crystal Kosher

Salt Flakes' *hollow* crystals deliver just 280 mg. If you're adding salt to taste, every pinch of kosher salt delivers less sodium...so it's easier to avoid over-salting.

Note: Unlike "iodized" table salt, kosher salt has no added iodine, which is a key component of thyroid hormones. But if you eat yogurt, milk, or seafood or you take a multivitamin, you're likely getting enough iodine.

If you're pregnant or breastfeeding, taking a prenatal multi is a good idea because you need more iodine to support the developing brain of a fetus or infant, says the Centers for Disease Control and Prevention.

Should you try potassium salt?

If you're cutting back on sodium, try replacing some salt (sodium chloride) with potassium salt (potassium chloride). The upside: salty taste, no sodium, and a nice dose of potassium, which helps lower blood pressure.

The downside: a bitter aftertaste from potassium chloride that some people detect. So do what manufacturers of lower-sodium foods do: Use potassium salt to help reduce sodium, not eliminate it (see p. 2). A sodium-potassium salt blend like Morton Lite Salt does that for you. Each ½ tsp. has 290 mg of sodium plus 350 mg of potassium.



Caution: Some diseases (like chronic kidney disease or heart failure) and medications (like ACE inhibitors, angiotensin II receptor blockers, and potassium-sparing diuretics) make it hard to excrete potassium, which raises the risk of dangerously high blood levels. Not sure if you're at increased risk? Check with your provider.

Is Himalayan or "Real Salt" any healthier?



Pink Himalayan and "Real Salt" salts are better because they contain more minerals, say some proponents. Really?

Terrasoul Superfoods' Himalayan Pink Salt contains

"essential trace minerals," according to its website. The key word: trace. According to a lab analysis the company sent us, you'd have to eat anywhere from 7 to 107 teaspoons of its salt to get 10 percent of a day's worth of calcium, potassium, magnesium, iron, copper, zinc, or selenium. Gulp!



What about Redmond "Real Salt"?

"Many salts contain anti-caking agents and even dextrose (sugar)," says the website, but Real Salt "is unrefined and full of natural minerals."

Again, the numbers are unimpressive. For example, you'd need 1½ cups of Real Salt to supply the potassium in a medium banana.

As for that "dextrose (sugar)," don't worry. It would take roughly 8½ cups of Morton Iodized Salt to deliver a mere

1 gram (¼ tsp.) of sugar. Companies add trivial levels of dextrose to their iodized salt to stabilize the iodine. And calcium silicate, a common anti-caking agent, is safe to eat. ?





FOOD FIND

Going pro

"Chobani Expands in High Protein Greek Yogurt Category with New Line of 20G Protein Yogurt," announced the yogurt giant in October. Yay!

Each single-serve Chobani Protein has 0 grams of added sugar and 20 grams of protein—about 8 to 10 grams more than the usual 10 to 12 grams in a low-fat sugar-sweetened Chobani Greek Yogurt. And that extra protein comes with about the same calories (140) as Chobani's regular low-fat Greek yogurts (130 to 140).

How did Chobani do it? They upsized the tub (from 5.3 oz. to 6.7 oz.) and replaced the 9 to 15 grams of added sugar with calorie-free stevia extract.

The calories, protein, and added sugar match Oikos Pro, Dannon's competing stevia-sweetened high-protein pick. Which to choose?

Both taste great. Chobani's tastes like, well, Greek yogurt. Oikos Pro's ultra-filtered milk and whey protein give it a pudding-like texture and less tang.

Our advice: Go with your favorite or what's on sale. Lactose-free? So is Chobani Protein. (Oikos isn't.)

Do you *need* extra protein in your yogurt? Maybe not. Most of us already get enough protein to hit the Daily Value (50 grams). And only strength training, not extra protein alone, can build muscle.

But if your yogurt is your meal's main event, 20 grams of protein—and no added sugar—is a good deal.

How sweet is that!

FOOD FAIL

Mac attack

"It's Official: McDonald's Highly Anticipated Chicken Big Mac Drops at U.S. Restaurants this Month," proclaimed the press release announcing the limitedtime Mac that debuted in October.

Just in case it ever comes around again: Was the chicken Big Mac better than the beef one? It's complicated.

With both, you're getting a white-flour bun with no veggies beyond token lettuce, pickles, and—on the beef burger—onions, so the fiber is scant (2 to 3 grams).

And the fried chicken patties' seasoned "tempura battered" coating helps explain why the chicken version had more calories (700 vs. 590), carbs (61 vs. 46 grams), and sodium (1,410 vs. 1,050 mg) than its beefy brother.

On the other hand, the poultry patty had less heart-harming saturated fat (8 vs. 11 grams). And replacing red meat means a lower risk of colorectal cancer. The International Agency for Research on Cancer has concluded that unprocessed red meats like ground beef, patties, or steaks—are "probably carcinogenic."

And serving for serving, producing beef releases far more greenhouse gases than producing chicken or almost any other food. Beans, tofu, nuts, and plantbased meats release even less than chicken.

So, c'mon McDonald's. Isn't it about time for a McPlant burger in the U.S., like those you sell in the Netherlands, UK, and Ireland?

QUICK DISH

PAN-ROASTED BUTTERNUT SQUASH

Sauté 1 lb. sliced butternut squash in 1 Tbs. olive oil until well browned on 1 side. Turn the squash over, add ¼ cup water, cover, and cook until tender, 3-5 minutes. Whisk together 1 Tbs. extra-virgin olive oil, 1 Tbs. red wine vinegar, 1 Tbs. whole-grain mustard, ¼ tsp. brown sugar, and 1/4 tsp. kosher salt and spoon over the squash. Top with 1/4 tsp. fresh thyme. Serves 4.

