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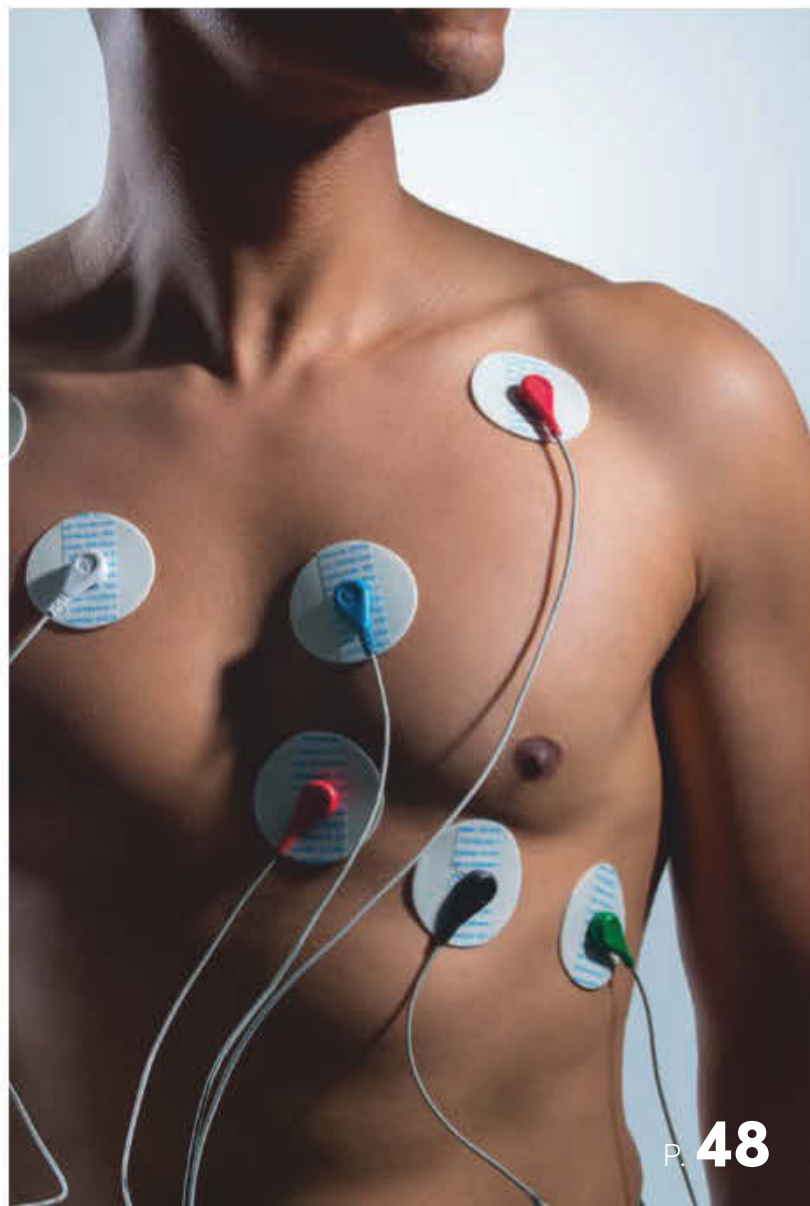
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UPDATE

Trends, product news, and expert advice



A Toast to the Avocado

Avocados have become hugely popular in recent years, but are they good for you? In a word: Yes. Half of a medium avocado has 114 calories and 10 grams of fat. That might sound like a lot of fat, but about 64 percent of it is monounsaturated, which lowers LDL (bad) cholesterol levels, reducing the risk of heart attack and stroke. And avocados offer an array of vitamins and minerals not often found together in one place. These include folic acid and vitamins B6, C, E, and K. Avocados are rich in blood-pressure-lowering potassium and fiber. They also contain the carotenoids lutein and zeaxanthin, which are linked to eye health. So go ahead and enjoy your avocado—on toast, in a smoothie, or however else you please.

Hugs help! People who got one on a day they'd had an argument felt fewer negative and more positive emotions than they did on days when they'd had a conflict but weren't hugged, according to a study of 400 adults.



Sweet News

Q. How much sugar is okay to get in my daily diet?

Most people don't need to worry about the natural sugars in foods such as fresh fruit and unsweetened dairy. For added sugars, the American Heart Association advises that women get no more than 6 teaspoons (25 grams) per day; men, 9 teaspoons (36 grams). (A 12-ounce bottle of regular cola has 42 grams.) And some products include the amount of added sugars in their Nutrition Facts panel.



Multivitamins May Not Help Your Heart

In a recent analysis of 18 studies that tracked 2 million women and men, researchers found that taking multivitamin and mineral supplements failed to reduce the risk of heart disease or stroke. The supplements also didn't cut the likelihood of dying from these common conditions. What does help? A diet with lots of fruits and veggies, regular exercise, alcohol only in moderation, and avoiding smoking.



Keep Your Metabolism Moving

Managing your stress, getting plenty of sleep, and staying generally active are all important metabolism-boosting steps to take. And building and maintaining muscle with strength training is key. “Exercise like running and swimming promotes heart health, but resistance exercise preserves muscle mass,” says Reyhan Westbrook, Ph.D., instructor of geriatrics and gerontology at the Johns Hopkins School of Medicine in Baltimore. Research shows that your resting metabolic rate stays elevated by about 5 to 7 percent for up to 72 hours after a resistance-training session. Try a class at your local community center or YMCA, or check out the workouts on go4life.nia.nih.gov. Aim to do strength training at least twice a week. And, resist your instinct to eat less. “When you restrict calories, you run the risk of not taking in enough protein, which can result in more muscle loss,” says Zhaoping Li, M.D., Ph.D., a professor of medicine and director of the UCLA Center for Human Nutrition at the David Geffen School of Medicine. The Dietary Reference Intake is 0.8 gram or protein per kilogram of body weight, or a bit more for people ages 55 and older.

Decoding Food Expiration Dates

The average American throws out almost a pound of food every day, according to the Department of Agriculture. Why? For one thing, it’s often hard to know how long packaged foods are still okay to eat because there are no federal regulations on date labeling, with the exception of those on infant formula.

UNDERSTANDING DATES

You’re likely to see one of three designations on food products, though “Sell-By” has a different meaning from “Best if Used By/Before” and “Use-By” (see below). Typically, manufacturers use methods such as lab tests and taste testing to set label dates,

according to a report from The Natural Resources Defense Council and Harvard University. But those dates have little to do with safety. And, in many cases, the date you see is conservative, so if you eat the food after the date, you may not even notice a quality difference.

As a general rule of thumb, most canned foods that are low in acid (canned tuna, soups) can be stored (unopened) for two to five years, and high-acid foods (canned juices, tomatoes, pickles) can be stored for a year up to 18 months, according to the USDA. Deep dents (which can break the seal and let in bacteria) or bulges in any closed cans signal that

it’s time to toss them. Although there are still no federally regulated expiration dates on meat, dairy, and eggs, these foods have shorter shelf lives than nonperishable items.

SAFETY STEPS

The best way to know whether a perishable food has spoiled? “Trust your taste buds and nose,” says CR’s Sana Mujahid, Ph.D., a food safety expert. If a product has been opened, it may be harder to know whether it’s worth saving.

But a free app from the USDA, FoodKeeper, can help. Simply look up an item to see how long it will last unopened in the pantry or opened in the fridge.

USE-BY

The last date that the manufacturer recommends for the use of the product while at peak quality. The nutrients in infant formula may degrade after this date.

SELL-BY

A manufacturer-set date to tell retailers when to take a product off shelves—but it may still taste fine.

BEST IF USED BY/BEFORE

Indicates when a product is of the best quality or flavor. For instance, crackers may be soft instead of crisp after this date. It’s not about safety.



What We're Testing in Our Labs ...

In our 63 labs, we continually review and rate products. Here, our latest health and fitness picks.

Adult Bike Helmets

WE TESTED: 45

WE TEST FOR: Ability to absorb impact forces in a crash, ventilation, fit adjustments, and ease of use.

ABOUT THE SCORES:

Median: 73
Range: 88-22

Best Overall Performance
Scott Arx Plus
\$125



88
OVERALL SCORE

Easily Adjustable
Cannondale CAAD MIPS
\$80



85
OVERALL SCORE

Superior Value
Bell Draft
\$40



82
OVERALL SCORE

Air Fryers

WE TESTED: 14

WE TEST FOR: Legibility and functionality of controls, noise, and ease of cleaning.

ABOUT THE SCORES:

Median: 68
Range: 75-53

Largest Capacity
NuWave 6-qt. 37001
\$140



75
OVERALL SCORE

Easy to Use and Clean
Ninja AF100
\$100



71
OVERALL SCORE

Nice Price
Farberware HF-919B
\$70



71
OVERALL SCORE

Air Purifier

WE TESTED: 32

WE TEST FOR: Dust, pollen, and smoke removal at high and low speeds; noise at high and low speeds; annual cost of operation.

ABOUT THE SCORES:

Median: 52
Range: 89-18

Effective and Portable
Honeywell HPA300
\$200



76
OVERALL SCORE

Quick Air Cleaning
Allen Breathesmart
\$600



72
OVERALL SCORE

Solid Bargain Pick
Winix 5300-2
\$150






59
OVERALL SCORE




Blood Pressure Monitors

<p>WE TESTED: 29 WE TEST FOR: Accuracy of a model's reading when compared with a mercury sphygmomanometer, comfort, and more.</p> <p>ABOUT THE SCORES: ARM Median: 70, Range: 39-85 WRIST Median: 63, Range: 17-77</p>	<p>The Price Is Right Rite Aid Deluxe Automatic BP3AR1-4DRITE \$56</p>  <p>84 OVERALL SCORE</p>	<p>Great for Multiple Users A&D Medical UA767F \$45</p>  <p>82 OVERALL SCORE</p>	<p>Best Wrist Monitor Omron 7 Series UltraSilent BP652N \$60</p>  <p>77 OVERALL SCORE</p>
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Fitness Trackers Under \$200

<p>WE TESTED: 24 WE TEST FOR: Ease of use, interaction and pairing with another device, step count and heart-rate monitor accuracy, water resistance, readability, and more.</p> <p>ABOUT THE SCORES: Median: 71 Range: 89-45</p>	<p>Leader of the Pack Samsung Gear Fit 2 Pro \$170</p>  <p>89 OVERALL SCORE</p>	<p>Accurate and Simple to Use Fitbit Charge 3 \$150</p>  <p>84 OVERALL SCORE</p>	<p>Easy-to-Read Display Garmin Vivosmart HR \$150</p>  <p>82 OVERALL SCORE</p>
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Insect Repellent

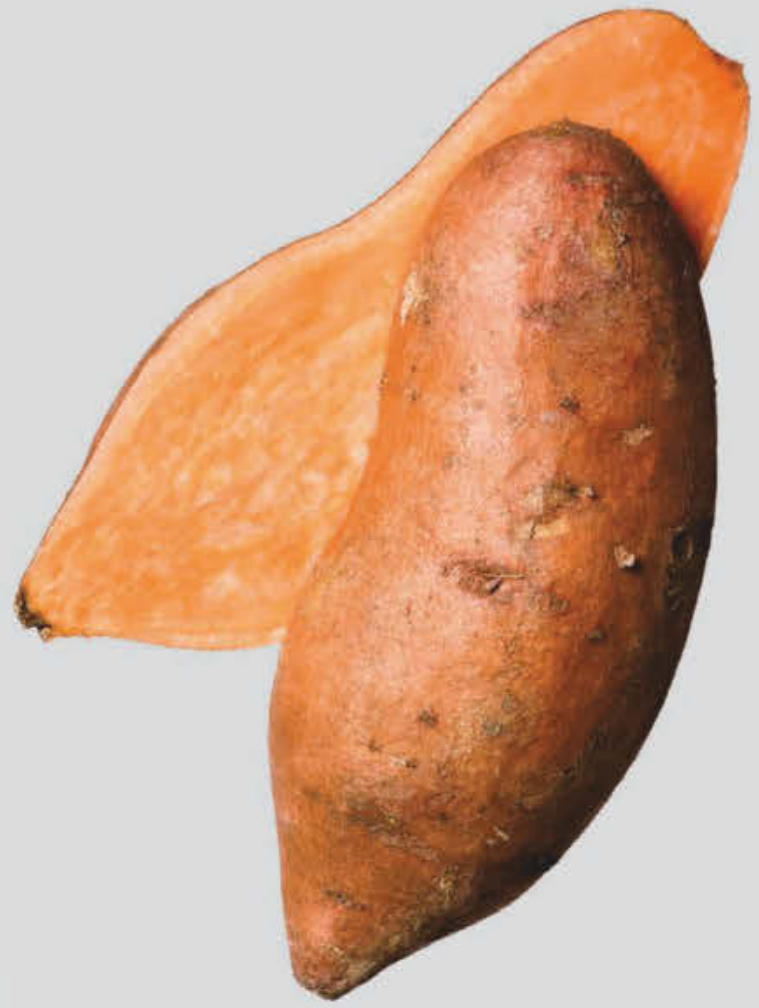
<p>WE TESTED: 33 WE TEST FOR: Protection against mosquitos and ticks, likelihood to damage materials, and cost per ounce.</p> <p>ABOUT THE SCORES: Median: 55 Range: 94-3</p>	<p>Excellent Protection Total Home (CVS) Woodland Scent \$6.50</p>  <p>94 OVERALL SCORE</p>	<p>Non-Oily Spray Off Deep Woods Insect Repellent VIII Dry \$8.50</p>  <p>94 OVERALL SCORE</p>	<p>Deet-Free Pump Repel Plant-Based Lemon Eucalyptus \$7</p>  <p>90 OVERALL SCORE</p>
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Personal Blenders

<p>WE TESTED: 24 WE TEST FOR: Consistency of icy drinks, convenience, pureeing performance, ice crushing ability, noise, and durability.</p> <p>ABOUT THE SCORES: Median: 68 Range: 84-34</p>	<p>Super for Smoothies Vitamix S30 \$400</p>  <p>82 OVERALL SCORE</p>	<p>Versatile Choice Ninja with DUO Auto-iQ BL642 \$200</p>  <p>79 OVERALL SCORE</p>	<p>Cool Savings Black+Decker 3-in-1 Digital Power Crush BL1350DP-P \$50</p>  <p>77 OVERALL SCORE</p>
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Healing Foods

For some health concerns, your kitchen may provide good medicine. Here's what to eat and when.



Kitchen Wisdom
Common foods like tea, sweet potatoes, bananas, and ginger, can cure what ails you.

PHOTOS: CLOCKWISE FROM TOP LEFT: SAM KAPLAN/TRUNK ARCHIVE; TRAVIS RATHBONE/TRUNK ARCHIVE; LEVI BROWN/TRUNK ARCHIVE

A HEALTHY DIET—one with abundant quantities of produce and whole grains, and moderate amounts of “good” fats and lean protein—can help prevent and control chronic conditions such as diabetes and heart disease. But certain foods can have a more immediate benefit and may help tame common health problems such as headaches and insomnia. So the next time you experience one of the conditions below, consider heading to your kitchen before you open your medicine cabinet.

Sip Away Headaches

Whether you have headaches frequently or only occasionally, “the first thing to do if you get one is drink a tall glass of water or two,” says Robin Foroutan, M.S., R.D.N., an integrative nutritionist in New York City and a spokeswoman for the Academy of Nutrition and Dietetics. “Dehydration is a common cause of headaches, so water may address the pain right away.”

Having a snack with a combination of fiber-rich carbs, protein, and healthy fat may also help because it prevents blood sugar dips, which can trigger headaches, Foroutan adds.

A good combo snack is an apple with a handful of walnuts.

Consider, too, whether you’ve had your usual dose of caffeine in the past couple of days, because caffeine withdrawal can cause headaches. In addition, blood vessels may enlarge during a headache and caffeine can constrict them, so coffee or tea might offer

some relief, the National Headache Foundation says.

For some people, however, caffeine can set off a headache, so if that happens to you, skip the java. But if you experience migraines, be aware that substances reputed to trigger these headaches—aged cheese, cured meats, chocolate, artificial sweeteners, MSG, and soy—are to blame much less often than you might think.

“The prevalence of food triggers is really overstated, but people who have them tend to figure it out pretty quickly,” says Mark W. Green, M.D., director of the Center for Headache and Pain Medicine and a neurology professor at the Icahn School of Medicine at Mount Sinai in New York City. “Alcohol is the one exception; it’s more likely to cause a headache than other foods, especially if it’s heavily fermented, such as red wine.” And if you suspect that certain foods bring on your headaches, keeping a food diary can help you pinpoint dietary culprits.

Calm Nausea With a Spice

Ginger has been extensively studied as a potential remedy for nausea, especially during chemotherapy and pregnancy. A 2016 review of research, published in the journal *Integrative Medicine Insights*, found ginger to be effective and safe. It seems to help by moving food out of the stomach quickly, and possibly turning off neurotransmitters such as serotonin that can contribute to nausea.

To make ginger tea, steep 1½ teaspoons of freshly grated ginger in 1½ cups of boiling water. (Add a little honey if you like.) Let it sit for 10 minutes, then strain the ginger out before drinking.

And don’t think you have to stick with rice and dry toast during a bout of nausea. William Chey, M.D., a gastroenterologist and professor of medicine and nutrition at the University of Michigan in Ann Arbor, says evidence doesn’t support long-standing advice to eat only bland foods. He recommends eating small, frequent meals rich in protein, especially chicken and fish, and vegetable proteins.

“Red meat is hard to digest,” Chey says. “There are other proteins that seem to move through the stomach more quickly. Plus, they don’t cause the same gastric sensations that fats do,” he adds.

‘Alcohol is more likely to cause a headache than other foods, especially if it’s heavily fermented, such as red wine,’ says Green.

Fats can make the stomach overly sensitive, leading to pain, fullness, and nausea.

Zap Heartburn

The typical dietary advice for fighting heartburn and gastroesophageal reflux disease (GERD) is to eat smaller, more frequent meals, skip spicy foods, avoid caffeine, and avoid eating or drinking within 3 to 4 hours of bedtime.

If the burning sensation strikes anyway, try having a banana. Some research suggests that the fruit may act as a natural antacid.

Another remedy: Chew sugarless gum. Studies have found that it may decrease reflux after a meal.

Long-term, consider cutting back on sugars. A 16-week study of obese women, published in the journal *Alimentary Pharmacology and Therapeutics*, found that reducing refined carbohydrates, especially sucrose (table sugar), eliminated symptoms in those who complained of GERD at the start of the trial.

“The diet resolved reflux in all 43 women who had it by week nine or 10, and it wasn’t just because of the weight loss,” says Heidi Silver, R.D., Ph.D., a research associate professor of medicine at the Vanderbilt University Medical Center in Nashville, Tenn., and one of the study’s authors. In particular, the study found that every additional teaspoon of sugars increased the odds of having GERD by 13 percent.

Feed a Cold

“Your body needs antioxidants during a cold, so eating more fruits and vegetables is key to feeling your best,” Foroutan says.

What about chicken soup? The best-known research, from Nebraska pulmonologist Stephen Rennard, M.D., found that chicken-vegetable soup inhibited the movement of white blood cells that trigger cold symptoms, such as a stuffy nose. “When your mucous membranes are inflamed, your nose can get crusty and dry,” says infectious-disease expert William Schaffner, M.D., professor of preventive medicine at Vanderbilt University School of Medicine. Soup helps loosen mucus so that you can expel it. But you may want to avoid sugars. “There’s some research showing sugar weakens the activity of certain [virus-fighting] white blood cells,” Foroutan says.

Can Eating Organic Prevent Cancer?

A recent study offers food for thought



A French study, published late last year in the journal *JAMA Internal Medicine*, has found that people who eat a mostly organic diet reduce their overall cancer risk by 25 percent.

The researchers followed almost 70,000 people for an average of 4½ years. In their analysis, they accounted for many cancer risk factors, such as age, gender, lifestyle, diet, and education.

Although there was an overall reduction in cancer risk for those eating a mostly organic diet, the reduced risk was even greater for two forms of the disease: lymphoma (a 76 percent reduced risk) and postmenopausal breast cancer (a 34 percent reduced risk).

“The most surprising finding was the extent of the reduction, which is far from the usual risk observed for nutritional factors,” says Julia Baudry of the Centre of Research in Epidemiology and Statistics at the Sorbonne in Paris and lead author of the study.

One of the requirements for a food to be labeled organic in Europe and the U.S. is that it must be produced without the use of most synthetic pesticides. About 40 pesticides currently approved by the Environmental Protection Agency for use in conventional (nonorganic) food production are classified as possible or probable carcinogens by the International Agency for Research on Cancer.

“There are lots of benefits to eating organic foods, and limiting exposure to pesticides is one of the biggest,” says Charlotte Vallaeys, a senior policy analyst and sustainability expert in the food safety and testing department at Consumer Reports. “This study adds to the current body of evidence supporting the health benefits of eating more organic foods.”

Previous research has found a link between eating more organic food and a reduced risk of non-Hodgkin’s

lymphoma but not breast cancer. “One hypothesis explaining the inverse association between organic food intake and breast cancer [in the current study] may be the endocrine [hormone] disrupting effects of some pesticides,” Baudry says.

MORE RESEARCH NEEDED

There are several limitations to this study, which the researchers acknowledge. Though the number of people involved in the study was large, the group consists of volunteers who are mostly female, well-educated, and very health-conscious. In addition, study subjects were 44 years old on average at the start of the study and were followed for only 4½ years.

“This is a very difficult area to study, and it’s very hard to accurately assess habitual consumption of organic food,” says Frank B. Hu, M.D., Ph.D., chair of the department of nutrition at Harvard T.H. Chan School of Public Health. “Overall, these are interesting results, but they are very preliminary. And it would be premature to make organic food consumption recommendations based just on this study.”

“Consumer Reports recommends opting for organic foods whenever possible, in part because they are produced without most synthetic pesticides,” Vallaeys says. In a 2015 analysis of government data on pesticide residues, CR’s experts found that conventional carrots, cranberries, green beans, hot peppers, nectarines, and peaches pose a higher risk from pesticides than other fruits and vegetables.



Opt for Sustainability

Use the scorecards on page 13 to choose restaurants with better policies on antibiotics.

Keeping Antibiotics off the Menu

A new report shows where quick-service restaurants stand on serving meat and poultry raised without antibiotics.

THOUGH MOST OF the top 25 chain restaurants no longer serve chicken that has been raised with antibiotics, a new annual review of the top 25 burger chains reveals a very different pattern for beef.

“Chain Reaction IV: Burger Edition,” produced annually by Consumer Reports—along with the Center for Food Safety, Friends of the Earth, the Food Animal Concerns Trust, the Natural Resources Defense Council, and the U.S. Public Interest Research Group—grades two types of popular burger restaurants on their current antibiotic policies.

For the first time, the 2018 report provides two scorecards, one that covers the top 25 fast-food and fast-casual restaurant chains and one that looks at the top 25 burger chains.

Among the burger chains, only two, BurgerFi and Shake Shack, received A grades for serving beef not raised with

antibiotics. But the larger burger chains, including Burger King, McDonald’s, and Sonic, got failing grades, and Wendy’s got a D-minus. (Shortly after the release of the Chain Reaction IV Report, McDonald’s announced plans to reduce the use of antibiotics in its global beef supply chain.)

Nearly 80 percent of Americans think meat producers should stop giving antibiotics to animals that aren't sick, according to a CR survey.

“While companies should be lauded for shifting to no-antibiotic chicken, chicken only accounts for 6 percent of the usage of medically important antibiotics in the meat industry,” says Jean Halloran, director of food policy initiatives at Consumer Reports. “By contrast, the beef industry uses 43 percent.”

The Trouble With Antibiotic Use

Giving healthy animals antibiotics to prevent diseases they can contract when being raised in crowded, unsanitary conditions is a major contributor to antibiotic resistance, in which the bacteria that can cause illness don't respond to drugs. Those resistant bacteria can end up in the food supply and can infect you, leading to serious, potentially deadly illness. Infection can come from touching or eating undercooked, contaminated meat; eating plants grown with fertilizer made from animals treated with antibiotics; or by drinking tainted groundwater. Studies even suggest that resistant bacteria could be transmitted through the air.

Almost 80 percent of Americans think meat producers should stop giving antibiotics to animals that aren't sick, according to a recent Consumer Reports nationally representative survey of 1,014 U.S. adults. “Ideally, healthy animals would not be given

any antibiotics at all,” Halloran says. “But at a bare minimum, medically important antibiotics—drugs used to treat people, such as amoxicillin, erythromycin, and tetracycline—should never be used for routine disease prevention in animals.”

At least 2 million Americans contract an antibiotic-resistant infection every year, and 23,000 die, according to the Centers for Disease Control and Prevention. CR's calculations of the CDC data show that about 20 percent of these infections are linked to food. CR's survey found that 1 in 3 Americans either experienced an antibiotic-resistant infection or knew someone who had.

The Issue With Burgers

Because of the high use of antibiotics in the beef industry, the 2018 Chain Reaction report zeroed in on burger-focused restaurants.

The companies were sent a survey, and their responses—along with public statements by the companies in the press or on their

websites—were used to calculate the score.

At BurgerFi and Shake Shack—which both received A ratings for their beef sourcing policies—100 percent of the beef served is raised without any antibiotics.

Of the remaining 23 burger restaurants, 22 received F's, meaning they give no indication of having a policy that limits antibiotics in the beef they serve. The remaining company, Wendy's, got a D-minus. It says it made a commitment this year to source a small percentage of beef

from producers who minimize (but don't eliminate) the use of medically important antibiotics in their cattle.

Halloran says the beef industry faces particular hurdles that make it challenging to reduce its antibiotic use. “For the first part of their lives, most cows are raised on the range, and rarely given antibiotics,” she says. “Then when they're moved to a feedlot for ‘finishing,’ they're packed together tightly and given a rich diet of corn and soy. Cattle's natural diet is grass; feeding



PHOTO: SHUTTERSTOCK

them grain makes them prone to developing liver abscesses and other infections. This system relies on antibiotics to fix its issues.”

Despite these challenges, burger chains can limit antibiotic use in their beef supply chain, says Lena Brook, M.E.S., interim director for food and agriculture at the Natural Resources Defense Council. There may even be a financial gain. Nearly 60 percent of those in CR’s survey said they would pay more at a restaurant for a burger made from beef not raised with antibiotics.

Some companies are getting the message. Shortly after the release of this report, McDonald’s—one of the largest beef buyers in the world—announced plans to reduce the use of antibiotics in its global beef supply chain. Eighty-five percent of McDonald’s beef comes from 10 countries. The company said it will immediately assess antibiotic use by suppliers in these countries. It will develop pilot projects to reduce use, and then set goals for curbing the use of the drugs in each of the markets by the end of 2020. Starting in 2022, McDonald’s will publicly report the results.

Specifically, the fast food giant will limit the use of antibiotics defined by the World Health Organization as being medically important to treat illness in people. Producers supplying McDonald’s

won’t be allowed to use the drugs to promote animal growth or prevent disease, except in certain circumstances under veterinary guidance. Sick animals can be treated with antibiotics.

“The ultimate impact of McDonald’s efforts will depend on the targets it develops in the next two years, and we’ll be watching that closely,” says Halloran. “While consumers won’t immediately see big changes, if this plan turns out to be as robust as we hope and drives further change, this would be very significant to public health.”

Changing Attitudes

The first Chain Reaction Report, published in 2015, found that 20 of the top 25 chains had no policies to

limit their antibiotic use for any meat or poultry.

In this report, the number of chains with no policy on antibiotic use dropped to seven. According to Halloran, that’s a lot of change in a short time, and it may have been driven by consumers. Almost 60 percent of the respondents in the CR survey indicated that they would be more likely to eat at a restaurant that served meat raised without antibiotics, and more than half agreed that restaurants should stop serving meat raised with antibiotics.

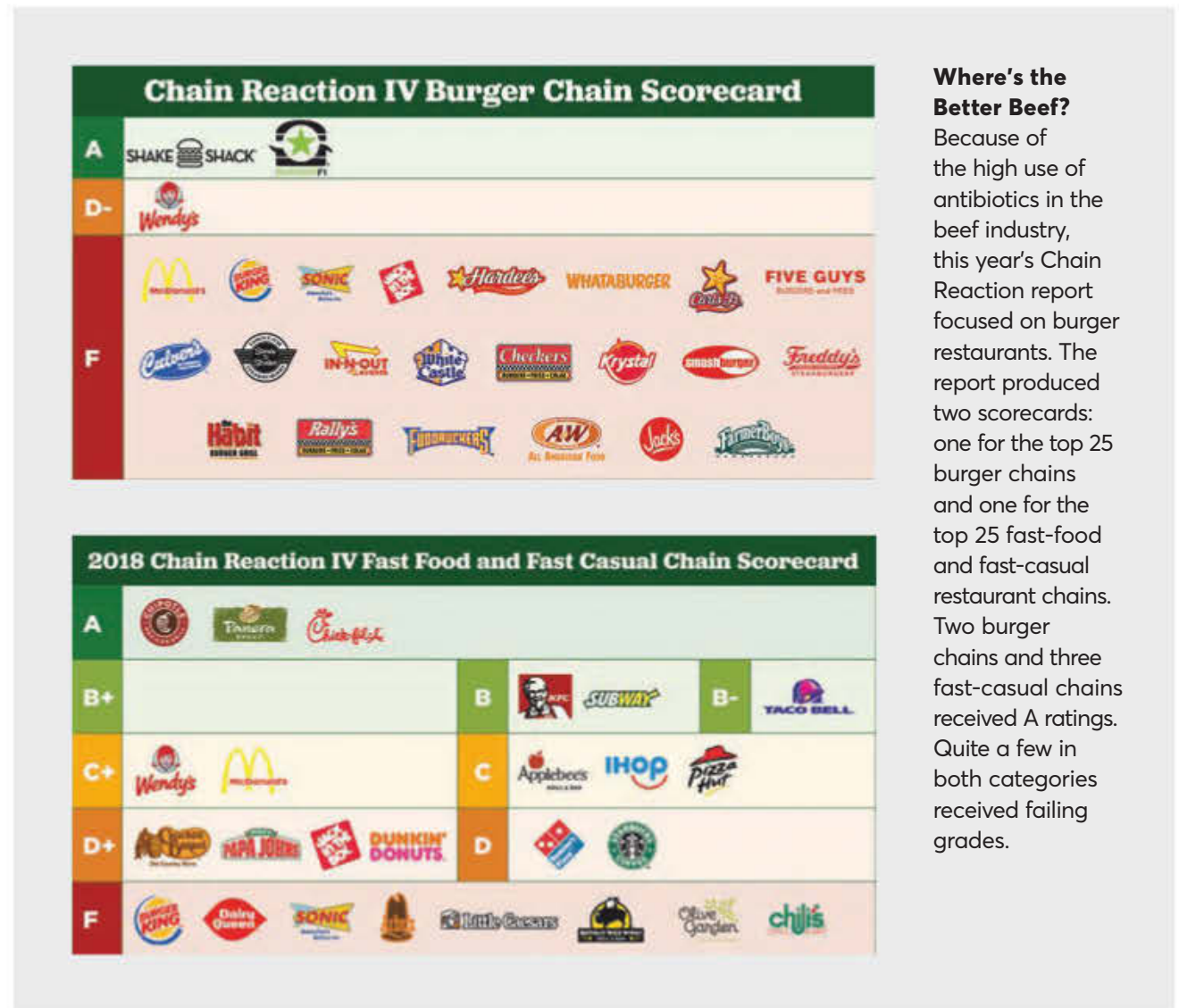
Other Results from the New Report

- Three chains—Chick-fil-A, Chipotle, and Panera Bread—received the highest grade

of A. Almost all the meat and poultry served at Panera and Chipotle are raised without any antibiotics at all. These companies have top scores in all four Chain Reaction reports. Chick-fil-A is the newest company to receive a top grade. The company says it’s on track to source all its chicken from suppliers that don’t use antibiotics by the end of 2019.

- Eleven companies improved their scores from 2017, including Jack in the Box, KFC, and Papa John’s.

- Applebee’s and IHOP (both owned by Dine Brands Global) implemented their first-ever policies to address antibiotics in both their chicken and pork supplies, raising their scores from F’s to C’s.



Where's the Better Beef?

Because of the high use of antibiotics in the beef industry, this year's Chain Reaction report focused on burger restaurants. The report produced two scorecards: one for the top 25 burger chains and one for the top 25 fast-food and fast-casual restaurant chains. Two burger chains and three fast-casual chains received A ratings. Quite a few in both categories received failing grades.



Was It Something You Ate?

Food allergies can develop at any age. Here's how to know if that's what you have, and what to do.

ALMOST 19 PERCENT of Americans think they have food allergies, according to a recent study published in *JAMA Open*. But the research, based on a nationally representative survey of 40,443 people, estimates that only 10.8 percent of American adults may actually have a food allergy. That's still a sizable number—more than 26 million people in the U.S. But it does reveal that there is confusion about what constitutes a food allergy vs. a food intolerance. The research also found that, contrary to popular opinion, you can develop food allergies after childhood. Nearly half of those with them reported the onset of a new one in adulthood.

In addition, people can become less able to tolerate certain foods as they get older. Milk is a common example: Most adults who are lactose-intolerant had no trouble drinking milk when they were young.

Whether or not you suspect you have an allergy

or think you might have an intolerance to certain foods, the stakes are high enough that it doesn't make sense to guess. Here's what you need to know to determine why you might be having a reaction to certain foods and whether that reaction could become dangerous.

Allergy or Intolerance?

Early allergies to ingredients such as eggs, milk, and soy often resolve during childhood, but they can resurface later. And at any point in your life, you can develop new food allergies (which can be life-threatening) or intolerances (which generally cause gastrointestinal distress).

A food allergy is an abnormal and overactive response by your immune system to something it shouldn't react to. When you eat the offending ingredient—or sometimes just come into contact with it—your immune system revs up production of antibodies, proteins that fight foreign substances. These indirectly trigger the production

of histamines, which start what we recognize as an allergic reaction.

Allergy symptoms can involve your skin, respiratory system, and gastrointestinal system. They may be mildly uncomfortable or downright dangerous, and can vary in severity and type each time you come into contact with the food. Swelling, itching, hives, shortness of breath, difficulty swallowing, lightheadedness, and/or vomiting within a few minutes to a couple of hours of eating a food may signal an allergy.

“Most allergic reactions happen quickly, right after you've eaten a food,” says Princess Ogbogu, M.D., an associate professor of

Smart Swaps for Problem Foods

Dairy, nuts, shellfish, and wheat are the most common foods that cause adverse reactions. But cutting them from your diet may rob your body of calcium, protein, fiber, and omega-3 fatty acids. Here, Jen Bruning, M.S., R.D.N., L.D.N., a spokesperson for the Academy of Nutrition and Dietetics, explains how to replace them.



CALCIUM

This nutrient is abundant in dairy, and it's crucial for maintaining your teeth and bones. Milk-free calcium-rich sources include dark, leafy vegetables, such as broccoli rabe and collard greens; fish with soft bones, such as sardines and canned salmon; and fortified orange juice and almond milk.



PROTEIN

This macronutrient helps your body make bones, muscles, cartilage, skin, and blood. It also helps keep hormones and enzymes functioning properly. If you're limiting dairy or cutting out seafood, eat lean meats, beans, peas, nuts, seeds, and whole grains to ensure that you're getting enough protein.



FIBER

Going gluten-free? "Choose grains like oats, quinoa, and sorghum to replace some of the fiber in your diet," Bruning says. Legumes, vegetables, and fruits are also rich in the nutrient. Fiber boosts bowel health and regularity, and may help lower cholesterol and control blood sugar.



OMEGA-3 FATTY ACIDS

These may help protect against heart disease. If you can't eat omega-3-rich fish and shellfish, load up on walnuts, and chia and flaxseed.

medicine and director of allergy and immunology at the Ohio State University Wexner Medical Center. "If you have such symptoms after a meal, see your physician or an allergist," Ogbogu says.

This is especially crucial if you have a reaction after eating shellfish. "It's rare to develop an anaphylactic allergy to most foods as an adult, but shellfish is the exception," says Manish Ramesh, M.D., Ph.D., director of the Food Allergy Center at the Montefiore Medical Center in the Bronx and Scarsdale, N.Y. (Anaphylaxis is a life-threatening reaction that causes difficulty breathing and a loss of consciousness.)

Food allergies are more likely to occur in those who have other allergic conditions. "People who have environmental or seasonal allergies, eczema, or asthma are at an increased risk," Ramesh says.

Among adults, shellfish is the most prevalent food allergy, but milk, eggs, soy, peanuts, and tree nuts are also common offenders.

Food intolerances or sensitivities usually don't involve the immune system. "A food intolerance occurs in the digestive system because it's the inability of your body to break down certain substances," Ramesh says. Experts don't understand all of the mechanisms involved, but they have found the most prevalent one: dairy.

"When you're lactose intolerant, your body isn't producing enough of the enzyme that breaks down the sugar in milk," Ogbogu says. The condition becomes more common as you age. In the U.S., an estimated 117 million adults and children 10 and older are lactose intolerant.

The signs of intolerance are most often digestive, such as gas, bloating, diarrhea, and cramping.

"The symptoms can vary in intensity depending on how sensitive you are to the food," Ramesh says. When the only symptom is digestive—such as vomiting—food poisoning could be to blame.

Diagnosis and Treatment

Because a food allergy could land you in a hospital, it's important to get an accurate diagnosis. Doctors use a skin or blood test (or both) to confirm an allergy. "The two are often interchangeable, and it depends on the food and who's doing the testing," Ramesh says.

During a skin test, drops of allergen extracts are applied to your skin, which is then pricked. If you're allergic to the food, a raised bump will usually appear within 15 minutes. A blood test measures levels of an antibody called IgE that is produced in response to allergens.

If the tests are inconclusive, the doctor may have you try an oral food

Was It Something You Ate?

challenge, where you eat a small quantity of a potential allergen under medical supervision.

The treatment plan for a food allergy is simple yet life-changing: Avoid any contact with the food that's causing problems. Be extra cautious when eating out (alert your server), and carefully read labels when purchasing packaged foods.

“One allergic reaction doesn't predict the next,” Ogbogu says. “Even if you've had a fairly mild reaction in the past, a future reaction could be more severe.”

That's why many doctors will prescribe self-injectable epinephrine (Adrenaclick, EpiPen, or generic) when you test positive for a food allergy. “If your physician recommends an EpiPen, it's important to carry it with you at all times,” Ogbogu says. “It could save your life in the event of an accidental exposure that causes anaphylaxis.”

Pinpointing food intolerances is more challenging than diagnosing allergies. Aside from lactose and fructose intolerance (which can be confirmed via a breath test), most food sensitivities can't be accurately detected through lab work. But if you have gastrointestinal symptoms after eating, you should still see your primary care doctor to rule out other causes, such as inflammatory bowel disease.



‘One allergic reaction doesn't predict the next,’ Ogbogu says, but a future reaction could be more severe.

Skip home tests, which are frequently inaccurate and may cause you to eliminate a food from your diet unnecessarily. Ramesh says that many of them measure an antibody that has little to do with food allergies or sensitivities.

Your doctor may ask you to try an elimination diet to zero in on the food that might be causing your digestive problems. That's when you stop eating many types of potentially problematic foods, then reintroduce them one at a time. He or she might also suggest a plan that combines keeping a journal with eliminating one food at a time. “Keep a diary of everything you eat

and how you feel afterward,” Ogbogu says. “If you have symptoms every time you eat a certain food, try eliminating it from your diet to see if you feel better.”

When you've found an offender, you may want to try introducing it back into your diet in small amounts. Some people with food intolerances can handle limited quantities of the trigger item with no symptoms.

Different forms of food may also be tolerable. If you're lactose intolerant, you may be able to eat certain cheeses or yogurts. And if you're sensitive to fructose, you may tolerate certain fruits but not high-fructose corn syrup.

Should You Go Gluten-Free?

For almost a decade, popular diet plans have proposed that gluten—a protein found in wheat, rye, and barley—is responsible for many common health problems. The trouble is that there's little evidence a gluten-free diet has any health benefits for most people.

Some people do need to avoid gluten: those with celiac disease, an autoimmune condition in which gluten causes intestinal inflammation

and damage, and those who have a condition known as nonceliac gluten sensitivity (NCGS), which can cause gastrointestinal symptoms in response to gluten. But these two conditions combined affect less than 7 percent of Americans.

For people who don't have celiac or NCGS, there's not much to recommend gluten-free. A 2017 study in the *British Medical Journal* found no connection between

eating gluten and an increased risk of heart disease in people without celiac disease.

In fact, giving up gluten may actually be harmful. The same study showed that people who chose a gluten-free diet were more likely to eat fewer whole grains, which has been shown to help protect against cancer and heart disease. The grains are also high in fiber, which lowers the risk of type 2 diabetes.



Let the Sunshine In

While getting too much damages skin, some sun exposure may be good for you.

SUNSHINE IS A MIXED BLESSING. There's no question that it can be a danger to your skin—the ultraviolet (UV) radiation emitted by the sun is a known carcinogen. But spending time in the sun may have many health benefits—including stronger bones, better sleep, improved mood, and a healthier immune system. And when you continuously shield yourself from the sun or always cover every inch of exposed skin with sunscreen, you could be missing out on some of those benefits.

As the evidence that some sun is good for you grows, many experts are rethinking their staunch sun-avoidance advice. For example, despite Australia having one of the highest skin cancer rates in the world, Cancer Council Australia recognizes that some time in the sun without sunscreen or other protection is important, according to Robyn Lucas, Ph.D., a professor at the Australian National University College of Health and Medicine who researches environmental effects on health. And recently the National Academy of Sciences assembled an international group of medical experts from different fields to discuss sun safety. The report from that meeting, published in late 2017 in *JAMA Dermatology*, stated that “although the harms associated with overexposure outweigh the benefits, the beneficial effects of UVR [ultraviolet radiation] exposure should not be ignored in developing new sun safety guidelines.”

Bone Health and Beyond

Sun exposure’s best-known benefit is vitamin D synthesis, which occurs in the skin in response to the sun’s UVB rays. Vitamin D is a critical nutrient: “It’s absolutely essential to promote absorption of calcium, the mineral that helps keep bones strong,” says Clifford Rosen, M.D., an osteoporosis researcher at the Maine Medical Center Research Institute in Scarborough.

And sunlight may also play other roles in promoting good health. The research is ongoing, but so far studies suggest that UV exposure might lower blood pressure (which helps to protect against heart attack and stroke), curb appetite, and reduce the risk of obesity, type 2 diabetes, and possibly certain autoimmune diseases.

Sunshine might even be linked to longevity: A *Journal of Internal Medicine* study that monitored nearly 30,000 Swedish women for about 20 years found that those who spent more time in the sun

The UVB rays that help our skin produce vitamin D are also the same type that causes sunburn—a major risk factor for skin cancer.

lived six months to two years longer than those who racked up less sun exposure. “More research is required to replicate this work, but if it’s a real effect, it’s very important,” Lucas says.

But the UVB rays that help our skin produce vitamin D are also the same type that causes sunburn—a major risk factor for skin cancer. That’s why it is key to find the right balance.

Short Stints Do the Trick

According to Rosen, in the summer it takes only about 10 minutes a day of unprotected solar exposure on a small area of skin to produce around 5,000 IU of vitamin D, which is enough for most people—even older folks, who have a slightly reduced capacity to make vitamin D—to maintain normal blood levels.

But for some people, 10 minutes might be too long; for others, too short. “How much is enough is hard to quantify since skin pigmentation affects how much UV radiation your

skin absorbs, but it’s way less than you need to get a sunburn,” Lucas says.

To determine the length of time you can stay in the sun without burning, Lucas suggests using the UV Index—which forecasts the level of solar radiation in your area on a scale of 0 to 11. The UV Index varies by location and time of day and year; to find the UV Index for any particular day and time in the U.S., enter the ZIP code of the area you’re in on the Environmental Protection Agency’s web page, at epa.gov/sunsafety/uv-index-1.

To calculate the right UV dose for you, divide 60 (as in the number of minutes in an hour) by the UV Index to find out how many minutes outdoors it will take for you to get 1 SED. SED stands for “standard erythemal dose,” a fixed dose of sun intensity that will cause erythema, or reddening of the skin. (See “Don’t Get Burned,” at left, for the approximate SED it takes for different skin types to burn.) For example, if the UV Index is 7, divide 60 by 7 to get 8 minutes for 1 SED. If you are fair, you’ll get sunburned with 2 to 3 SED (16 to 24 minutes).

“These numbers are a generalization of skin type by ethnicity,” Lucas says. So it is best to be conservative using them. In the above example, for instance, to be on the safe side you might go in the sun unprotected

DON’T GET BURNED

Getting a sunburn is possibly the single most dangerous thing you can do to your skin. When it comes to how much sun you can get without burning, let your skin type be your guide.

Skin Type	SED Needed for Skin to Burn
Very Fair	1-2
Fair	2-3
Olive	4-5
Moderate Brown	5-6
Dark Brown or Black	7-8

Sunscreens You'll Want to Wear

Sunscreen can be sticky and greasy or leave you looking pasty or smelling like you crashed into a vat of Tropicana-themed cocktail mix. But there are also products that feel great and smell good, too.

Fragrance-Free

✓ **LA ROCHE-POSAY ANTHELIOS 60 MELT-IN SUNSCREEN MILK**
 \$7.20/oz.

100 OVERALL SCORE

Our top-rated lotion is fragrance-free, although it does have a very slight plasticky smell. It's light-weight and absorbs quickly.

Won't Irritate Eyes

✓ **UP & UP (TARGET) KIDS SUNSCREEN STICK SPF 55**
 \$6.67/oz.

84 OVERALL SCORE

Sunscreen sticks are less likely to run because of their waxy consistency. This one has a faint plasticky scent and a slightly tacky, waxy texture.

Best Beachy or Tropical Scent

💰 **TRADER JOE'S SPRAY SPF 50+**
 \$1.00/oz.

100 OVERALL SCORE

Has a very slight classic beachy aroma, a combination of floral and citrus. Leaves an oily sheen on skin.

✓ **BANANA BOAT SUNCOMFORT CLEAR ULTRAMIST SPRAY SPF 50+**
 \$1.33/oz.

96 OVERALL SCORE

Slight piña colada scent and a barely-there feel.

Nongreasy

✓ **CVS HEALTH BEACH GUARD CLEAR SPRAY SPF 70**
 \$1.54/oz.

90 OVERALL SCORE

Leaves just a trace of film on your skin and smells floral and fruity. The nozzle sprays in a wide pattern, allowing for easy and quick coverage.

✓ **AVEENO PROTECT + HYDRATE LOTION SPF 30** \$2.67/oz.

82 OVERALL SCORE

Sheer, with a light, fruity aroma.



for 12 minutes maximum.

Most important, always err on the side of safety.

“You don’t even want to get a little pink because UV exposure that is enough to cause sufficient damage to the skin clearly outweighs the benefits of that exposure,” says Robert S. Stern, M.D., professor of dermatology at Harvard Medical School.

Keep in mind, too, that the amount of time you can spend in the sun without burning each day doesn’t reset to zero with subsequent time outside. “If, for example, the calculation you work out involving the UV Index is 15 minutes, that should be your total limit for the day—whether that’s in one sitting, or two or three sittings,” Lucas says.

Let In the Light

When heading out to soak up some sun, Lucas recommends applying sunscreen to your face and hands (they’re always getting sun and are at high risk for skin cancer, wrinkles, and brown spots), wearing a broad-brimmed hat and sunglasses, and exposing what you can of your arms and legs. If you’re particularly sun-sensitive (for instance, you have had skin cancer or you take a medication—such as certain diuretics and antidepressants—that increases your risk of sunburn), talk to your doctor before going sans sunscreen.



Best and Safest Ways to Relieve Pain

Opioid medications are risky and not all that effective. Here, the right methods for easing common discomforts.

IF YOU SPEND the day wincing—from arthritis, back pain, a recent surgery, or serious headaches—your doctor might suggest that you try a powerful opioid medication. But that’s not your only option, and it shouldn’t be your first.

Nearly a third of adults ages 50 to 80 report filling such a prescription within the past two years, according to a 2018 poll. These drugs can be risky: As many as a quarter of people taking opioids long-term end up battling addiction. But doctors still handed out more than 191 million opioid prescriptions in 2017 alone.

“Many older adults may be taking opioids unnecessarily,” says David Ring, M.D., Ph.D., professor of surgery and psychiatry at Dell Medical School at the University of Texas at Austin and a spokesperson for the American Academy of Orthopaedic Surgeons.

Yet for many types of pain, opioids aren’t any more effective than non-opioid medications, research has shown. A 2018 JAMA study found that people who took opioids for chronic back, knee, or hip pain did no better—and in some cases had worse pain—than those who took non-opioid medications. And even non-opioid medications, such as ace-

taminophen (Tylenol and generic), pose risks. “That’s why we often prefer to use nondrug therapies as the first-line option,” Ring says.

Here, some safer ways to treat four common pains.

Lower Back Pain

Lower back pain affects nearly half of healthy, active people 60 and older. Most of the time it can be successfully treated and managed with nondrug measures: The American College of Physicians (ACP) recommends therapies such as heating pads, massage, acupuncture, tai chi, and yoga as first-line treatments.

“The safety profile is much better, and the effectiveness

is quite similar to most drug therapies,” says Roger Chou, M.D., professor of medicine at Oregon Health & Science University in Portland.

If you’ve thrown out your back and are in agony, try over-the-counter ibuprofen (Advil and generic) or naproxen (Aleve and generic) for a week or two, Chou says. These may be a better choice than acetaminophen, which the ACP didn’t find to be effective. Recent research has also found that people who stay gently active—walking and stretching—have a faster recovery and less discomfort than people who stay in bed.

If pain lasts longer than a week or two, see your doctor, who can prescribe physical therapy or, in some cases, a limited course of spinal manipulation (three to four weeks) with a licensed chiropractor.

For chronic back pain that’s not responding to these measures or to prescription-strength nonsteroidal anti-inflammatory drugs (NSAIDs), the ACP recommends the prescription pain pill tramadol (Ultram and generic) or the anti-depressant duloxetine (Cymbalta and generic). But both have a small effect; you’ll still need to use nondrug methods.

Postsurgical Pain

If you’re having surgery, your plan for managing pain afterward should begin

before the operation: Ask your surgical team whether it’s possible to get regional anesthesia (instead of general), including a peripheral nerve block. Both can help reduce the need for opioids postsurgery, says Stavros G. Memtsoudis, M.D., Ph.D., director of critical care services in the anesthesiology department at the Hospital for Special Surgery in New York City.

While opioids may be a useful part of a postsurgical pain plan in the short term, they are not a cure-all. New research on more than 1.5 million surgical patients found that those who got at least two other forms of pain medication, such as acetaminophen and an NSAID, along with an opioid did better overall. In general, you should take opioids only as necessary to relieve breakthrough pain and for no longer than three weeks after a procedure.

People coming out of surgery should also “have realistic expectations—they can’t expect to go home from the hospital feeling absolutely pain-free,” Memtsoudis says. “But they should be able to read without being distracted by pain.”

Headache

For people prone to migraines, first-line treatment is usually a class of drugs called triptans, which reduce inflammation and constrict

For many types of pain, opioids are not more effective than non-opioid medications.

blood vessels. But these need to be prescribed with caution for anyone who already has heart disease, high blood pressure, or other risk factors. Opioids have not been shown to improve migraine symptoms and may make triptans less effective, says Alan M. Rapoport, M.D., clinical professor of neurology at the David Geffen School of Medicine at UCLA in Los Angeles.

If you have the dull ache of a tension headache—the most common type—once or twice a month, treat it with an OTC pain reliever, such as ibuprofen or acetaminophen. Exercise or relaxation can help, too. But if you’re getting headaches more frequently—say, every week—see your doctor. People who self-treat more than twice a week can develop a medication-overuse headache, Rapoport says.

For frequent headaches of any kind, research has found that complementary therapies, such as acupuncture, massage, and biofeedback, may be effective in some cases. Others benefit from a daily preventive, such as a tricyclic antidepressant or the blood pressure drug propranolol (Inderal and generic).

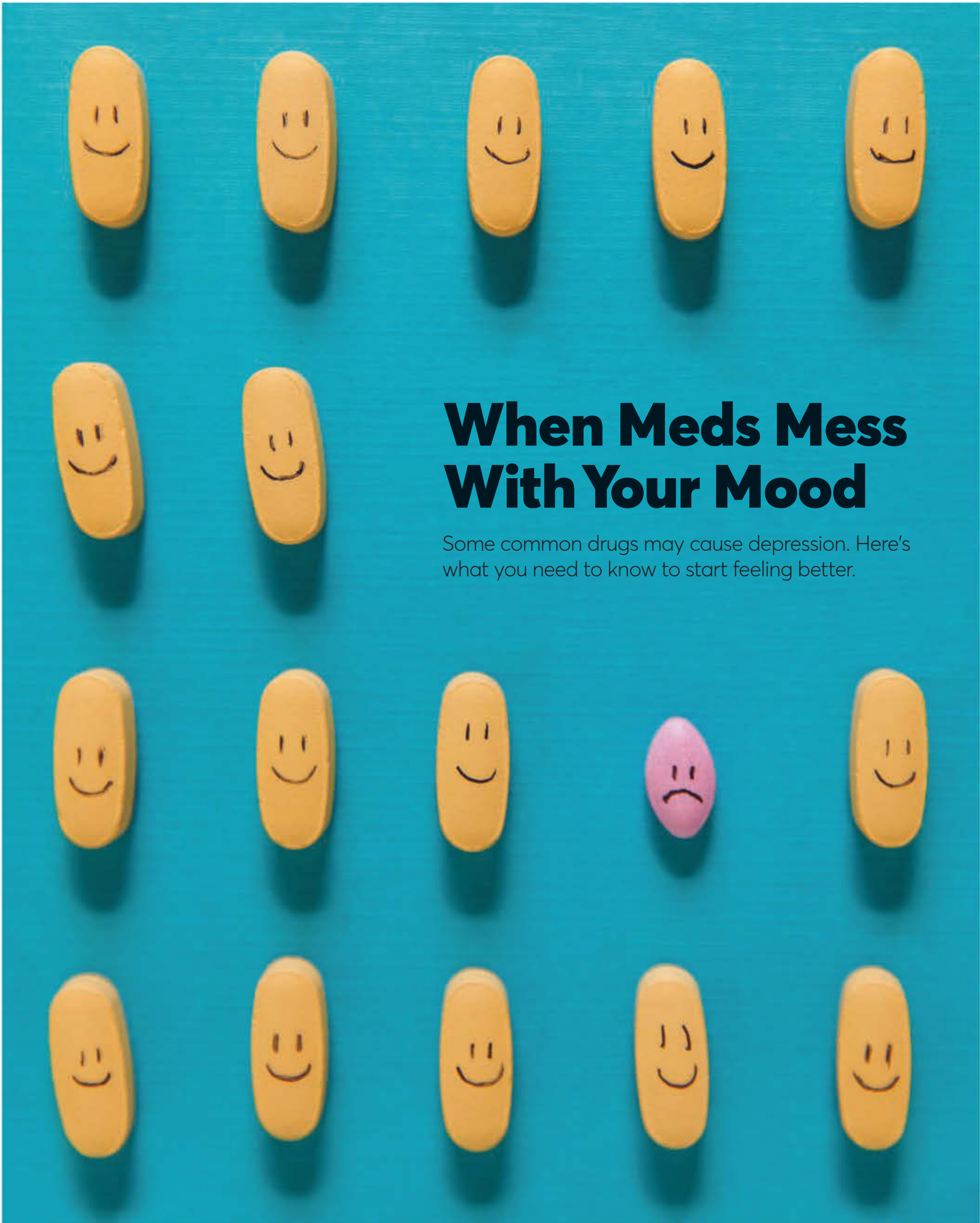
Joint Pain

Arthritis is common, and the most common form is osteoarthritis, where cartilage in joints breaks down, causing pain, swelling, and stiffness. But research has shown that opioids should generally not be used to treat OA; the potential harms outweigh the benefits.

Instead, try wrapping a bag of ice in a towel and applying it to the affected area for up to 20 minutes at a time—cold can help ease acute joint pain. If a joint feels stiff but not painful, apply a heating pad to the area for 15 to 20 minutes. Then try some low-impact activity, such as walking, which can relieve pain as effectively as an over-the-counter NSAID, such as ibuprofen or naproxen. Naproxen appears to be the most effective oral pain reliever for joint pain, but don’t use it for more than a week without consulting your doctor. Yoga, tai chi, and swimming can also help.

If these steps don’t help, consider trying a topical prescription NSAID. But think twice about using diclofenac (Voltaren and generic), which has been linked to an increased risk of heart attack and stroke.

You can also help deter OA by trying to stay at a healthy weight. Research has shown that for those who are overweight or obese, losing weight can help reduce pain and inflammation.



When Meds Mess With Your Mood

Some common drugs may cause depression. Here's what you need to know to start feeling better.

ALL MEDICATIONS HAVE the potential to cause unwanted side effects, including depression. In fact, one-third of Americans are now taking meds that can cause this mood disorder, according to a study published last June in the *Journal of the American Medical Association*. Other research has had similar findings, but this is the largest review on the topic to date.

The study authors found that about 200 prescription drugs, including some often used by older adults—such as proton pump inhibitors to treat acid reflux and beta-blockers for hypertension—can lead to depression. (See “9 Drug Types That May Cause Depression,” on page 24.)

Doctors might not know this. “Many physicians may not be aware that several commonly prescribed medications are associated with an increased risk of this disorder,” says study author Mark Olfson, M.D., M.P.H., professor of psychiatry and epidemiology at the Columbia University Irving Medical Center in New York City. In the study, the more drugs people took, the higher their depression risk. About 7 percent of those taking one such drug were depressed; 15.3 percent of those taking at least three were.

This is particularly concerning for older adults, who may take multiple medications and are more vulnerable to drug side effects, says Michael Hochman, M.D., M.P.H., director of the Gehr Family Center for Health Systems Science at Keck Medicine of USC.

However, “it’s important to bear in mind that most people taking these medications, even those who are on three or more of them, don’t

have depression,” Olfson says. Still, it’s wise to keep the connection in mind and know when a drug might be affecting your mood.

Monitor Your Mood

Whether you take multiple meds or none, if you’re experiencing a low mood for two consecutive weeks or longer, let your doctor know. Other depression symptoms to watch for include loss of interest in pleasurable

activities, appetite or weight changes, insomnia or sleeping too much, severe fatigue, trouble concentrating, feeling worthless, and recurrent thoughts of death or suicide.

Don’t wait for your doctor to ask about your mood at your next appointment, Olfson says. In one study published in the journal *Psychiatry Online* in 2018, only about 3 percent of primary care appointments included a depression screening. You can also take an online test, such as the Patient Health Questionnaire-9 (PHQ-9), says Michelle Riba, M.D., associate director of the University of Michigan Comprehensive Depression Center in Ann Arbor.

Check Your Meds

When you talk to your doctor, ask whether any of your

meds could be the cause. And consider bringing all your prescription and over-the-counter medications with you so that your doctor can look them over. (You should do this kind of “brown-bag review” at least once a year, whether you’re feeling depressed or not.) “Sometimes when we do this, we learn that a patient has been taking a proton pump inhibitor to treat heartburn for years, when they really don’t need to,” Hochman says. “This could also be contributing to their depression.”

If your physician doesn’t seem well-versed in the side effects of your medications, make an appointment with the pharmacist where you get prescriptions filled, says Joan Baird, Pharm.D., director of pharmacy practice and government affairs at the American Society of Consultant Pharmacists.

Not Sure It’s the Meds?

Your doctor can help you figure out the cause of your depression

Taking drugs linked to depression might not be the cause of your low mood. “Sometimes people were depressed before they started medications, or various health conditions have left

them depressed,” says Igor Galynker, M.D., professor of psychiatry at the Icahn School of Medicine at Mount Sinai in New York City. For instance, up to half of people with

chronic pain also have depression or another mood disorder—because parts of the brain that perceive pain also affect mood.

Your primary care physician can try to figure it out

by taking a thorough history and adjusting your medications when appropriate. But some people may need to see a psychiatrist to pinpoint what’s really going on.

Watch Your New Meds

Drug-related depression symptoms can crop up at any time, but you're most likely to see them within the first month of use, Olfson says. So every time your physician prescribes a new medication, ask whether depression is a possible side effect. If so, jot down any mood-related side effects you notice. Note the day and time when symptoms occur, and whether they're recurring. Report any symptoms that persist for more

than a week or two to your doctor immediately.

Ask About a Change

If medication seems to be the cause, talk to your doctor. Sometimes the fix is as simple as cutting the dosage. For instance, if your doctor prescribes a lower but still effective dosage of a blood pressure-lowering beta-blocker and your depression eases, that may be a sign that your mood changes were drug-related, says Ana



Never stop a regular prescription drug without discussing it with your doctor.

María López, M.D., president of the American College of Physicians.

If the lower dosage makes little difference in mood or doesn't work well for your physical health, your doctor should switch you to another class of drugs, says Philip Muskin, M.D., professor of psychiatry at Columbia University Irving Medical Center. Depending on your health status, you may be able to stop taking a medication altogether—but never stop a regular prescription drug without discussing it with your doctor.

9 Drug Types That May Cause Depression

Be aware that these meds can affect mood

1. BETA-BLOCKERS AND ACE INHIBITORS (BLOOD PRESSURE DRUGS) metoprolol, atenolol, enalapril, and quinapril.

2. ANTIDEPRESSANTS sertraline (Zoloft and generic), citalopram (Celexa and generic), bupropion (Wellbutrin and generic), and amitriptyline.

3. ANTI-ANXIETY DRUGS alprazolam (Xanax and generic), clonazepam (Klonopin and generic), diazepam (Valium and generic), and lorazepam (Ativan and generic), as well as the sedative zolpidem (Ambien and generic).

4. OPIOIDS hydrocodone combination meds (Lorcet, Norco, Vicodin, and more, and generic), and tramadol (ConZip).

5. CORTICOSTEROIDS prednisone and others.

6. OVER-THE-COUNTER PROTON PUMP INHIBITORS omeprazole (Prilosec, Zegerid, and generic) and esomeprazole (Nexium and generic), as well as the antacids ranitidine (Zantac and generic) and famotidine (Pepcid and generic).

7. ALLERGY AND ASTHMA MEDICATIONS over-the-counter cetirizine (Zyrtec and generic) and the prescription drug montelukast (Singulair).

8. ANTICONVULSANTS gabapentin (Neurontin and generic) and topiramate (Topamax and generic).

9. HORMONES estradiol (Delestrogen, Elestrin, EstroGel, and generic) and finasteride (Proscar, Propecia, and generic).

Explore Lifestyle Fixes

If you can't reduce a dosage or stop taking a medication, talk to your doctor about other strategies. "We can talk with a patient about lifestyle changes that may help—for example, starting a daily walking routine if you've been sedentary, because exercise can help improve mood, or having you increase your social connections, because a sense of belonging can also improve mood," López says. One recent study found that 28 percent of sedentary people being treated for depression reported improvements three months after beginning a moderate or brisk walking routine.

The next step might be talk therapy—or, if your symptoms linger, antidepressant medication. Keep in mind that certain antidepressants may trigger anxiety.

STAY-WELL STRATEGIES

Expert advice and independent product reviews to help you feel your very best



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HEALTHY EATING FOR LIFE

A nutritious diet can give you more energy, fight disease, help you live longer—and taste great, too. Try these easy tweaks to supercharge your menu.

Giving your eating plan a healthy makeover is a worthy goal that can feel like a big, difficult sacrifice. But it doesn't have to, especially if you start small. "People set unrealistic goals and attempt to make wholesale changes," says Lesley Lutes, Ph.D., an associate professor of psychology at the University of British Columbia. "That all-or-nothing behavior becomes overwhelming, leaves you feeling deprived, and sets you up for failure." For a more manageable approach, read on.







Go Meatless More Often

A study published in *JAMA Internal Medicine* found that replacing animal protein with an equivalent amount of plant protein was associated with a lower risk of mortality, especially from heart disease. So swap your burger for a veggie one or make a bean chili so hearty you won't miss the meat.

Eat Healthy Foods You Like

A study from Baylor University's Hankamer School of Business found that even people with little self-control can set themselves up for healthy-eating success if they switch their attention from what the researchers called "avoidance" foods to "approach" foods. Don't try to force-feed yourself something healthy that you

"You have so many diet choices to make every day, so even if you make a change only some of the time, the benefits add up," Lutes says.

A study from researchers at the University of South Australia supports that strategy. They found that

replacing just 25 percent of discretionary foods (such as dessert, snacks, and sugary beverages) with healthy foods resulted in a huge improvement in overall diet quality—reducing sugars by almost 21 percent and calories by almost 4 percent, and

increasing protein intake by about 2 percent. That means that something as simple as trading a few cookies for a piece of fruit can make a difference in helping you follow a healthier diet.

Here are eight easy ways to improve your eating:

Mastering the Art of Portion Control

Research has shown time and again that when we have a large portion of food in front of us, we're likely to eat more, even when we're not hungry. Here's how to train your brain to feel fuller, faster:

Scoop and pour. Use measuring spoons and cups to dole out precise portions for a

few weeks. You might be surprised to see that a serving of the cereal you eat most days is $\frac{3}{4}$ cup, but filling up the bowl to what looks like a reasonable portion puts you closer to 2 or 3 cups. (For a guide to serving sizes, go to choosemyplate.gov.)

Share with a friend. When dining out, start

with your own healthy appetizer and split the entrée. It's also wise to go halves on extras such as french fries and dessert.

Watch the portions you serve yourself of healthy foods, too. Plenty of nutritious foods, such as almonds and dates, are also high in calories.

And people tend to underestimate calories of foods they think are good for them, according to a study from Cornell University.

Focus on fiber. Simply choosing foods that are rich in fiber can help fill you up. Fiber-rich choices include beans, fruits, veggies, and whole grains.

Take smaller bites.

That can help you keep portions in check. For example, research from the Netherlands found that people who took tinier sips of tomato soup ate about 30 percent less than those who gulped it. (The researchers said that the finding applies to solid food, too.)

hate in place of something unhealthy you love.

“Seek out yummy healthy foods—such as strawberries—and you might find that after enjoying a big bowl of fresh berries you no longer want that chocolate cake,” says Meredith David, Ph.D., lead author of the study.

Enjoy More of the Right Kind of Fish

Oily fish such as salmon, sardines, and mackerel have the most omega-3 fatty acids, a type of polyunsaturated fat, so keep them high on your rotation, along with shellfish, which have moderate amounts. “There’s very solid science showing that omega-3s can help reduce inflammatory factors associated with a variety of chronic diseases, including heart disease,” says Marian Neuhouser, Ph.D., R.D., of the Fred Hutchinson Cancer Research Center in Seattle.



Skip Sugary Drinks

We all know that soda isn’t a healthy beverage choice. A recent study suggests that exchanging one serving per day for a glass of water could help reduce overall calorie intake and the subsequent risk of obesity, lowering your risk of developing type 2 diabetes by 14 to 25 percent. Consider your fruit juice intake, too. Even 100 percent fruit juices can contribute a lot of calories and sugars to your diet.

Prioritize Those Veggies

If you’re not eating enough vegetables, it could be because you put them in a contest they can’t win. “Research has shown that when vegetables are competing with other—possibly more appealing—items on your plate, you eat less of them,” explains Traci Mann, Ph.D., an assistant professor of psychology at

the University of Minnesota and author of “Secrets From the Eating Lab” (Harper-Collins, 2015). “But when you get the vegetables alone, you eat more of them.”

Mann has studied this strategy with college students and preschoolers, but says it would work for anyone. “Make a salad and sit down to eat it before you put any other food on the table,” she suggests. “You’ll not only eat more vegetables, you’ll also fill up a bit so that you eat less later in the meal.”

Focus on Whole Grains

Switching from products made with refined white flour to those made with whole-grain flours is a good start. But eating whole grains in their natural form, such as brown rice, buckwheat, farro, millet, oats, and wheat berries, offers more nutrients and fiber.

Opt For Healthy Fats

Research shows that certain types of fats are beneficial, even for heart health.

“If you get your fats from good sources like olive oil, avocados, nuts, seeds, and seafood, that’s not going to be a problem,” says Frank Hu, M.D., Ph.D., a professor of nutrition and epidemiology at the Harvard T.H. Chan School of Public Health. “Those foods contain polyunsaturated and monounsaturated fats, which are the advantageous types in terms of heart disease and diabetes risk.” But you should still limit saturated fat.

Strategize Snacking

To get all the nutrients your body needs, snack on a variety of foods—and go for a combination of protein (such as cheese) and carbohydrates (such as whole-grain crackers) at every snack. “Your body burns carbohydrates more quickly,” says Lauri Wright, Ph.D., chair of the department of nutrition and dietetics at the University of North Florida in Jacksonville. “Protein provides a slower, more sustained energy release to help you feel full longer.” And don’t shy away from fat! Including a food rich in healthy fats—such as avocado, hummus, nuts and seeds, and olive oil—in your snacks will boost satiety; plus, fat is crucial for the absorption of vitamins A, D, E, and K.



5 SLIM-DOWN SECRETS

Want to drop a few pounds? These easy tips can help.

1 Rethink your goals.

If your objective is too broad, you can flounder. For example, "have a salad with dinner every night" is more tangible than "eat more vegetables." But even a specific target needs to be narrowed. Your big picture vow can be "lose 20 pounds," but break it down into 5-pound chunks. Then when you hit each mini target, celebrate. Being positive about small successes helps to keep you moving forward.

2 Uncover the root of your motivation.

"Few people ask themselves why they set the goal they chose," says Christine Whelan, Ph.D., a clinical professor in the School of Human Ecology at the University of Wisconsin. "Accomplishing your goal can feel empty without understanding the motivation behind it." So if the real reason you want to lose weight is because you want to have more energy to play with your kids, remind yourself of that often. When you're clear about what you're

aiming for, you have a greater incentive to make the necessary changes to achieve your objective.

3 Start tracking your progress.

Keep a food diary, an exercise log, or simply a list of the steps you took that day toward your goal. "Such self-monitoring increases the probability of keeping your resolution," says John C. Norcross, Ph.D., distinguished professor of psychology at the University of Scranton

in Pennsylvania and author of "Changeology: 5 Steps to Realizing Your Goals and Resolutions" (Simon & Schuster, 2013).

4 Stop trying to go it alone.

Making a public commitment to a change in behavior increases your likelihood of success. Join a diet support group or find an exercise partner to help keep you accountable.

5 Get your priorities straight.

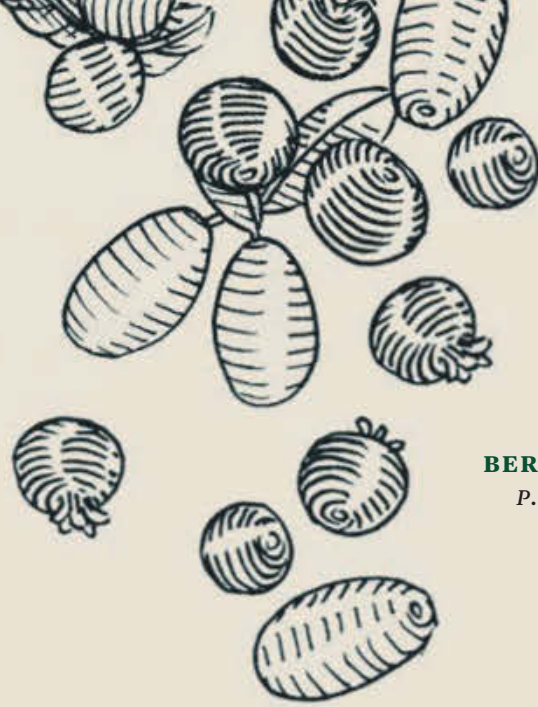
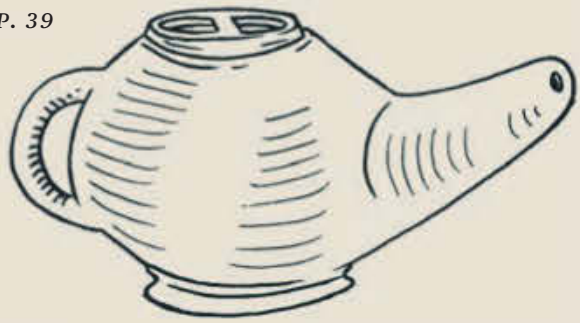
"Sit down with your calendar and be brutally honest about what you'll have to say no to in order to make time to achieve your goal," Whelan says. For example, if you plan to get to the gym five days per week, that's an hour of workout time, plus showering, changing, and driving back and forth—meaning those five gym sessions could take up to 10 hours per week. Can you find that much time? If not, maybe you should start off with three days first.



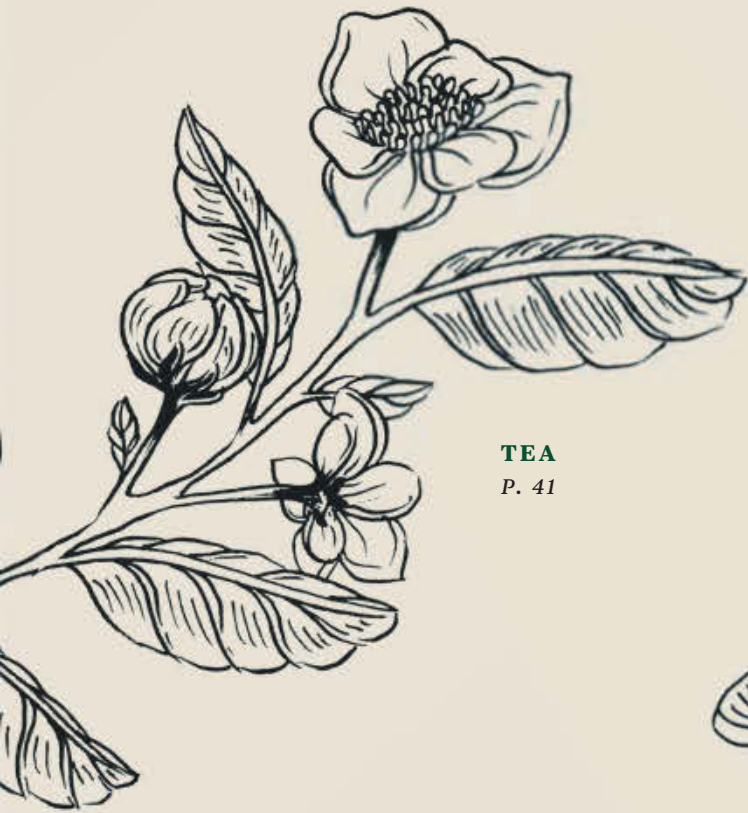


NATURAL

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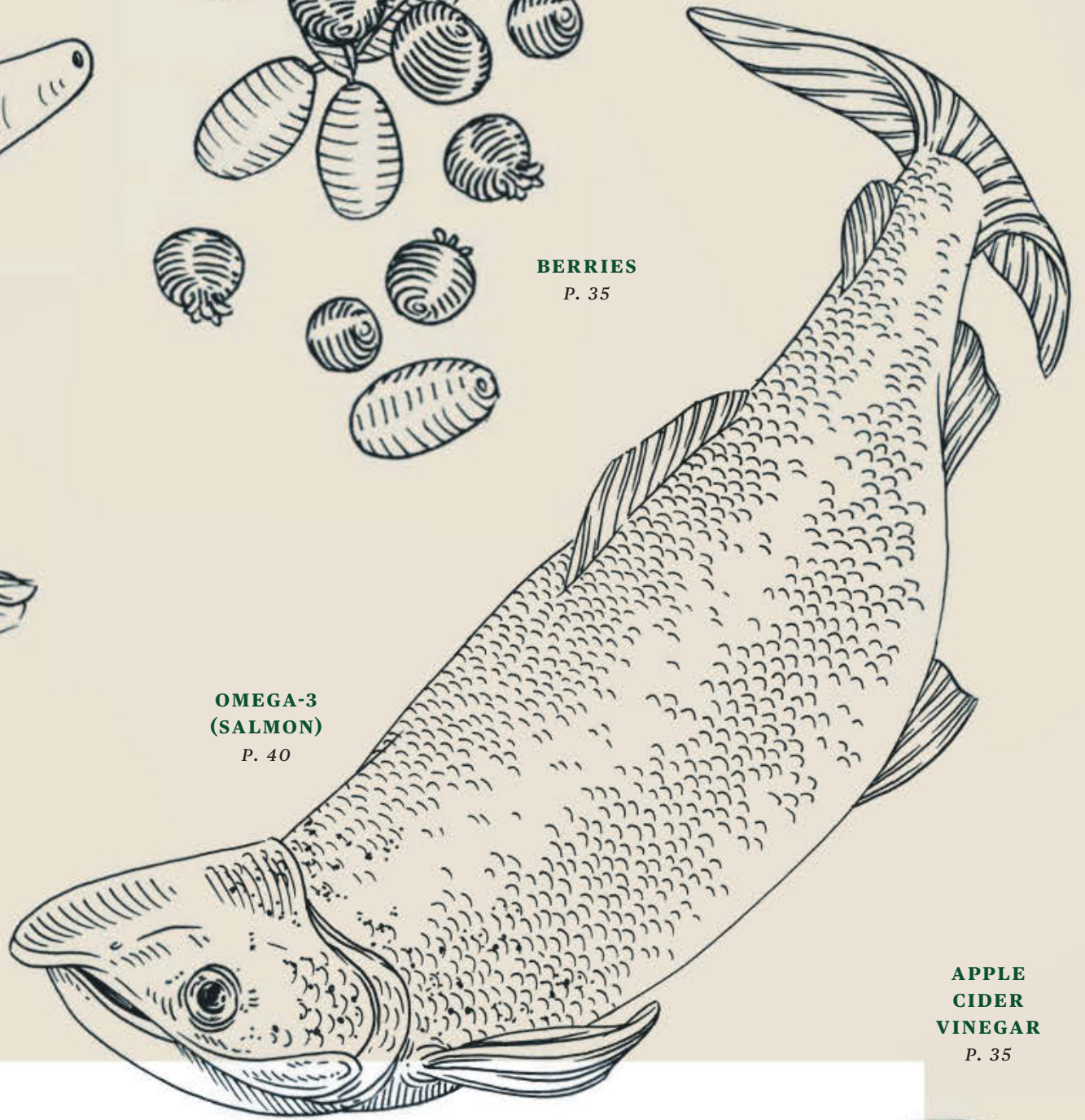


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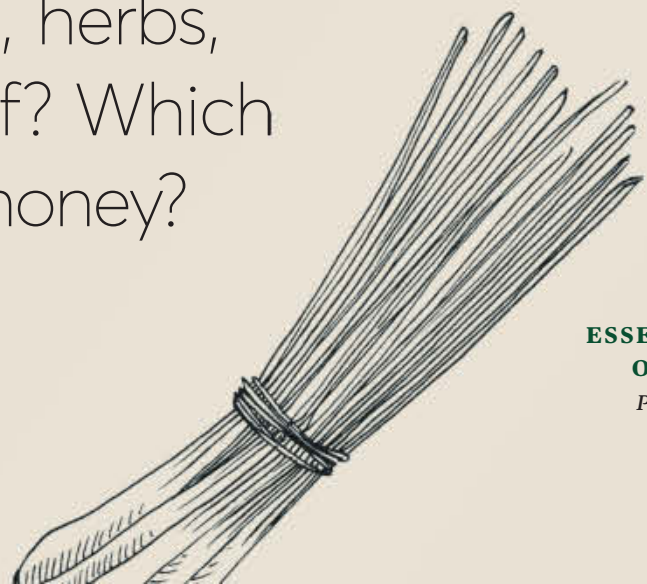
REMEDIES YOUR A-Z GUIDE



To treat pain, sleeplessness, stress, and other ills, people are increasingly turning to supplements, superfoods, detoxes, herbs, and more. Which provide real relief? Which are risky, harmful, or a waste of money? Here, what to know before you try.



TURMERIC
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Natural Remedies

To understand why the world of alternative medicine is so vexing, consider two of its most well-known examples: homeopathy and yoga.

Homeopathy is based on the idea that whatever causes an ailment will also cure it—using products diluted to the point where the key ingredient is undetectable. In spite of numerous studies showing that homeopathy doesn't work, the practice persists. In 2017, consumers in the U.S. spent more than \$1.3 billion on homeopathic remedies, according to the Nutrition Business Journal (NBJ).

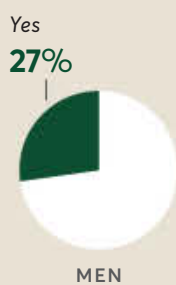
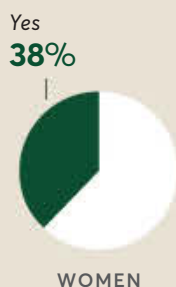
Yoga, on the other hand, which has its roots in ancient Indian spiritual practices, has been adopted by millions to help with crippling medical problems. And unlike homeopathy, there's good evidence that it works. Last year, for example, a comprehensive review found that regular yoga practice helps to relieve back pain, one of Americans' most common and hard-to-treat ailments.

A third of Americans say they have used alternative treatments in the past year—and more than half of these people say they prefer such approaches over mainstream medicine, according to a nationally representative Consumer Reports survey of 1,003 adults. Americans spent \$42 billion in 2017 on dietary supplements, according to an analysis from the NBJ. And the most recent figures available pegged spending at nearly \$15 billion for appointments with practitioners such as chiropractors, acupuncturists, and massage therapists.

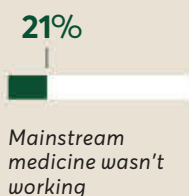
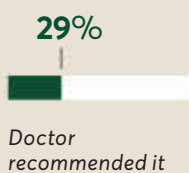
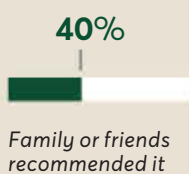
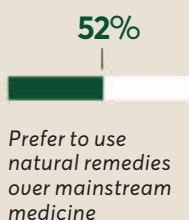
It's not surprising: Conventional treatments, such as prescription drugs and surgeries, can't always solve a wide array of common health problems. That's frustrating not just to patients but also to physicians. In fact, according to CR's recent survey, 29 percent of Americans who used alternative medicine or treatments in the past year did so because their doctors recommended it.

Often these approaches are used not instead of conventional regimens but with them, giving rise to the term "complementary medicine," or "integrative medicine."

HAVE YOU USED ALTERNATIVE MEDICINE IN THE PAST YEAR?



WHY DID YOU USE ALTERNATIVE MEDICINE OR TREATMENTS?



Source: Consumer Reports nationally representative survey of 1,003 U.S. adults.

Some medical schools now teach integrative medicine, and Veterans Affairs doctors have also adopted it, prescribing acupuncture, yoga, or tai chi, for example, to treat pain.

But even physicians who embrace alternative medicine urge caution. "In theory, I love the idea of using a natural, less medicalized approach to illness, especially since there is so much medication overuse in our country," says Michael Hochman, M.D., director of the Gehr Family Center for Health Systems Science at the Keck School of Medicine at the University of Southern California. "But when it comes to those therapies where the evidence isn't so rigorous, it can be damaging to your pocketbook and your health if you forgo more evidence-based treatment."

Case in point: Cancer patients who opted for complementary therapies and refused treatments such as chemotherapy were twice as likely to die as those who used conventional methods, according to a July 2018 study in the journal JAMA Oncology.

Even when research suggests that alternative treatments work, it's not always clear why—and could stem from the placebo effect. That's when your expectation that a treatment will help actually triggers a healing reaction. And it's powerful enough to get results. One trial of osteoarthritis patients, for example, compared a group taking supplements with one taking placebo pills. Most people in both groups reported significant reductions in pain.

Adding confusion, many staples of alternative medicine aren't subject to the same rules that govern doctors' offices, and prescription and over-the-counter drugs. That means manufacturers don't have to prove that their treatments contain what their labels claim, or that they are effective or safe.

Still, consumers are right to be curious about alternative medicine. Practices such as yoga, meditation, and tai chi have stood up to the standards of modern medical research. Other alternative treatments can help people feel in control of their health and reduce their reliance on medication.

How can you tell which treatments are worth trying and which you should avoid? Here's our A-to-Z look at alternative treatments, with tips to help you figure out which are safe and effective.*



PHOTO, PREVIOUS SPREAD: GETTY IMAGES. PHOTO, THIS SPREAD: PETER DRESSEL/BLEND IMAGES/PLAINPICTURE

A

Acupuncture

This ancient Chinese treatment is based on the belief that blocked qi, or energy, triggers pain and that inserting thin needles into specific spots on the body can relieve it. Some research shows that it works, especially for osteoarthritis, chronic headaches, and chronic back or neck pain. In a nationally representative 2017 Consumer Reports survey, nearly three-quarters of back pain sufferers who tried acupuncture said it helped. It may even ease depression, according to a 2018 review from the Cochrane Collaboration, an independent panel of experts. How it might do all that, though, is still a mystery. “One theory is that stimulating these points releases some of your body’s natural painkillers,

like endorphins,” says Benjamin Kligler, M.D., national director of the Integrative Health Coordinating Center at the Veterans Health Administration. Another possible factor: the placebo effect. A number of studies have found that “sham” acupuncture, where needles don’t pierce the skin, can provide some relief, too.

Apple Cider Vinegar

With proponents claiming that just a tablespoon or two a day can help regulate blood sugar, promote weight loss, lower cholesterol, and reduce the risk of cancer, apple cider vinegar—also touted as a cure for skin problems and body odor—begins to sound a bit like a magic potion. But while it can add tang to a salad dressing, “there’s little scientific evidence to support these health claims,” says William Chey, M.D., a gastroenterologist and professor

of medicine and nutrition at the University of Michigan in Ann Arbor. In fact, it may harm you: For some people with heartburn, drinking the vinegar is like “throwing gas on a fire,” Chey says. Regular use can also trigger nausea, damage tooth enamel, and irritate the esophagus.

B

Berries

Whether acai, blue, cran, goji, or straw, berries deserve their reputation as health food superstars. Many contain anthocyanins, “powerful phytochemicals that give berries their rich color,” says Jeffrey Blumberg, Ph.D., senior scientist at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University in Boston. These compounds act as anti-inflammatories, and may provide other health benefits. Certain berries, such as goji, contain other antioxidants.



C

CBD

Thirteen percent of Americans in a recent Consumer Reports survey said they had tried cannabidiol, or CBD, for its potential health benefits, and of those, nearly 90 percent said it helped. Sold as oils, tinctures, vaporization liquids, and pills, CBD comes from marijuana or its cousin, hemp, but doesn’t get users high. While CBD holds promise—the Food and Drug Administration recently approved the first drug that contains CBD, a treatment for two forms of epilepsy—many claims are still ahead of the science,

says Donald Abrams, M.D., a professor of medicine at the University of California, San Francisco. “We need to see firm evidence that using it has benefits and is safe.” And research shows that CBD products might not always contain what their labels claim. For more on CBD, see “The Next Frontier in Pain Relief?” on page 42.

Chelation

This therapy—where a medication known as EDTA is delivered into your bloodstream via an IV—is approved for one thing only: heavy metal poisoning. That can occur when children overload on adult-strength iron vitamins or people are exposed to large amounts of mercury, lead, or arsenic. The chelators bind to these heavy metals so that they’re flushed out in the urine. But a quick internet search shows that chelation therapy is offered as a treatment for everything from Alzheimer’s and autism to cancer and heart disease. Steer clear of these uses, which come with risks (kidney damage, mineral deficiencies, even neurodevelopmental problems and death) but no benefits, according to the American College of Medical Toxicology.

Chiropractic

Chiropractors—with a license and a doctor of chiropractic (D.C.) degree—are trained to do spinal adjustments, one of the most common alternative-medicine practices. A large 2017 review found that these manipulations reduced lower back pain by about 10 points on a 100-point scale, similar to conventional treatments. Research suggests that they might also help with headaches and neck pain. But consumers should steer clear of using chiropractic for nonmusculoskeletal problems, such as asthma, colic, and hypertension.

Cupping

This 2,000-year-old Chinese practice—which involves applying suction cups to the skin and then yanking them off, theoretically to increase blood flow and support healing—has taken off in recent years, especially since several Olympic athletes and celebrities were spotted with the therapy’s telltale suction marks on their skin. A 2015 review in the journal PLOS One found that cupping could be effective in short-term relief of chronic neck and low-back pain. But more research that tests how the practice might work is needed. And the National Institutes of Health warns that cupping can result in bruising, soreness, burns, and skin infections.

D Detoxes & Cleanses

Drinking only juices for several days, sweltering in temperatures higher than 100° F, and trying a colonic—a procedure in which a machine pumps water into your rectum through a sterile tube—are purported to help people lose weight and rid themselves of toxins. These practices aren’t just unpleasant; research shows they’re not needed and can be dangerous. “Your body naturally gets rid of toxins on its own, so there’s no need to waste time and money on these methods,” Hochman says. A research review found that colonics had no benefit and can cause side effects ranging from cramping

and nausea to kidney failure and death. And while fasting for a day is generally safe, a detox diet or cleanse that severely restricts calories can cause headaches, weakness, and dehydration.

E Ear Candling

This technique—promoted to remove earwax and treat sinus infections, sore throats, colds, and the flu—involves placing a hollow candle into your ear canal and then lighting the tip. “The theory is that the heat creates suction that withdraws the wax from your ear,” says Seth Schwartz, M.D., an ear, nose, and throat specialist at the Virginia Mason Medical

Center in Seattle. But a 2017 review by Schwartz concluded that candling is ineffective and dangerous, with reports that it can block the ear with wax, damage hearing, and—surprise, surprise—set hair on fire.

F Feverfew

Some research suggests that this herbal supplement may reduce the frequency of migraines in certain patients. In fact, the American Headache Society says a specific extract from the plant, called MIG-99, should be considered for migraine prevention. Another herb, butterbur, may also help—but only if chemicals called pyrrolizidine alkaloids (PAs), which can harm the liver, have been removed. So use only butterbur products with labels that say they are PA-free. And follow the precautions that apply to all supplements (see “Supplement Savvy,” left).

SUPPLEMENT SAVVY

PEOPLE OFTEN ASSUME supplements must be proved to be safe and effective before they can be sold. But in fact, they don’t undergo the same safety and efficacy testing as prescription and over-the-counter drugs.

Federal regulations only allow supplements to have general claims, such as “calcium builds strong bones,” but the FDA doesn’t vet those claims. Labels can’t claim that products diagnose, cure, or prevent any disease. A label can’t say ginkgo biloba, for example, will prevent dementia—even if that’s why people are buying it.

You also can’t be sure that supplements contain the listed ingredients or dosages, or that they aren’t contaminated. For example, last spring, nearly 200 people were sickened after consuming kratom supplements contaminated with salmonella.

If you choose to take a supplement, look for a product with a third-party seal, such as NSF International certified or USP Verified. These seals don’t mean that a supplement works; they indicate that an independent group has verified that the amounts listed on labels are accurate and that the products are not contaminated.

To see a list of supplements to avoid, go to CR.org/supplementstoavoid.

TOTAL U.S. SUPPLEMENT SALES

(2007 to 2017)



Source: Nutrition Business Journal.



G Garcinia Cambogia

This supplement is flying off the shelves—sales have grown 15 percent in the past year alone, according to the Nutrition Business Journal—mostly because of claims that it can help people lose weight and burn fat. Trouble is, research doesn’t support either claim, and its active ingredient has been linked to serious conditions such as liver failure and mania. It also has a history of worrisome contamination. Last year the FDA advised consumers not to purchase one

Chronic Conditions

Which natural treatments work for pain, stress, and insomnia?

CERTAIN HEALTH CONDITIONS have clear solutions. For high cholesterol, for example, you're told to eat better, exercise more, and perhaps take a statin. But for some common and persistent ills—chronic pain, stress, and insomnia in particular—it can be hard to pinpoint the exact causes and even harder to treat.

“Sometimes [for these] really chronic problems, medicine doesn't have a very good solution,” says Lisa Schwartz, M.D., co-director of the Center for Medicine and Media at The Dartmouth Institute for Health Policy & Clinical Practice.

That often leads people to look to alternative medicine. In some cases, the options are untested, or even dangerous (see “Kava” and “Kratom” in our A-to-Z guide). But science has shown that several treatments, such as yoga, really can help. Here, some of the most effective remedies.



CHRONIC PAIN

Meditation, tai chi, and yoga all seem to help back pain, joint pain caused by osteoarthritis, and fibromyalgia. Spinal manipulation, performed by a chiropractor or an osteopathic physician, can also help with back pain. Although experts are unsure how it works, acupuncture may be helpful, too. And cognitive behavioral therapy (CBT), a type of talk therapy that's well-studied and isn't technically considered alternative, can often help people cope with chronic pain.

STRESS

Try mindfulness, which involves staying focused on the moment, without judgment. In one 2017 study, a group of people with anxiety practiced mindfulness techniques—including certain forms of meditation, deep breathing, and yoga—for eight weeks, and another group attended a class on healthy lifestyle habits. The group that practiced mindfulness techniques had lower levels of stress-related hormones. Learn more about getting started with techniques from the National Center for Complementary and Integrative Health at nccih.nih.gov/health/stress.

SLEEP DISTURBANCES

Your best bet is healthy sleep habits, such as setting a regular bedtime and, at least an hour before bedtime, dimming the lights and turning off electronic devices. Some evidence suggests that melatonin, one of the most widely used natural products in the U.S., may help adults with specific kinds of sleep problems, such as those related to jet lag or shift work. But for other sleep problems, such as insomnia, melatonin's benefits have been shown to be minor at best: It might help you sleep just 8 additional minutes and could leave you groggy the next day. For more on improving your sleep, see "Sleep Better—Starting Tonight," page 58.

Natural Remedies

Garcinia cambogia product, Fruta Planta Life, because it contained sibutramine, a prescription weight-loss drug that was taken off the market in 2010 after it caused spikes in blood pressure and heart rate.

Glucosamine and Chondroitin

These two substances, which are often combined and pitched as cures for people with aching joints, are among the top-selling supplements in the country. But a 2015 study of 1,625 people with osteoarthritis of the knees found that the combo was no better than a placebo in easing knee pain or preventing cartilage loss.



Green Coffee

Unroasted, or “green,” coffee beans are rich in chlorogenic acid, a substance that preliminary research suggests may help burn glucose and fat, Blumberg says. But the studies behind these claims are too small and poorly designed to support the use of green coffee, according to the NIH. Supplements have been linked to side effects, including headaches and urinary tract infections, and the Federal Trade Commission has sued at least one company selling them for making deceptive claims.

H

Homeopathy

Taking a substance that’s known to cause harm and diluting it to the near-vanishing point is the basis of this centuries-old practice. But be forewarned

that numerous scientific studies—and a 2015 review of 176 studies—have shown that homeopathic treatments don’t work. And research suggests that certain homeopathic products contain unlisted ingredients or dangerously high amounts of other substances. Last year the FDA vowed to step up enforcement of homeopathic drugs they called “potentially harmful” and “unproven.”

I

Iodine

Some people with hypothyroidism (an underactive thyroid gland) need iodine supplements. And people who live near a nuclear power plant might consider keeping some on hand in case of emergency, because high doses of potassium iodide soon after radiation exposure can limit harm. But extra iodine can’t boost metabolism or speed weight loss. Most Americans already get plenty of the mineral from iodized salt and other foods. And getting too much—more than 1,100 micrograms per day, the NIH says—can cause some of the same problems as iodine deficiency.

J

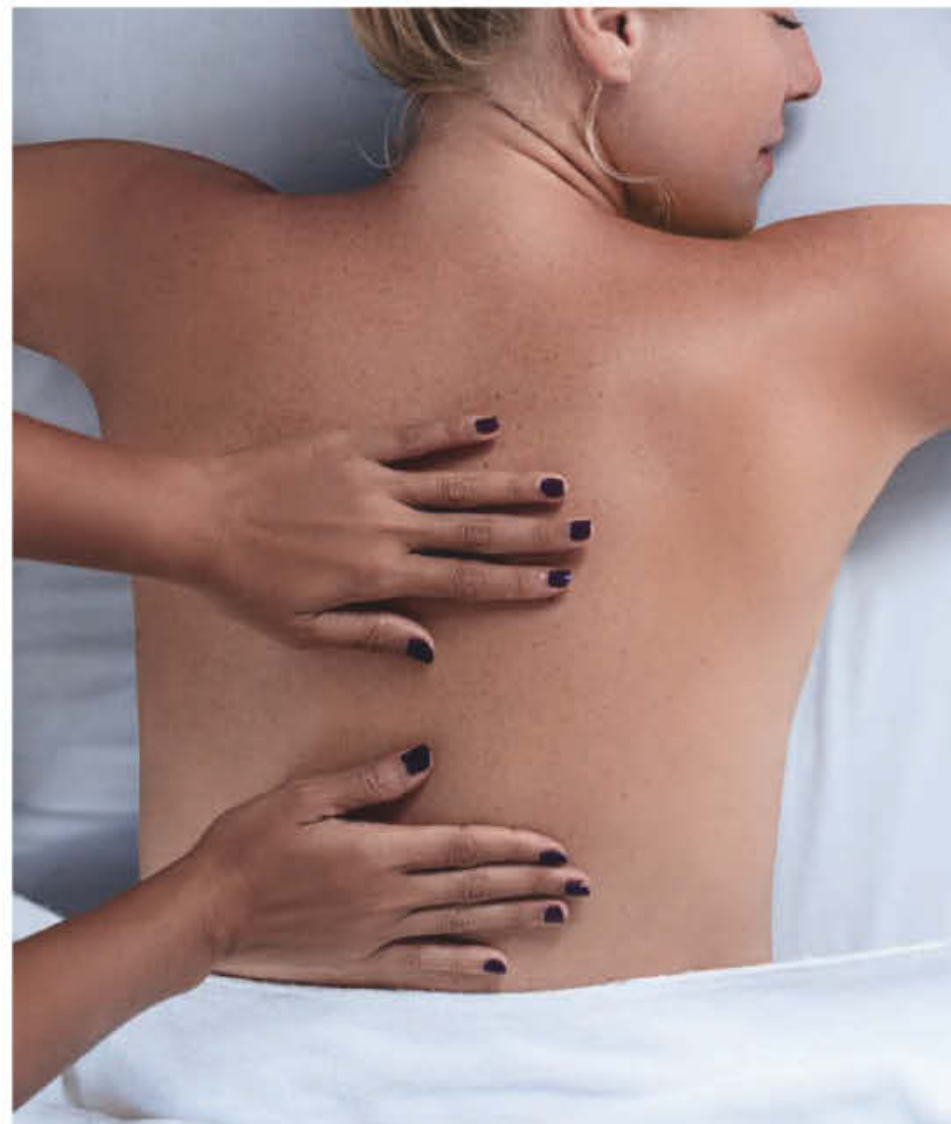
Jellyfish

You may have seen ads for a supplement called Prevagen, pitched as a memory aid derived from jellyfish. But the FTC and the New York state attorney general’s office filed a lawsuit in 2017 accusing Prevagen’s manufacturer of false advertising, and no independent research backs up the company’s claim.

K

Kava

The root and stem of this plant, a member of the pepper



Massage

A good rubdown can do more than just relax you. Growing research shows that it can help some people with back pain or other kinds of pain, and those recovering from injury.

DEEP-TISSUE MASSAGE, which emphasizes strong finger pressure to reach into the muscle, may be particularly good for back pain.

SWEDISH MASSAGE—the form most people are familiar with—uses long flowing strokes, circular motions, tapping, and kneading to promote relaxation. Sports massage, which can promote recovery and flexibility in athletes, combines deep-tissue and Swedish techniques.

MYOFASCIAL TRIGGER POINT THERAPY—which focuses on painful trigger points—may be helpful for people with injuries or chronic pain.

CRANIOSACRAL THERAPY, which involves light touch to the head intended to relieve pain elsewhere in the body, is more controversial. Most research has found that it has no benefit, and one 2016 review said that the technique appeared to be “scientifically unfounded.”

family, are used in drinks and supplements to promote relaxation and ease anxiety. But in rare cases, kava has been linked to liver damage, including cirrhosis and hepatitis, and several countries have banned its sale. It can also impair driving, and may exacerbate Parkinson's disease and depression.

Kratom

Promoted as a safe pain reliever, the FDA says it could be as addictive as opioids because it affects the same brain receptors. And there have been reports of kratom being laced with opioids or contaminated with salmonella. At least 44 deaths have been linked to kratom, and hundreds of users have suffered side effects, including seizures, liver damage, and withdrawal.

L

Light Therapy

Sitting in front of a special lamp during the darkest months of the year is a proven treatment for seasonal affective disorder. The sessions should last between 20 and 60 minutes and be done consistently to work best. And at least initially, it should be done under the guidance of an experienced professional. Light therapy may also help with depression and bipolar disorder.

M

Meditation

While there are many types of meditation, most have four things in common: a quiet, distraction-free location; a comfortable posture; a focus of attention (on breathing or a mantra, for example); and an open attitude. Research suggests that meditation may help lower blood pressure as well as ease anxiety, depression, insomnia, and even symptoms of irritable bowel syndrome and ulcerative colitis. Elizabeth Bradley, M.D., medical director

of the Cleveland Clinic's Center for Functional Medicine, has her patients try this simple meditation: Breathe in for a count of four, hold for seven, then breathe out for eight while placing a hand on the belly to feel it moving.

Melatonin

Melatonin, a hormone secreted by a gland in your brain, helps set your body's circadian rhythm: the 24-hour "clock" that controls your sleep cycle. People take melatonin supplements to help them sleep, and evidence indicates that it can help certain sleep problems, such as those stemming from jet lag or shift

work. But a 2017 study found that the supplements often don't contain what their labels claim; some had serotonin, a chemical that regulates mood, instead.

N

Naturopathy

Naturopathic doctors (N.D.s) believe the body has an inherent self-healing ability, and some focus on questionable practices such as homeopathy (see "H") and intravenous vitamin treatments. In 20 states plus the District of Columbia, N.D.s can often order certain medical tests and write some

prescriptions. While N.D.s have some formal medical education, it isn't as rigorous as that of medical doctors (M.D.s) and doctors of osteopathy (D.O.s). Appointments are rarely covered by insurance.



Neti Pots

Shaped like a tea kettle, these vessels are designed to treat allergies, colds, and sinusitis by rinsing debris and mucus from

4 TIPS FOR THE SMART AND SAFE USE OF ALTERNATIVE MEDICINE

DO YOUR RESEARCH. Try to find out what's known about the safety and efficacy of any treatment you're considering. Look for reputable sources, such as the National Center for Complementary and Integrative Health (nccih.nih.gov/health) and the Cochrane Collaboration (cochrane.org). Ask your primary care provider, too; more and more of them are embracing some form of alternative medicine, and may be good resources.

BE CHOOSY ABOUT PRACTITIONERS. If you're going to an alternative health practitioner, such as an acupuncturist, make sure he or she is credentialed, with a state license where appropriate. Check with your primary care doctor to see whether he or she can make a referral.

And be skeptical of someone who tries to sell you additional products or sign you up for a long-term treatment plan (beyond four to eight sessions), or recommends that you forgo conventional treatments.

CONSIDER THE COST. Ask about price up front, and talk to your insurance company if you're not sure whether it's covered; many alternative treatments are not. Also, talk to your provider about nonpharmaceutical options that are more likely to be covered by insurance, such as cognitive behavioral therapy (CBT) and physical therapy.

THINK HOLISTICALLY. Sometimes alternative treatments can help you reduce your reliance on medication, avoid surgical intervention, or relieve the side effects of conventional treatments. Just consider how the alternative treatment could affect your health overall, for better or worse.

The more serious the health problem, the more cautious you should be about turning to alternative medicine to treat it.

Medications you're already taking can also interact with certain dietary supplements, so talk with your healthcare provider or pharmacist before trying something new.

Natural Remedies

your nose. And several studies show they may help. But take some precautions, such as using distilled water, because there have been reports of people developing serious bacterial infections after using the pots with unsterilized tap water. You can also try an over-the-counter saline nasal spray. These wash out pollen and other allergens, and loosen up mucus to ease your breathing.

O

Omega-3

Omega-3 fatty acids—found in fatty fish, nuts, and seeds—are frequently cited as heart-healthy. A 2017 research review by the American Heart Association concluded that the pills might provide some benefit to people with a history of heart disease. But there wasn't enough evidence to show whether they improve cardiac health in people without existing heart problems.

P

Probiotics

These “good bacteria” are thought to promote a healthy environment in your belly. Consumers in the U.S. spent more than \$2 billion on probiotic supplements in 2017, according to the Nutrition Business Journal. Some research shows that specific strains of probiotics can help protect against antibiotic-related diarrhea and even *Clostridium difficile*, a dangerous infection often picked up at hospitals. But this year, a study concluded that little research has assessed the safety of probiotic supplements. For general health, you're probably better off getting probiotics from your diet, in yogurt or fermented foods such as sauerkraut and tempeh, Blumberg says. These may offer benefits beyond what you can find in a supplement.

Q

Qi Gong

Like tai chi (see “T”), qi gong is an ancient mind-body practice that uses a variety of postures, movements, breathing techniques, and sound to improve mental focus and promote health. A 2015 Cochrane review hinted that qi gong might help lower blood pressure and cholesterol levels, though more study is needed. Other research suggests it can help people with fibromyalgia and other pain conditions.

R

Red Yeast Rice

A daily dose of this supplement can sometimes lower cholesterol as much as the prescription drug lovastatin (Mevacor and generic), according to a research review. That's

no surprise: It's chemically similar to that drug. Of course, that means it carries many of the same risks, too, including kidney, muscle, and liver problems. And because it's sold as a supplement, not a prescription drug, insurance probably won't cover the cost. More important, “consumers have no idea how much of the drug they are getting, and too low of a dose won't do anything, while too high could cause harm,” says Pieter Cohen, M.D., an assistant professor of medicine at Harvard Medical School. His 2017 study found that amounts of the active ingredient in red yeast rice supplements varied substantially among products.

Reiki

Some folks swear by this technique, in which a practitioner places his or her hands lightly on or even slightly above your body. Supporters claim this somehow stimulates your body's own healing response, but there's little scientific research to back this up or prove that it works.

S

Saw Palmetto

Americans spent \$183 million last year on this herbal remedy, touted to treat symptoms of an enlarged prostate. But a Cochrane Collaboration review of 32 studies concluded that it was no better than a placebo at improving symptoms such as frequent and painful urination.

T

Tai Chi

This centuries-old martial art, which has been dubbed “moving meditation,” combines physical exercise with meditation. Research suggests that it cuts the risk of falls in older adults, helps with chronic pain, and may ease symptoms

VITAMIN WISDOM

NEARLY HALF OF Americans take multivitamins, but these pills, along with other vitamin and mineral supplements, may not be doing much for anyone's health. “Multivitamins have an image of being able to compensate for deficiencies in the diet,” says JoAnn Manson, M.D., a professor of medicine at Harvard Medical School and chief of preventive medicine at Brigham and Women's Hospital. “But [they'll] never be a substitute for a healthful and balanced diet.”

For one, Manson says, your body can't absorb the nutrients from pills as easily as it can from food. And vitamins can cause side effects. Too much

supplemental calcium, for instance, might increase the risk of kidney stones.

That doesn't mean everyone should avoid supplements. Pregnant women need folate and prenatal vitamins, and breastfed infants need vitamin D and iron. Older adults and people with certain medical conditions may need vitamins, too. If you're unsure whether you need one, talk with your doctor. And try not to exceed 100 percent of your recommended daily value of any nutrient.

Yoga

More than 36 million Americans practice yoga, a steep increase from just 10 years ago. While many do it to promote flexibility or just relax, yoga can have more specific health benefits, too, such as relieving low back pain, reducing blood pressure, and easing depression. Which form should you try?

BETTER FOR BEGINNERS OR PEOPLE WITH PHYSICAL LIMITATIONS



IYENGAR:
Slow and gentle; uses props to make poses more accessible.

BETTER FOR MORE EXPERIENCED OR MORE FIT PEOPLE



ASHTANGA:
Athletic, often involving moving quickly between poses.

PROCEED WITH CAUTION



BIKRAM/HOT:
Presents risk of overheating.

of dementia, depression, osteoarthritis, and Parkinson's disease. Tai chi is very safe, "and it's something that you can learn and do on your own, whenever you want," says Kligler at the Veterans Health Administration. While you can do tai chi with an instructional DVD or online video, it's best to start with a class because if you don't position your body properly, you could end up with minor injuries.

Tea

It's the most widely consumed drink in the world after water, and research has shown that regular tea drinkers have a lower risk of diseases such as type 2 diabetes and heart disease. Green, white, and black teas are all "rich in flavonoids, which are the antioxidants that give tea its health benefits," Blumberg says.

Turmeric

This golden spice—a staple of Indian food—contains curcumin, touted for its anti-cancer and anti-inflammatory properties. But much of that research is in mice. When humans eat turmeric, little of the curcumin is even absorbed. Still, go ahead and add turmeric to your food if you like. And check with your doctor if you take turmeric supplements; they could interact with certain medications, such as blood thinners.

V

Vetiver Oil

Extracted from a plant, this essential oil is often used in aromatherapy. A review published earlier this year found that vetiver oil—along

with lemongrass, cilantro, cinnamon, and patchouli oils—has antifungal properties. Other research suggests that tea tree oil is an effective antibacterial. And the National Cancer Institute says that aromatherapy with various essential oils may lessen anxiety and reduce nausea. But these oils can irritate the skin, cause allergic reactions, and increase sun sensitivity. And they should never be consumed. In one study, repeated exposure to tea tree and lavender oil mimicked the effects of estrogen, causing breast growth in boys, though that effect was reversed when treatment stopped.

W

Wild Yam

If you're in the midst of menopausal hot flashes,

you may be tempted to try wild yam, a plant promoted as a natural alternative to estrogen replacement therapy. "Although it contains a chemical that can be converted into estrogen in a laboratory setting, your body doesn't have the enzyme you need to do that," says JoAnn Pinkerton, M.D., division director of the Midlife Health center at the University of Virginia in Charlottesville.

X

Xylitol

This sweetener, commonly found in sugarless gum, is sometimes touted as a way to help prevent ear infections. And a 2016 Cochrane review concluded that healthy children who got xylitol—through gum, lozenges, or a syrup—cut their risk of ear infection from 30 to 22 percent. But two caveats: There's not enough evidence to know whether it helps in children most prone to the infections, and high intakes could trigger diarrhea and upset stomach.

Z

Zinc

Lozenges of this mineral seem to shorten the duration and severity of colds—if you start taking it within 24 hours of your first symptom. Stick with about 80 to 90 mg per day; too much can cause diarrhea, nausea, stomach cramps, and vomiting. A safer bet: Consume zinc-rich foods, including cashews, chickpeas, crab, and yogurt.



THE NEXT FRONTIER IN PAIN RELIEF?

CBD—an extract of cannabis—is experiencing a wave of rising consumer use, but its claimed health benefits, and its legality, are still under debate.



Cannabidiol—or CBD, as it's commonly known—is getting more attention about its possible health benefits. The naturally occurring compound is extracted from the marijuana plant or its close relative hemp. And a growing body of preliminary research suggests it has properties that could indeed improve health.

CBD for Pain Relief?

For example, it appears to act as an anti-inflammatory, which means it could relieve pain from arthritis, as well as garden-variety muscle soreness. It also has many effects on brain chemistry, which could ease anxiety, depression, and post-traumatic stress disorder.

The CBD market is exploding, expected to multiply sevenfold by 2021, to \$2.15 billion from roughly \$292 million in 2016, according to the Brightfield Group, a market research firm that specializes in cannabis.

Thousands of CBD products—oils, tinctures, pills, and liquids used in vaping devices (similar to e-cigarettes)—are now widely available in retail stores and online. The World Anti-Doping Agency removed CBD from its list of banned substances in January, and some athletes now turn to it for pain relief instead of ibuprofen and related drugs.

What's more, in early July the Food and Drug Administration for the first time approved a prescription drug

(Epidiolex) with CBD as its active ingredient, which cut seizures by about 40 percent in people with two rare but devastating forms of epilepsy.

Whether it's sourced from marijuana or hemp, CBD does not get users high. That's because a different compound in marijuana—called tetrahydrocannabinol, or THC—is what causes a high. Regardless, CBD remains at the center of several controversies and plenty of consumer confusion surrounding both its effectiveness and legality. Here, we answer consumers' most common questions.

Does CBD Really Have Health Benefits?

The recent FDA approval of Epidiolex, the CBD-based drug for epilepsy, is the furthest anyone has come in establishing efficacy of CBD for any condition.

But researchers from major educational institutions, including Johns Hopkins and the University

of California at San Diego, are studying an array of potential uses.

One important area: opioid addiction. Some animal studies and early research in humans suggest that CBD may help treat that problem and other forms of substance abuse. Other reports show that states with medical marijuana laws have seen drops in the rates of opioid deaths and use, possibly as people turn to cannabis products (which include CBD) as alternatives.

Scientists blame the current paucity of definitive evidence not necessarily on the ineffectiveness of cannabis or CBD, but on government rules that for years prevented scientists from using federal money to research the compound's possible health benefits.

That's why the approval of Epidiolex may well open up a path to more research on CBD. In fact, some restrictions have recently been lifted. Last year, the National Institutes of Health awarded \$140 million toward cannabis research, with \$15 million going to CBD studies.

4 TIPS FOR SAFER CBD USE

Follow this expert advice to minimize your risk.

The quality of CBD products can vary, and it's typically up to companies to determine whether to test. Look for a brand that shares its test results, in a form called a "Certificate of Analysis," or COA, which should show how much CBD and THC it contains, and if it's free of contaminants. And consider this advice:

Don't expect miracles. For most health problems, CBD's

benefits are more conjecture than proof. "I've heard from patients that CBD can be effective for all kinds of things," says Donald Abrams, M.D., an oncologist at Zuckerberg San Francisco General Hospital who has been researching cannabis for more than 20 years. But beyond using CBD to treat epilepsy, "the data in the medical literature in regards to what CBD does is limited to a handful of randomized controlled trials."

Consult with your doctor.

Inform your doctor of all the drugs and supplements you take, including CBD, in order to manage your overall care, help you choose the best treatment options for your condition, and guard against potential drug interactions and other risks.

Be extra cautious if you're pregnant or nursing. Research published in the August 2018 issue of Pediatrics found that cannabinoids can be passed

from a pregnant woman to her fetus. Experts are particularly cautious when it comes to marijuana use among pregnant and nursing women.

Look for a dispensary.

Because there are so many different types of CBD products and no federal regulatory standards, healthcare providers may not know which forms or dosages work best for various conditions. Many doctors will direct patients to staff members on the front lines at a state-licensed dispensary in states where medical marijuana is legal, Abrams says. Though training requirements vary, dispensary employees may have more expertise about mode of delivery and dosage.

Until evidence from this new research emerges, however, conclusive findings are hard to come by. Ryan Vandrey, Ph.D., a Johns Hopkins researcher investigating the potential health benefits of CBD, says: “Other than epilepsy, at this point [the benefits are] mostly postulation, not proof.”

Donald Abrams, M.D., a cancer specialist and practitioner of integrative medicine at Zuckerberg San Francisco General Hospital, is a co-author of a 2017 report on the medical benefits of cannabis from the National Academies of Science, Engineering, and Medicine. When he and 15 other experts examined more than 10,000 studies—based mainly on cannabis in general, not just CBD—they found only three conditions for which the evidence in humans, not lab animals or other forms of preliminary research, was strong: pain, nausea related to chemotherapy, and spasticity in patients with multiple sclerosis.

For CBD alone, the evidence is even more sparse. Abrams says the NAS report, which came out before Epidiolex was approved, could identify only three published randomized trials—the gold standard for medical research—that looked at just CBD. And for none of those conditions—anxiety, smoking cessation, and Parkinson’s disease—was the evidence strong enough for the NAS report to conclude that CBD clearly helps.

With so little research into CBD, it’s hard to know for certain how safe it is. That may be particularly concerning for pregnant or breastfeeding women.

Still, the research to date has identified few risks. It appears to be safer than THC, with even the FDA saying CBD poses little risk of abuse. Side effects, however, include tiredness, diarrhea, and changes in appetite and weight.

It’s also unclear what doses or forms of CBD might work best for which conditions, notes Joseph Maroon, M.D., a clinical professor of neurological

surgery at the University of Pittsburgh Medical Center who authored a recent review of the neurological benefits of CBD alone and with THC. He writes that with more than 1,000 CBD and cannabis products on the market, in multiple forms, “dosing recommendations are nearly impossible.”

And most medical studies have used doses of CBD much higher than what’s included in products consumers typically purchase, according to ConsumerLab, a company that tests health and beauty products. In addition, some research suggests CBD may interact with several kinds of prescription meds.

If you want to try CBD, talk with your

doctor first, especially if you take any prescription drugs or are pregnant or breastfeeding. Until more evidence comes in, be wary of turning to CBD in lieu of more proven therapies, especially for serious health problems, such as cancer.

Though it’s unclear what dosage might work best for any health problem, it’s worth looking for products that say they contain CBD, not just “cannabinoids.” Products that say they contain that broader class of compounds may not have much if any CBD. Instead, they may contain a mix of more than 100 other compounds found in cannabis plants, about which even less is known. In addition, look for products that list the amount of CBD per serving, not just per bottle.

Are CBD Product Claims Proved?

The short answer is, mostly no—at least not yet. Consumers need to be “mindful that this is an unregulated industry,” Vandrey says.

Start with the fact that, according to the FDA, only drugs approved by the agency—which have undergone rigorous studies for safety and effectiveness—can make claims that they can treat or cure any disease, ranging from migraines to cancer. In other words, the manufacturer of Epidiolex can make medical claims, but makers of other CBD products on the market can’t.

And unlike prescription drugs, CBD products aren’t subject to consistent testing; instead, requirements vary from state to state. Those that have legalized the recreational and medical use of cannabis tend to have stricter standards and require testing of products before they can be sold. Such testing often includes checking for THC and CBD levels, as well as for mold, pesticides, and other contaminants. Some states with only medical cannabis

CBD IN MANY FORMS

Oil drops, for drinks, food, or straight into the mouth



Pills containing extract



Topical balms, rubbed onto skin



Infused into honey



CBD for Pain Relief?

laws also require some testing.

But even among those states, standards vary substantially, with some regulating cannabis products, including CBD-only ones, as if they are pharmaceutical products and others as if they are agricultural ones, says Jennifer Liebreich, at the Association of Public Health Laboratories, which works with state and federal agencies on strengthening laboratory systems and testing programs, including those for cannabis.

Can Consumers Legally Buy CBD?

If you live in one of the 47 states that has legalized CBD to one extent to another, you have no worries about buying it in your state. While the federal situation is still a little hazy, no one has been prosecuted for buying CBD online, according to Melvin Patterson, a spokesman for the Drug Enforcement Administration, and Paul Armentano, deputy director of NORML,

a marijuana advocacy group.

Moreover, provisions in the 2018 Farm Bill, recently signed into law by President Donald Trump, could soon clarify how CBD is regulated by the Food and Drug Administration. While the agency has approved CBD for use in one prescription drug, Epidiolex, it's now considering whether it will regulate other CBD products as prescription drugs (which can include claims about their ability to treat and cure health problems, and must undergo extensive study before they are approved) or dietary supplements (which can't make those claims, and aren't subject to rigorous review.)

As for doctors' role, physicians don't write prescriptions for CBD (other than Epidiolex) in part because of cannabis's confusing federal legal status.

Instead, doctors "recommend" the treatment, allowing a consumer to then purchase the product, often at a licensed dispensary.

In practice, however, many people

buy CBD products without ever consulting with a physician.

Should You Trust Online CBD Products?

There may be some additional reasons to be particularly cautious about products ordered online, says Amanda Reiman, Ph.D., a cannabis policy and public health expert based in California who also works for Flow Kana, a cannabis company. She notes that there may be less oversight of those products than there is of store-bought ones, making their purity and potency even less certain.

Research backs her up. A November 2017 study in JAMA, authored by Vandrey at Johns Hopkins, found that only 26 of 84 samples of CBD oils, tinctures, and vaporization liquids purchased online contained the amount of CBD claimed on their labels. Eighteen of them had THC levels possibly high enough to cause intoxication or impairment, especially in children. And a quarter had less CBD than advertised. Similarly, FDA testing has found several "CBD" products with no CBD at all.

Some companies that make CBD products say they also contract with third-party testers to do additional analysis beyond the state requirements. Kevin Liebrock, chief operating officer at Bluebird Botanicals in Louisville, Colo., says that's what his company does. And he says that it posts the results online, so customers can check to see that they are "getting the advertised amounts of cannabinoids, like CBD, and that the product is free of contaminants."

Other companies, such as Floyd's of Leadville, also post their results online. And Maggie Frank, national educator at CV Sciences, maker of PlusCBD Oil, says customers should ask to see the Certificates of Analysis, or COAs, which show the results of those tests. If a company won't do that, she says, "that's a red flag."



A GUIDE TO OTHER MEDICATIONS FOR PAIN RELIEF

TYPE OF PILL	BEST USE	SAFETY SMARTS	IMPORTANT TO KNOW
<p>Acetaminophen</p> <p>↓</p> <p><i>Tylenol and its generic are available over the counter (OTC).</i></p>	<p>For mild to moderate pain, such as headaches and osteoarthritis (OA). Though not as effective as OTC drugs such as the NSAID ibuprofen for most pain, acetaminophen is gentler on the stomach, and that makes it a good option for people with acid reflux or ulcers. It also won't increase heart attack and stroke risk, as NSAIDs may.</p>	<p>CR medical experts recommend no more than 3,250 mg, or 10 325-mg pills, in a day. Taking more or mixing them with alcohol can damage your liver.</p>	<p>In rare cases, acetaminophen can cause serious skin reactions that could include blisters or a rash. If that occurs, stop taking it and seek medical attention immediately.</p>
<p>Anti-Inflammatory Medications</p> <p>↓</p> <p><i>So-called NSAID pain relievers are available in OTC and prescription-strength versions of aspirin (Bayer, Bufferin, and generic), ibuprofen (Advil and generic), and naproxen (Aleve and generic). Prescription-only meds include celecoxib (Celebrex and generic) and diclofenac (Cambia, Voltaren, and generic).</i></p>	<p>For mild to moderate pain, such as headaches, migraines, and muscle aches, and to manage OA. If an OTC NSAID doesn't bring you relief, your doctor might prescribe a higher-dose version.</p>	<p>Whether you're using an OTC or a prescription NSAID, take the lowest dose for the shortest period of time—and not for longer than 10 days without talking to your doctor. If you find yourself using OTC NSAIDs three or more times per week, ask your doctor about other pain-relief options. NSAIDs can hike the risk of stomach and intestinal bleeding and ulcers, particularly when used regularly in high doses. Don't combine NSAIDs with each other; together they can boost the risk of ulcers and gastrointestinal (GI) bleeding. Note that although most NSAIDs increase heart attack and stroke risk a bit, aspirin has been shown to lower it. So if you have heart disease or risk factors for it, talk to your doctor.</p>	<p>Alert your doctor if you have burning stomach pain or bloody, black, or tarry stools—signs of GI bleeding. If you have GI bleeding or ulcers (or you're at risk for the condition), ask your doctor about low-dose NSAIDs or acetaminophen.</p>
<p>Opioids</p> <p>↓</p> <p><i>These prescription drugs include fentanyl (Actiq, Abstral, Duragesic, Fentora, Onsolis, and generic), hydrocodone (Vicodin and generic), and oxycodone (OxyContin, Percocet, and generic).</i></p>	<p>For severe acute pain after surgery or from injuries, such as those sustained after a bad fall or car accident.</p>	<p>Start with the lowest dose possible and use for only a few days. Even short-term use can cause side effects, such as abdominal cramps, constipation, headaches, nausea, sleepiness, vomiting, and a fuzzy-headed feeling. If your pain persists after a few days, talk with your doctor about nonopioid alternatives, including nondrug approaches. Taking these drugs for longer than about three days can hike addiction and overdose risks, and their effectiveness can diminish over time. Opioids can also impair your immune system's functioning and heighten pain sensitivity.</p>	<p>For dental problems, such as post-extraction pain, research shows that OTC pain relievers work just as well as—or better than—opioids for most people, with far fewer side effects.</p>
<p>Muscle Relaxers</p> <p>↓</p> <p><i>These prescription drugs include cyclobenzaprine (Amrix, Fexmid, and generic), metaxalone (Skelaxin and generic), and carisoprodol (Soma and generic).</i></p>	<p>For acute, severe neck or back spasms; muscle spasticity associated with cerebral palsy, multiple sclerosis, or a stroke; or if you have liver disease and can't tolerate OTC painkillers.</p>	<p>Muscle relaxers can cause sedation and be addictive, and most studies show that they are only marginally effective. Carisoprodol, for instance, poses a high risk for abuse and addiction. So most people are better off skipping them. For the few exceptions where muscle relaxers are a preferred option, take them for no longer than three weeks—less, if possible. Using them every day or long term for persistent types of pain, such as lower-back pain and joint pain, isn't recommended. Studies have failed to show that muscle relaxers work well for chronic pain.</p>	<p>If you're 65 or older, steer clear of these because they're associated with an increased risk of falling.</p>



Skin Cancer Screening

The light and magnification of a dermatoscope help doctors inspect moles that look suspicious.

MEDICAL TESTS YOU DO (AND DON'T) NEED

MRIs. EKGs. CT scans. Some health screenings may save your life, but others can be a waste of time and money—and pose risks of their own. How to know which tests to get and which ones you can safely skip.



Just before her father died of colon cancer, Lynne Milliron, then age 40, made him a solemn promise: She would get herself screened for the disease. Two months later, Milliron had that colonoscopy—and is profoundly grateful she did. “The doctor removed a large, precancerous polyp,” she says. “That test probably saved my life.”

MILLIRON, OF LANCASTER, Pa., benefited from an idea that took hold as early as the mid-1940s. In the town of Oxford, Mass., U.S. Public Health Service workers decided to look for signs of diabetes in people. To do that, they tested the urine and blood glucose of almost three-quarters of the town’s 4,983 residents. One goal was to show that early detection of diabetes through mass screening could prevent such life-altering complications as heart disease and nerve damage. Within a few years, diabetes screening was being done across the U.S., and similar tests for other diseases quickly followed.

Today, as we’ve learned more about how to detect disease early, there are scores of blood tests, ultrasounds, and CT scans to screen for conditions like cancer and low bone density. And an increasing number are offered direct-to-consumer (DTC), leaving you to pick—and pay for—screenings.

The surge of interest in testing is propelled by “a trend toward people being proactive about taking better care of themselves,” says Alex Krist, M.D., a professor of family medicine at Virginia Commonwealth University and vice chairperson of the U.S. Preventive Services Task Force (USPSTF), an independent expert panel that makes recommendations to the government and medical organizations about preventive care. Generally, he notes, that’s a good thing. “Screening tests that have been shown to help people live longer or better are an enormous boon to public health.”

As with Milliron’s colonoscopy, a screening test could spare you the physical, emotional, and financial pain of dealing with a serious illness—and maybe even save your life. As just one example, screenings done at the right age and frequency can cut the risk of colorectal cancer death by as much as half, according to the American Cancer Society (ACS). That blood pressure check you get during a routine physical? If it reveals hypertension and you get it treated, you might reduce your heart attack and stroke risk by more than 20 percent.

The trouble is, too few people are getting the right tests. Overall, Americans get only half the preventive care—including screenings—that they should, the Centers for Disease Control and Prevention (CDC) reports. Many other people are screened too frequently, at the wrong age, or with tests that aren’t very accurate. “We have a problem in this country where we both underscreen and overscreen,” says Susie Dade, M.P.A., deputy director of the nonprofit Washington Health Alliance (WHA).

For example, evidence-based guidelines from the USPSTF call for a one-time osteoporosis screening for most women ages 65 and older, and no screening for younger women at low risk for the bone-thinning disease. A 2015 study, however, found that almost half of low-risk women in their 50s had the screening, while 4 of 10 women between ages 65 and 74 and 6 in 10 women 75 and older had not.

Medical screenings aren’t an exact science, and therein lies the rub. All screenings, though some more than others, may still miss problems. The ACS notes, for example, that

mammograms fail to find 1 in 5 breast cancers.

Screenings can also pick up harmless abnormalities or produce false positive results, which incorrectly indicate the presence of a disease. That can lead to unnecessary and invasive tests and surgery, which have their own risks. “The challenge is making sure that people get the right care,” Krist says. “There are a lot of tests that seem like they would help you but aren’t backed by any data and can actually open up a whole set of harms.”

A Cautionary Tale

Ron Braithwaite of Portland, Ore., knows that all too well. Last spring, at age 66, he had a slightly elevated PSA blood test result. A higher than normal PSA can indicate prostate cancer, but most often it signifies a noncancerous condition such as a prostate infection or an enlarged prostate, which he had lived with for a while.

On his urologist’s advice, Braithwaite had an outpatient biopsy; a sample of prostate tissue was removed. He knew there were risks. In one study, 5.6 percent of men who had a similar biopsy experienced a complication, such as infection, bleeding, or urinary problems.

Braithwaite’s results were negative for cancer, as they are for 60 percent of men who have such a biopsy, according to a 2018 analysis by the USPSTF. Soon after, Braithwaite says, he developed a high fever. He was hospitalized for six days for a severe *E. coli* bloodstream infection, during which the life-threatening illness damaged his kidneys and heart.

Braithwaite says his kidneys are functioning again, but he faces a long recovery. His first PSA test was likely his last; the USPSTF doesn’t recommend it for men ages 70 and older because the risks of follow-up tests, such as infection, outweigh the potential benefits. “It’s a safe bet I won’t get tested again,” he says.

A Surfeit of Screenings—and Costs

Screening has become a big business—worth tens of billions of dollars—with most of the spending in the mainstream healthcare system. For example, in 2010 consumers and health insurance companies spent an estimated \$7.8 billion on mammograms alone, according to a 2014 analysis published in the *Annals of Internal Medicine*.

Little information is available on how many dollars are spent nationwide for screening that’s not beneficial. But in a recent study of health insurance claims from 2.4 million people in Washington state, the Washington Health Alliance found that from July 2015 to June 2016, about 26 percent had at least one test or treatment identified by experts as unnecessary. That cost consumers and their insurers an estimated \$282 million for the year. Most of the overuse was due to 11 services, eight of them screening tests. About \$40 million alone went for annual electrocardiograms (EKGs) and other heart screenings for people at low risk

for cardiovascular disease and without symptoms.

But when screenings are done in accordance with recommendations from major medical organizations, they can reduce harm and healthcare costs, says Dade, by decreasing the need for expensive treatment for advanced disease. Early detection and treatment of cancer, heart disease, and diabetes—which account for 7 of 10 deaths and 75 percent of healthcare spending in the U.S.—could help more people survive and pare costs, according to the CDC.

Outside the mainstream healthcare system, however, the value and cost of screenings gets murkier. And consumers are increasingly opting to circumvent their doctors for DTC screenings from for-profit companies. Consumers desire “a sense of autonomy; they want to take charge of their own health,” says Ana María López, M.D., M.P.H., M.A.C.P., president of the American College of Physicians (ACP). “But more importantly, it’s become hard to access healthcare in many places. People may not have a regular physician they can talk to about their concerns.”

Right now, direct-to-consumer screenings represent a small but rapidly expanding part of the market. Consumers in the U.S. spent \$15 million on DTC lab and genetic tests in 2010, a figure projected to climb to \$350 million by 2020, according to the market research firm Kalorama. And these are almost entirely out-of-pocket dollars: DTC tests usually aren’t covered by insurance. Here, a sampling:

- **Mobile screenings.** Using portable equipment, companies such as AngioScreen, Life Line Screening, and Matrix Medical Network offer screenings like EKGs or carotid artery scans at community centers, churches, hospitals, and workplaces. Life Line, the dominant player, markets bundles of tests through ads, flyers, and email, and says it screens almost 1 million people per year at 16,000 events.

- **Online and walk-in labs.** Companies such as Walk-In Lab, Private MD Labs, and Direct Labs perform blood, urine, and other lab tests of your choice without your doctor’s input. (In some states, a doctor’s authorization is required.) Walk-In Lab invites you to “take charge of your health and your wallet” by ordering anything from a \$28 blood-type test to an \$800 “Anti-Aging panel” online.

- **High-end screening clinics.** Companies such as the Princeton Longevity Center—which bills itself as “the Future of Preventive Medicine”—market comprehensive screening options. The executive health exam from Elitra Health in New York City costs \$4,900 and includes a CT coronary scan and cardiac stress test. Additional services: carotid and abdominal ultrasounds and full-body CT scans.

- **At-home or in-store health tests.** For these genetic tests, such as the \$199 ancestry and health screening from 23andMe, you submit a vial of saliva and receive a report outlining your risks of illnesses like late-onset Alzheimer’s and certain cancers.

Simpler tests, such as cholesterol and blood sugar checks at drugstore clinics and health fairs, may make it easier to

Medical Tests

track key health markers, but other DTC offerings may lead to overscreening. For example, the American Academy of Family Physicians (AAFP) advises against the carotid artery scans on many mobile screening menus. For healthy people, they can yield misleading results that can lead to riskier follow-up tests. The American College of Preventive Medicine cautions against full-body CT scans because they're costly, expose people to a lot of radiation, and often result in false positives.

"It's often cheaper to buy packages of many tests, which incentivizes people to get more tests than they need," says Erik Wallace, M.D., associate dean of the Colorado Springs branch of the University of Colorado School of Medicine.

Those who represent DTC testing companies say their services are valuable. Ari Cukier, the chief operating officer of Elitra Health, says the firm offers efficiency—multiple screenings in one day—and the chance for consumers to have more tests than they would through their own doctors. "People are not getting the comprehensive testing they want," he says.

He says Elitra's staff discusses overscreening and false positives with clients. "They are capable of weighing risks and possible benefits for them," he notes. "We have had cases of false positives, absolutely. And cases of real positives. That winds up for us proving the benefit of a test."

Life Line Screening did not respond to our requests for comment.

How to Test Wisely

When recommending screenings, your doctor should generally rely on scientific evidence and guidelines from the government and expert organizations. But studies have found that many doctors aren't up-to-date on guidelines, says López of the ACP. For instance, a recent review of 25 studies in the journal *Preventive Medicine* found that up to 45 percent of cervical cancer screenings failed to follow the USPSTF guidelines that were updated in 2012. And López notes that it can be simpler for a harried doctor to agree to a patient's request for a test than to discuss the pros and cons.

But guidelines aren't everything. "Maybe a patient is at higher risk and should be screened sooner," says López. That's why, after talking to her doctor about her family history, Lynne Milliron had colon cancer screening a younger age than is typically recommended. In addition to her father, an aunt had died of the disease at age 52.

Choose a doctor who will discuss all of the factors with you: guidelines, your medical and family history, the pros and cons of various screenings, and where the results might lead. You'll be able to make smart decisions if you go into those talks informed. Our guide to 18 common screenings, at right, is a good place to start.

What to Know About These 18 Screenings

WE COMBED THROUGH the research and talked with medical experts from leading academic centers, government agencies, and national organizations such as the U.S. Preventive Services Task Force (USPSTF) to assess the evidence on the benefits and risks of these tests. (We skipped a few, such as blood pressure, but it's wise to have this measured every time you see a healthcare provider or more often if you're at higher risk for hypertension.)

Check with your health insurer to make sure that the screenings your doctor advises are covered; many are, notably those recommended by the USPSTF. But also be aware that you might be charged extra fees at some testing facilities.

And note that if the screening finds something suspicious, any subsequent procedure or diagnostic test may result in extra costs for you. So ask about that, too.



The List

Abdominal Aortic Aneurysm Screening

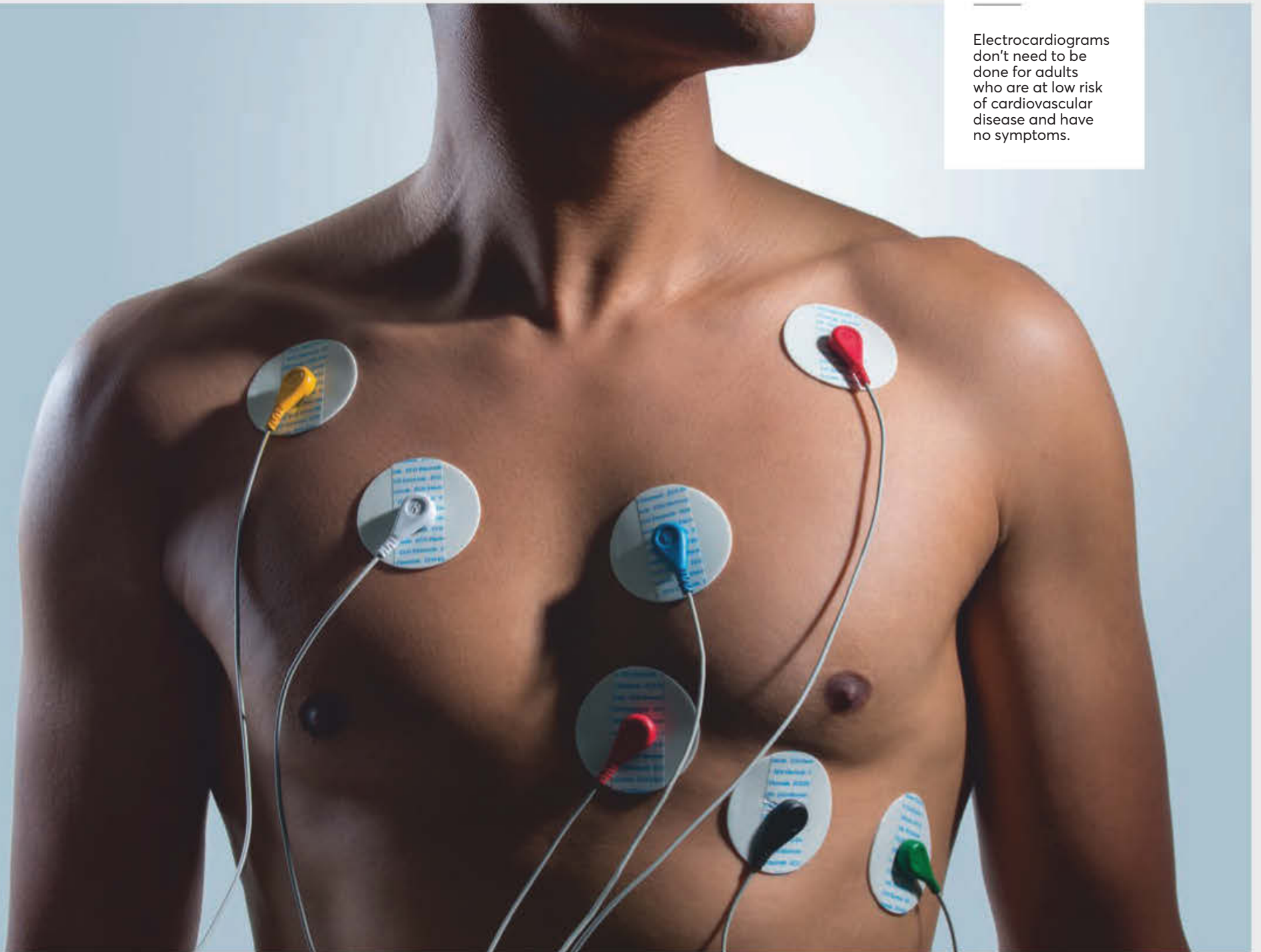
This one-time ultrasound looks for a bulge in the aorta, the body's largest artery.

WHY IT'S DONE: AAAs have the potential to burst, which can cause life-threatening bleeding.

RECOMMENDED FOR: Men 65 to 75 who are current or former smokers. Nonsmoking men and women ages 65 to 75 who have ever smoked might consider it if they have risk factors such as a close family member who had an AAA. The USPSTF recommends against screening nonsmoking women ages 65 to 75, whose risk is very low.

EKGs

Electrocardiograms don't need to be done for adults who are at low risk of cardiovascular disease and have no symptoms.



POSSIBLE OUTCOMES: If a small AAA is found (less than 2 inches in diameter), your doctor will monitor it closely. AAAs that are larger or growing quickly may need surgical repair.

Blood Chemistry Screening

A complete blood count (CBC) measures components of your blood, such as red and white blood cells; a metabolic panel checks levels of substances such as enzymes, electrolytes, proteins, and blood sugar.

WHY IT'S DONE: To make sure levels are normal. A CBC checks

for infection or conditions such as anemia. A metabolic panel checks the functioning of organs such as kidneys and liver.

RECOMMENDED FOR: The USPSTF recommends neither for nor against the routine use of these for healthy people. They may be used for people with blood-clotting conditions; for those with chronic illnesses, such as diabetes, kidney, or liver disease; to check for drug side effects; or before major surgery.

POSSIBLE OUTCOMES: If levels are off, your doctor may suggest changes in the management of a chronic illness or medication, or further testing to find the cause of unexplained symptoms.

Screening without a clear cause—often done during routine physicals—may pick up harmless fluctuations that lead to unneeded follow-up testing.

Bone Density Screening

This low-dose X-ray (called a DEXA scan) measures bone density in your hips and spine.

WHY IT'S DONE: To screen for osteopenia (low bone density) and osteoporosis (weak, brittle bones).

RECOMMENDED FOR: Most women at age 65, but earlier—

around menopause—for women with osteoporosis risk factors such as a family history or smoking, the USPSTF says. For men, consider screening at about 80, or sooner if at higher risk for fractures (due to factors such as smoking and long-term steroid use).

POSSIBLE OUTCOMES: For osteopenia, exercise and a diet rich in vitamin D and calcium is generally advised. Rescreen in three to five years. If the scan detects osteoporosis, you may need medication to prevent fractures, and rescreening in two years. If results are normal, repeat the test in 10 years.

**Full-Body
CT Scans**

These expose people to 500 to 1,000 times more radiation than a typical chest X-ray.



Carotid Artery Screening

This is an ultrasound of the artery on each side of your neck.

WHY IT'S DONE: Artery narrowing can lead to a higher stroke risk.

RECOMMENDED FOR: Anyone with symptoms of a stroke or ministroke. People without symptoms can skip this.

POSSIBLE OUTCOMES: If a scan suggests a blocked carotid artery, you could get follow-up tests such as an MRI to confirm. Treatment can entail medication or surgery to clear out the artery. Severely narrowed carotid arteries are found in only about 1 percent of adults and even then rarely lead to a stroke unless there are other risk factors, such as high blood pressure. For people without symptoms, screening can lead to false positives, and "studies show it actually winds up hurting more people than it helps," says Alex Krist, M.D., vice chairperson of the USPSTF.

Cholesterol Screening

This blood test measures total cholesterol levels, including LDL (bad) cholesterol, HDL (good) cholesterol, and triglycerides (artery-clogging fatty acids).

WHY IT'S DONE: Unhealthy levels—particularly total cholesterol above 240 mg/dL and LDL above 190 mg/dL—increase heart disease and stroke risks.

RECOMMENDED FOR: Adults ages 40 to 75 with one or more cardiovascular disease risk factors, such as smoking, high blood pressure, and diabetes, should be tested every five years, and more often if results are outside the healthy range, according to the USPSTF. "It's a good idea for people younger than 40 with heart-disease risk factors or a family history of very high cholesterol to get screened at least once," says Pamela

Douglas, M.D., a professor of research in cardiovascular disease at Duke University. Those older than 75 should talk with a doctor about whether screening makes sense based on their overall health.

POSSIBLE OUTCOMES: Test results, along with other heart risk factors, may help your doctor determine whether you may benefit from medication.

Colorectal Cancer Screening

Your healthcare provider may prescribe a take-home kit; you send a stool smear to be checked for hidden blood or DNA markers for cancer. But the gold standard is a colonoscopy, an outpatient procedure that typically involves a sedative. A gastroenterologist uses a tube with a small camera attached to examine the inside of your colon. Sigmoidoscopy, which examines only the lower third of the colon, and CT colonoscopy, which uses multiple X-rays to image the colon, are used less often.

WHY IT'S DONE: To detect colon polyps, which can become cancerous.

RECOMMENDED FOR: Generally starting at age 50, although the American Cancer Society (ACS), citing an increase in colorectal cancer in younger people, recently recommended a first screening at age 45. "If you are worried about colorectal cancer or you're at higher risk because you have family members diagnosed in their 40s and 50s, that may tip your decision in favor of screening before 50," says Otis Brawley, M.D., the former chief medical and scientific officer of the ACS. That group's recommendations include screening every 10 years with colonoscopy, every five years with sigmoidoscopy, or every one to three years with stool tests (depending on the type). People ages 76 to 85 should talk with their doctor about whether screening makes sense. At 80,



Hepatitis C Screening

A blood test that checks for this viral infection.

WHY IT'S DONE

Hepatitis C can linger in the body, symptomless, for years. Half of the people with it are unaware. Early detection and treatment prevent complications such as liver damage, cancer, and even death.

RECOMMENDED FOR

Anyone who was born between 1945 and 1965, had a blood transfusion before 1992, or used IV recreational drugs.

POSSIBLE OUTCOMES

If you test positive, another blood test (hepatitis C virus RNA) is needed to confirm the diagnosis. The virus clears up on its own in about 15 to 25 percent of cases. For those who need it, antiviral medication cures the disease more than 90 percent of the time.

colonoscopy risks such as colon tears and anesthesia complications rise.

POSSIBLE OUTCOMES: Suspicious findings on any of the less invasive screenings, including sigmoidoscopy, will usually mean you'll be advised to have a colonoscopy.

Electrocardiogram (EKG) and Exercise Stress Tests

With an EKG, electrodes attached to your chest measure your heart's electrical activity. In an exercise stress test, you have an EKG while on a treadmill or stationary bike, or after taking medication to make your heart beat harder and faster.

WHY IT'S DONE: To check for signs of heart disease or arrhythmias.

RECOMMENDED FOR: Those at high risk of heart disease or those with suspected heart disease or symptoms such as chest pain or shortness of breath, as a diagnostic tool. For others, major medical groups don't recommend the tests, which doctors sometimes do during routine physicals.

POSSIBLE OUTCOME: For people with heart disease or symptoms, these tests may help determine the risk of a cardiac event. In low-risk people with no symptoms, they can lead to inaccurate results and unnecessary procedures, such as angiography (a heart X-ray) or angioplasty (treatment to open an artery).

Full-Body CT Scans

These use multiple X-rays to image the body and internal organs.

WHY IT'S DONE: They're typically marketed as a way to detect early signs of cancer, heart disease, and other conditions.

RECOMMENDED FOR: The American Medical Association, among others, advises against these except in rare instances, and not for healthy people. Those rare cases may include

Medical Tests

people with cancer that may have spread or, in an emergency, those with a significant injury.

POSSIBLE OUTCOMES: If the scan finds growths or abnormalities, you might need other tests and treatment. These scans often find abnormalities (an average of three per person) that almost always turn out to be harmless, according to a 2013 analysis by Air Force researchers. One-third of people have unnecessary follow-ups that expose them to additional radiation.

Heart Scans

Coronary CT angiography (CCTA) and coronary artery calcium (CAC) scans use multiple X-rays to image your arteries.

WHY IT'S DONE: Both check for plaque in arteries; a CCTA scan also looks for structural abnormalities.

RECOMMENDED FOR: Those with symptoms such as shortness of breath and chest pain (the CCTA), and those at risk of heart disease (the CAC). The Society of Cardiovascular Computed Tomography advises against both for most other people.

POSSIBLE OUTCOMES: A CAC scan may help people at risk decide, with their doctor, how aggressively to treat their condition. For those with symptoms, either screening may be used with other tests to diagnose heart disease. For those at low risk, the tests expose them to radiation unnecessarily and could lead to unneeded procedures.

Mammograms and Other Breast Cancer Screenings

With a mammogram, your breast is compressed between two plates and an X-ray is taken. An increasing number of facilities use multiple X-rays to create a 3D image (called digital breast tomosynthesis).

Also available are magnetic resonance imaging (MRI), which uses strong magnets and radio waves to create a detailed image of the breast, and ultrasound imaging.

WHY IT'S DONE: To detect breast cancer early, when it may be more treatable.

RECOMMENDED FOR: Major medical organizations agree that women should be offered the option to have a screening mammogram at age 40. The ACS advises women to start at age 45, the USPSTF recommends age 50, and the American College of Obstetricians and Gynecologists says no later than 50. Recommendations on frequency vary from one to two years. Studies suggest that 3D tests may detect slightly more cancers than standard mammograms but haven't shown yet that they save more lives. Ultrasound imaging and an MRI can find cancers that a mammogram can miss but also pick up harmless abnormalities. These tests aren't thought to be beneficial on their own but are useful in conjunction with mammograms for women at high risk.

POSSIBLE OUTCOMES: These screenings may detect invasive breast cancers before they spread, sparing women more extensive treatment and possibly saving lives. But all can result in false positives, leading to unwarranted follow-up imaging and biopsies. The tests can also miss some cancers, so it's important to talk with your doctor about your health history and risk factors, and what type of screening is best for you. There's insufficient evidence about the effectiveness of screening after age 75.



Lung Cancer Scan

This low-dose CT scan images the lungs.

WHY IT'S DONE

It has been found to detect lung cancer early and prevent death among those at highest risk.

RECOMMENDED FOR

Adults 55 to 80 with a "30 pack-year" history (smoking a pack of cigarettes daily for 30 years or two packs for 15 years) who currently smoke or quit within the past 15 years should be screened yearly, says the U.S. Preventive Services Task Force. But fewer than 2 percent of them are tested, the American Society of Clinical Oncology notes.

POSSIBLE OUTCOMES

If anything suspicious is found, additional screening or a lung biopsy may be necessary. Note: This screening has a very high rate of false positives. According to a 2013 USPSTF analysis, for every lung cancer death the scan prevents, 302 people without the disease test positive.

Mouth and Neck Cancer Screening

Healthcare providers perform a physical and visual examination that may include the face, neck, nose, mouth, and throat as part of a routine exam.

WHY IT'S DONE: To check for cancers and precancers.

RECOMMENDED FOR: Hospitals and clinics routinely host free public screening, but major medical organizations such as the USPSTF, ACS, and the American Dental Association (ADA) don't recommend the screening for healthy people. "There's no clinical study showing that the exam saves lives," says Otis Brawley, M.D. The ADA does advise dentists to be alert for abnormalities during dental exams, especially in people who smoke or drink, because those habits hike cancer risks.

POSSIBLE OUTCOMES: If anything suspicious is found, a doctor will do a biopsy and remove the lesion if it's cancerous. Most growths found are harmless, so the exam could lead to a false positive and unnecessary biopsies and treatment.

Pap and HPV (Cervical Cancer) Tests

In a Pap test (or Pap smear) and an HPV test, your doctor removes cells from your cervix and examines them.

WHY IT'S DONE: The Pap looks for precancerous changes in cervical cells; the HPV looks for the types of human papillomavirus that cause cell changes. Both may indicate a cervical cancer risk.

RECOMMENDED FOR: Women ages 21 to 29 should have a Pap every three years, according to the USPSTF, ACS, and other organizations. Those 30 to 65 can follow that schedule or lengthen the time to five years if they get an HPV test at the same time. After several normal results, you can stop screening at age 65. Women who've had a hysterectomy that included

Blood Chemistry Screening

These blood tests cost Medicare more than \$1 billion in 2014.



removal of their cervix and have never had cervical cancer or high-grade precancerous lesions don't need screening.

POSSIBLE OUTCOMES: Your doctor may biopsy abnormal cells and, if necessary, destroy them with a laser or extreme cold, or remove them surgically. These tests may lead to unnecessary treatment for women with false positives, notably when screenings don't follow the recommendations. Testing for women younger than 21 is more likely to pick up harmless and temporary cell changes than potentially harmful ones.

Prostate Cancer (PSA) Test

This blood test checks for elevated levels of the prostate-specific antigen (PSA) protein produced in the prostate.

WHY IT'S DONE: High levels may be caused by prostate cancer.

RECOMMENDED FOR: Those who've already been diagnosed with prostate cancer, to help

doctors monitor them. Men in their 50s and 60s might consider the test after discussing the risks and benefits with their doctor, according to guidelines from the ACS, ACP, and USPSTF. Exactly when differs from organization to organization. The ACS also recommends that men at higher risk—such as African-Americans—consider earlier screening. Men 70 and older shouldn't be screened, according to the USPSTF, because the risks outweigh the potential benefits.

POSSIBLE OUTCOMES: Radiation or prostate-removal surgery for those who require treatment. The test, however, often flags noncancerous conditions such as an enlarged prostate or nonaggressive cancers. "Men should understand before they have the test that there's a chance they may be diagnosed with a cancer that should just be watched, rather than treated," says Brawley.

Skin Cancer Screening

A healthcare provider inspects your skin visually.

WHY IT'S DONE: For indications of skin cancer. Rates of melanoma, the most deadly skin cancer, have been rising for 30 years.

RECOMMENDED FOR: People at increased risk—men older than 50 and people who have more than 50 moles; those with large, unusual moles, fair skin, or reduced immunity; or those with a personal or strong family history of skin cancer—should be screened, according to the American Academy of Dermatology. If you're among them, talk with a dermatologist about the frequency. Everyone should familiarize themselves with their blemishes, moles, and freckles, says the ACS, and see a dermatologist if they note unusual spots, including those that are changing, itching, or bleeding.

POSSIBLE OUTCOMES: Your doctor may biopsy a suspicious spot. For diagnosed skin cancer, treatment depends on the type and extent.

Thyroid Cancer Screening

An ultrasound is used to image the butterfly-shaped gland in the front of your neck.

WHY IT'S DONE: To check for possible cancer of the thyroid.

RECOMMENDED FOR: Those who have risk factors such as a close family history of thyroid cancer, or radiation exposure (such as radiation therapy), or if you or your doctor notice a lump in your neck. Others can skip it, according to the USPSTF, ACS, and other organizations.

POSSIBLE OUTCOMES: A scan can help locate a lump that might be cancerous, or, for high-risk patients, find cancers before they become large enough to be felt. Most of the time, it detects harmless nodules or nonaggressive cancers. A vast majority of thyroid cancers grow very slowly. If the scan suggests cancer and follow-up tests confirm it, talk with your doctor

about whether treatment is really needed or whether watchful waiting is a good option.

Type 2 Diabetes (Blood Sugar) Screening

Two blood tests are commonly used. A fasting glucose test measures blood sugar levels after you've gone without calories for at least 8 hours, and an A1C test determines your average blood sugar levels over the past three months.

WHY IT'S DONE: High levels can signify diabetes. Slightly elevated levels indicate prediabetes, increasing your risk of the full-blown disease.

RECOMMENDED FOR: People younger than 45 who are overweight and have at least one other risk factor—such as high blood pressure or cholesterol, a family history of diabetes, or a sedentary lifestyle—should be screened, according to the American Diabetes Association (ADA) and other medical organizations.

If results are normal, retest every three years; for borderline high (prediabetes), every one to two years. One point of disagreement: For people 45 and older without risk factors, the ADA recommends screening but the USPSTF says it's unnecessary. David Nathan, M.D., a professor of medicine at the Harvard Medical School and director of the Diabetes Center at Massachusetts General Hospital, suggests following the ADA's recommendation. "Screening for diabetes is simple, safe, and inexpensive," he notes.

POSSIBLE OUTCOMES: If results suggest diabetes, you'll need to retest to confirm, because many factors, including medication and stress, can affect your blood sugar. If diabetes or prediabetes is diagnosed, you'll need to make dietary and exercise changes. For diabetes, you'll probably need medication, too.





SLEEP BETTER— STARTING TONIGHT!

Desperate for a good night's sleep? You have plenty of company. Use our mattress and sheet ratings, plus expert pillow advice, to get the sleep you crave.

More than a third of Americans are sleep-deprived. That's in spite of a dizzying and ever-growing array of products, including mattresses, pillows, sheets, and sleeping aids—all promising to deliver a night of restorative slumber.

W

ith all the hype, how can anyone possibly know which of the countless sleep pro-

moting products on the market work? We've interpreted the results from our exhaustive, scientific mattress testing, interviewed experts on the best ways to reach deep, regenerative sleep, and—for the first time in almost a decade—tested and rated cotton sheets.

We'll also tell you how to get more life out of the mattress you already have and how to know when it's time for a new one. So stop tossing and turn to some sound advice on sleeping soundly.

Adjustable Bed Frames

Is it time to try something new in the bedroom? When it comes to launching products and making fresh promises, the bedding industry never sleeps. In 2018 alone, at least three new mattress brands have been introduced (Allswell, AmazonBasics, and Molecule), Tuft & Needle and Purple have started selling pillows, and Casper has launched its products into the sky, as the bedding

on certain American Airlines sleeper seats. While many of the new mattresses and other sleep products we've tested in our labs performed as promised, many others did not.

One of the latest developments? The rise in popularity of adjustable bed frames. Long marketed to seniors, adjustable bed frames are equipped with motors that allow you to elevate your legs or upper body with the click of a button. Now manufacturers are promoting them to consumers of all ages who like to watch TV in bed or lounge with a laptop or tablet.

According to the International Sleep Products Association, about 9 percent of U.S. consumers use an adjustable bed frame, but sales increased 200 percent from 2011 to 2015. The retail prices of the frames are between several hundred and several thousand dollars.

Certain manufacturers claim that an adjustable bed frame can help alleviate back pain, but doctors say that's debatable. "Adjustable beds may have some benefit for some patients with back, neck, and other spine problems but are certainly not necessary," says Jay Khanna, M.D., professor of orthopedic surgery and biomedical engineering at Johns Hopkins University. Ultimately, he

says, the majority of people with problems related to the spine benefit most from a firm and flat mattress.

CR doesn't test bed frames, but we do note in our mattress ratings which models are compatible with these motorized beds. Most of the top foam and innerspring mattresses we've tested can be used on an adjustable frame.

Pillow-Top Mattresses

"There are more mattresses with pillow-tops than ever before," says CR senior market analyst Claudette Ennis. "And there are also new constructions to choose from." Designed to add extra cushion to a mattress, pillow-top models do not come cheap: They often cost hundreds more than the standard version of the same mattress.

While the increased softness of pillow-top mattresses might appeal to our fantasy of sleeping on a cloud, what you gain in cush you may lose in support. Firmness varies with the pillowtop models we've tested—some score as high as a 6 on our 10-point firmness scale (with 10 being the firmest). But if a soft upper layer is what you're looking for, you could certainly find happiness with a pillow-top. We suggest

5 Signs Your Mattress Is Shot

It's not always obvious when a mattress has outlived its usefulness. Here are telltale clues that it's time to say goodbye—and advice on getting the most life from your mattress.

It's a little lumpy. Lumps or deep indentations can happen over time, no matter which materials a mattress is made of. It may also sag, causing you to roll to the center.

The foam is failing. Spilling water on certain types of foam may cause damage to the adhesive between the layers, causing them to shift. The foam may also just degrade over time.

You're waking up sore. A worn-out mattress might no longer support your spine's natural curve, causing stress to other parts of your body as you sleep. If you're suddenly waking up with unexplained soreness, your mattress might no longer be giving you the support you need.

You can feel the foundation. Sleeping in the same spot every night can compress the layers so

much over time that you can begin to feel the bed slats or whatever else the mattress is placed on.

The springs are poking you. Ouch! If you've moved your mattress often or sat in the same spot for extended periods of time (such as when watching TV in bed), you've probably pushed its innards out of alignment and a spring might have been pushed out of place.

you try it out first to make sure it provides the support you want.

Several manufacturers also promise that their mattresses increase comfort by providing cool sleep through the use of heat-reducing materials such as gel-infused foam, copper, and graphite. Some of these models, including Reverie's Dream Supreme II Hybrid Sleep System and the Tuft & Needle Mint, did not retain heat in our tests. Others, however, trapped body heat quite a bit. (Find out which mattresses sleep warm by referring to the "retains warmth" column in the ratings.)

Our tests have found that, in general, traditional innersprings tend to sleep cooler than foam. "You're more likely to sleep warm on a foam mattress, even when compared with a hybrid innerspring, which we define as a combination of several inches of foam layers over metal springs," says Chris Regan, who oversees CR's mattress tests.

Get the Most Mattress for Your Money

One benefit of the crowded marketplace is that all of the competition appears to be driving prices down. The median amount CR members reported paying for a mattress was about \$200 less in our

2018 Mattress Brands and Retailers survey than in our 2016 survey (down from about \$1,330 to \$1,130). Our most recent survey also found that the 6 percent of CR members who shopped at Mattress Firm, the biggest specialty retailer for mattresses, paid a median of about \$500 less, compared with our 2016 survey. Our survey also shows that though most CR members do not try to negotiate a better price on a mattress, those who do are usually successful, saving a median of just more than \$200.

Other strategies for saving include shopping close to national holidays, when retailers are likely to offer discounts online and in stores. If you're interested in a particular model or manufacturer, sign up for its online newsletter so that you're notified of sales—you might even get 10 percent off just for registering. If you're shopping online, put a mattress in your digital shopping cart, then leave the website—if you signed up for a newsletter, chances are the company will send you an email with a discount, encouraging you to complete your purchase. And it never hurts to ask: If the website you're on has a chat assistant offering to answer questions or help you to shop, haggle just like you would on a showroom floor.

How to Make a Mattress Last

The first rule is to rotate it at least twice a year or as directed by the manufacturer. (You might also be able to flip it, per the manufacturer's instructions.) This prevents excessive strain on any one area for an extended period of time, which can degrade a mattress faster.

Remember that a mattress is designed for sleeping. Sitting on the edge to put shoes on or to lift weights can cause premature sagging or indentation, as can plopping down in the middle every night to watch TV or check your email.

Adding a cushy mattress topper might seem like an easy fix to cover up flaws, but chances are it will offer little relief.

"If your mattress is worn and saggy, a topper isn't going to help," says Linda Klein, president of Charles P. Rogers. "It will just reflect what's underneath it." And while putting a topper on a fresh mattress might reduce the wear somewhat, it will also change the way the mattress supports your body.

WHERE THE DEALS ARE

Here is how 32 mattress retailer chains and independent stores fared in the 2018 CR survey, based on member satisfaction with price.



Ratings are based on the Consumer Reports 2018 Winter Survey of 16,346 CR members reporting on their mattress purchases made since 2015.

The Right Way to Clean a Mattress

IF YOU FIND yourself sniffing as you snuggle in for the night, it might be a sign that it's time to clean your mattress.

House dust mites—tiny microscopic bugs that feed off of the dead skin cells of humans and their pets—can take up residence in bedding. When we inhale their feces, it can trigger an allergic response, leading to a runny nose, itchy eyes, coughing, and other symptoms.

Giving the mattress a thorough cleaning can provide relief by reducing these and other offending allergens, such as pet dander. "Those with sensitivities to indoor allergens, such as to pet hair, dander, and house dust mites, will generally see a reduction in symptoms with cleaning," says Clifford W. Bassett, M.D., medical director of Allergy & Asthma Care of New York, a medical practice.

Even if itchy eyes or a runny nose isn't a concern, cleaning your mattress twice a year can help extend its life. Follow these steps for a fresh start in the bedroom. Note: The process requires you to leave your mattress undisturbed for 24 hours, so you'll need to find another place to sleep for one night.

STEP 1

Strip the mattress bare and toss all bedding in the wash. (Launder according to the care instructions.) If dust mites are a concern, make sure to wash bedding materials at 130° F or hotter: The water must be at least this temperature to effectively reduce their populations. (You may need to increase the temperature setting on your water heater. Most are set at around 120° F.)

STEP 3

Spot-treat any stains with an enzyme-based upholstery cleaner or pet stain and odor remover. You can also try a simple solution of 1 teaspoon mild dishwashing liquid and 1 cup warm water.

STEP 2

Thoroughly vacuum the entire surface of the mattress with your vacuum's upholstery or crevice attachment. The surface probably won't look dirty, but you can bet that dust, dead skin cells, and mites are there—they're just not visible.

STEP 4

To deodorize the mattress, cover the surface with a layer of baking soda. For best results, leave it undisturbed for 24 hours, then vacuum it away.

6 Picks for Sweet Dreams

Confused about where to begin your mattress search? CR's experts share highlights of a half-dozen high-scoring mattresses that will satisfy a wide array of sleep preferences and budgets. Prices listed are for queen-size.

ALL-AROUND FOAM FAVORITE

💰 Casper
The Casper (Foam)
 \$995

85

Impressive all-around performance earns Casper's namesake mattress the top spot in our foam ratings, and its combination of stellar test results and a moderate price make it a CR Best Buy. Its stability is better than average, meaning you won't be rocked and rolled by your bedmate's movements, and it offers ample support for a wide range of body types and sleep styles.

A BARGAIN INNERSPRING BUILT TO LAST

💰 Denver Mattress
Doctor's Choice Plush
 (Innerspring) \$580

76

The Denver Mattress retains its position as a CR Best Buy. The innerspring earns a Very Good rating for support for side and back sleepers of all sizes. Despite its low price, this model is built to last: It earns an Excellent rating in our durability test, which simulates eight years of use. It's not as stable as some of the competition and is not very firm, with a firmness rating of 3 out of 10 (with 10 being the firmest).

SOFT, SUPPORTIVE, AND GREAT FOR COUPLES

✓ Tuft & Needle
Mint (Foam)
 \$895

78

On the softer side, with a firmness rating of 4 out of 10, the Tuft & Needle Mint mattress rates a Very Good in support for all body sizes (petite, average, and large/tall), whether you prefer to sleep on your side or on your back. It also earns a rating of Excellent for stabilization, which means it's great for couples because one sleeper's restless movements won't be easily felt by the other sleeper.

Cover It Up

Using a fitted mattress pad can help to keep your mattress fresher between cleanings.

TIP

In between cleanings, use a fitted mattress pad placed underneath the bottom sheet to absorb moisture and reduce the chances of staining. (Be sure to launder it occasionally.) If you're worried about dust-mite allergies, you can use a dustproof or allergen-impermeable cover to protect against these creepy-crawlies.

FOR THOSE WHO LIKE TO SLEEP TOASTY

✓ Charles P. Rogers
St. Regis Pillowtop
 (Innerspring) \$1,160

75

If you tend to pile on the blankets, this innerspring is for you: Our tests found that it retains a fair amount of body heat. The St. Regis Pillowtop offers Very Good or Excellent support for petite side sleepers and all back sleepers, though it doesn't perform as well for average or large/tall side sleepers, earning a middling Good rating in those tests.

RIVALS THE BEST—AT LESS THAN HALF THE PRICE

✓ Sleep Innovations
Marley (Foam)
 \$430

77

This bargain doesn't require much compromise: For less than half the price of the No. 1-rated foam Casper above, this mattress boasts similar scores in our tests for back-sleeper support, durability, and stabilization. It doesn't compare as favorably in support for large/tall side sleepers, though. In that test, the Sleep Innovations Marley earns just a Good rating.

A NATURAL CHOICE FOR BACK SLEEPERS

💰 Sleep on Latex
Pure Green Firm (Foam)
 \$795

81

A solid performer in our tests, the Pure Green is made of all-natural latex foam. It's extremely durable, maintaining its shape after eight years of simulated use in our durability tests. No matter your build, it offers Excellent support for back sleepers and Very Good support for side sleepers. This mattress is on the firmer side of our ratings, scoring a 7 out of 10 on our firmness scale.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results								Specs		
					Petite side sleeper	Average side sleeper	Large/tall side sleeper	Petite back sleeper	Average back sleeper	Large/tall back sleeper	Durability	Stabilization	Firmness rating	Retains warmth	Works with adjustable frame
INNERSPRING															
✓	1	Avocado Green ^{1,2}	85	\$1,400	↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑	7		•
✓	2	Charles P. Rogers Powercore Estate 5000 ¹	80	\$1,500	↑	↑	↑	↑↑	↑↑	↑↑	↑↑	↑	6		
✓	3	Avocado Green Mattress Pillowtop ^{1,2}	79	\$1,800	↑	↑	↑	↑	↑	↓	↑↑	↓	5	•	•
✓	4	Sealy Posturepedic Performance Copper II ⁴	78	\$1,580	↑	↑	↑	↑↑	↑↑	↑	↑↑	↓	4	•	•
✓	5	Stearns & Foster Lux Estate Belleville	78	\$3,700	↑	↓	↓	↑↑	↑↑	↑	↑↑	↑	7		
✓	6	Stearns & Foster Lux Estate Middletown ³	78	\$2,300	↑	↑	↑	↑↑	↑	↑	↑↑	↑	4		•
✓	7	Sealy Posturepedic Premium Silver Chill ⁴	77	\$2,150	↑	↑	↓	↑↑	↑	↑	↑↑	↓	3		•
✓	8	Voila Hybrid ^{1,4}	77	\$1,200	↑	↑	↑	↑	↑	↑	↑↑	↑	6		•
✓	9	WinkBeds The WinkBed Luxury Firm	77	\$1,350	↑	↑	↑	↑	↑	↓	↑↑	↑	5		•
✓	10	Serta iSeries Hybrid 500 14" Cushion Firm ^{3,4}	76	\$1,520	↑	↑	↑	↑	↑	↓	↑↑	↑	5		
Ⓢ	11	Denver Mattress Doctor's Choice Plush	76	\$580	↑	↑	↑	↑	↑	↑	↑↑	↓	3		•
✓	12	Beautyrest Silver Golden Gate Pillowtop ³	75	\$1,130	↑	↑	↑	↓	↓	↓	↑↑	↑	4		•
Ⓢ	13	Charles P. Rogers St. Regis Pillowtop	75	\$1,160	↑	↓	↓	↑↑	↑	↑	↑↑	↑	6	•	
✓	14	Sealy Posturepedic Performance Lawson Euro Pillowtop ³	75	\$1,570	↓	↓	↓	↑↑	↑	↑	↑↑	↑	6		
✓	15	Beautyrest Silver High Tide Luxury Firm Summit Pillowtop ³	75	\$1,355	↓	↓	↓	↑	↑	↓	↑↑	↑	2		
✓	16	Sealy Posturepedic Essentials Trust II ⁴	74	\$1,100	↑	↓	↓	↑↑	↑	↓	↑↑	↑	4		•
Ⓢ	17	Classic Brands Sleep Trends Davy	74	\$780	↑	↑	↓	↑	↑	↓	↑↑	↑	4		•
✓	18	Kingsdown Crown Imperial Empire ^{3,4}	74	\$2,000	↑	↑	↑	↑	↓	↓	↑↑	↑	3		
✓	19	Saatva Flagship Luxury Firm Eurotop	74	\$1,000	↓	↑	↑	↑	↑	↓	↑↑	↓	3		•
✓	20	Ethan Allen EA Signature Firm ³	74	\$2,000	↑	↑	↑	↑	↑	↑	↑	↑	7		•
✓	21	Stearns & Foster Signature Garrick Luxury ³	73	\$2,200	↑	↓	↓	↑↑	↑	↓	↑↑	↑	4		•
✓	22	Purple 3	73	\$2,200	↑	↑	↑	↑	↑	↓	↑↑	↑	3		•
✓	23	Duxiana Dux 1001	73	\$4,950	↑	↑	↑↑	↑	↑	↓	↑↑	↓	4		
	24	Tempur-Pedic Tempur-Flex Supreme Breeze ³	72	\$3,500	↑	↑	↓	↑	↑	↓	↑↑	↑	4		•
	25	SleepFresh EvoCoil Plush	72	\$3,000	↑	↓	↓	↑	↑	↓	↑↑	↑	3		
	26	Beautyrest Black Mariela	72	\$2,500	↓	↑	↑	↓	↓	↓	↑↑	↑	2		•
	27	Tomorrow SleepSystem ⁴	72	\$990	↓	↓	↓	↑	↓	↓	↑↑	↓	3		•
	28	Beautyrest Silver Hybrid Grand Isle Firm ³	72	\$1,460	↑	↑	↓	↑	↑	↓	↑↑	↓	4		•
	29	Serta Hotel Beds Concierge Suite II ³	71	\$1,100	↑	↑	↑	↑	↓	↓	↑↑	↓	3		
	30	Beautyrest Silver Navy Pier Pillowtop ³	71	\$700	↑	↑	↑	↑	↓	↓	↑↑	↑	3	•	•
	31	Sapira by Leesa Luxury ⁴	71	\$1,595	↑	↑	↓	↑	↑	↑	↑↑	↑	3		•
	32	Tempur-Pedic Tempur-Flex Prima Firm ⁴	71	\$2,100	↑	↓	↓	↑	↑	↓	↑↑	↑	4		•
	33	OrganicPedic by OMI Stella ¹	71	\$2,000	↓	↓	↓	↑↑	↑	↑	↑↑	↓	4		
	34	Amore Beds Hybrid ^{3,4}	71	\$875	↑	↓	↓	↑	↑	↓	↑↑	↓	6	•	•

¹ Includes a latex-foam layer. ² Certified organic. ³ Includes a layer of gel-infused foam. ⁴ Includes a layer of memory foam. ⁵ Made of foam but not memory foam. ⁶ Firmness displayed is an average value.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results								Specs		
					Petite side sleeper	Average side sleeper	Large/tall side sleeper	Petite back sleeper	Average back sleeper	Large/tall back sleeper	Durability	Stabilization	Firmness rating	Retains warmth	Works with adjustable frame
FOAM															
	1	Casper The Casper ⁴	85	\$995									4		
	2	Essentia Stratami ^{1 2 5}	81	\$2,770									6		
	3	Reverie Dream Supreme II Hybrid Sleep System Firm ²	81	\$3,700									4		
	4	Sleep on Latex Pure Green Firm ^{1 2 5}	81	\$795									7		
	5	BedInABox Tranquillum ^{3 4}	79	\$1,300									6		
	6	Tuft & Needle Mint ³	78	\$895									4		
	7	Novaform Serafina Pearl (Costco) ^{3 4}	78	\$800									5		
	8	Serta Luxury 12" Gel Memory Foam ⁴	78	\$500									7		
	9	Lull The Lull ^{3 4}	78	\$800									6		
	10	GhostBed GhostBed ^{1 3 4}	77	\$895									7		
	11	Dream Bed Lux LX510 ⁴	77	\$2,700									2		
	12	Sleep Innovations Marley ^{3 4}	77	\$430									7		
	13	GhostBed Luxe ⁴	77	\$1,475									4		
	14	Nest Bedding Love & Sleep	76	\$750									4		
	15	Purple The Purple Mattress ⁵	76	\$1,000									3		
	16	Sheex Performance Cooling ⁴	75	\$1,400									3		
	17	My Pillow 10" Mattress ^{3 4}	74	\$900									6		
	18	Ashley Sleep The Perfect 10 ^{3 4}	74	\$700									4		
	19	Tuft & Needle T&N Mattress ^{3 5}	74	\$575									5		
	20	Nectar The Nectar ⁴	73	\$795									6		
	21	Tulo Medium ⁴	73	\$650									3		
	22	Reverie Dream Supreme II Hybrid Sleep System Medium ²	73	\$3,700									3		
	23	Brentwood Home Sequoia Euro Top ^{3 4}	72	\$1,495									5		
	24	PangeaBed Copper Mattress ^{1 3 4}	72	\$945									6		
	25	Bear Queen ³	71	\$850									6		
	26	OrganicPedic by OMI Flora Nouveau ^{1 2 5}	71	\$4,445									4		
	27	Beautyrest 14" SurfaceCool Gel ^{3 4}	71	\$600									4		

ADJUSTABLE AIR

	1	Sleep Number 360 p6 Smart Bed ^{4 6}	81	\$2,600									4		
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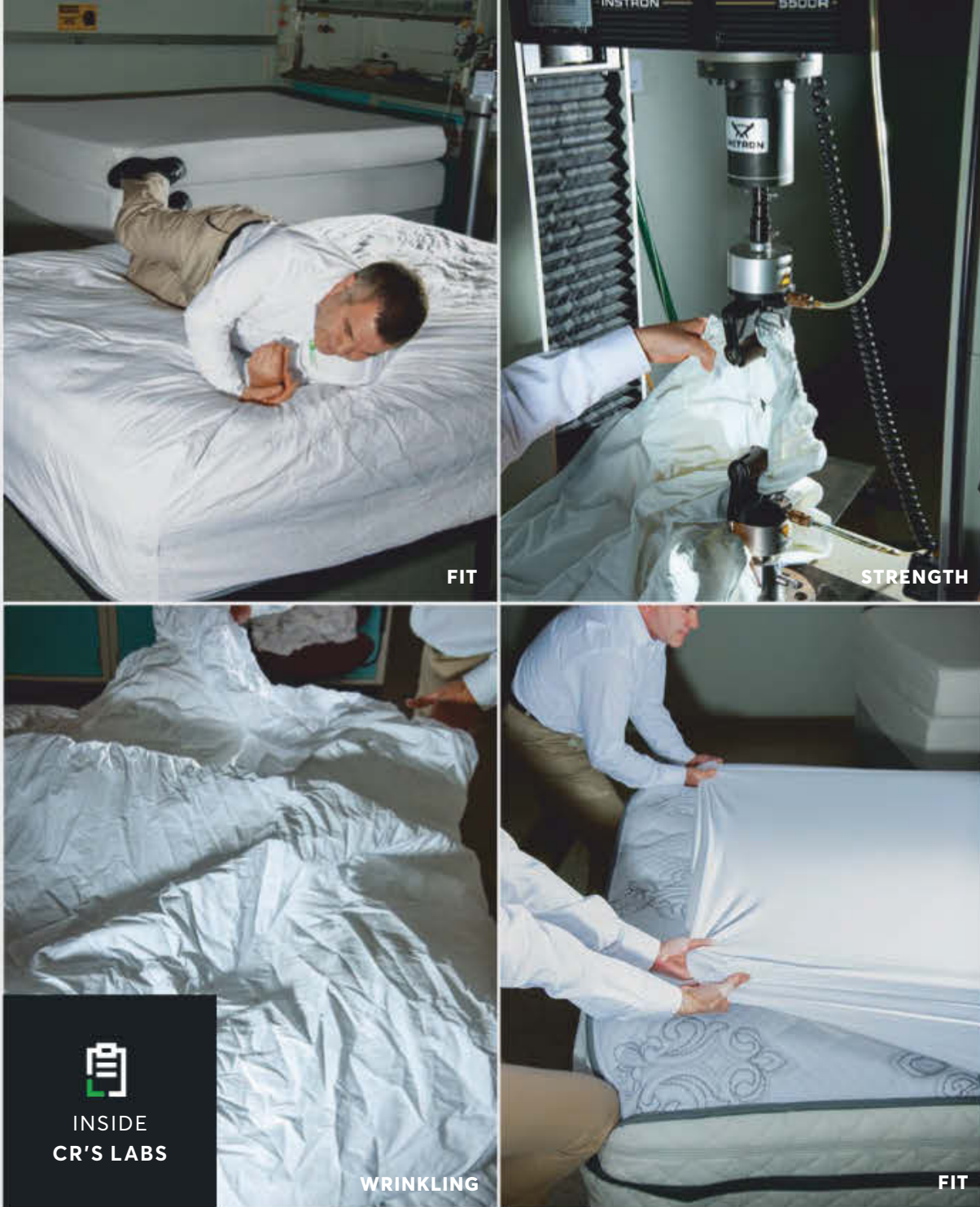
All-Access or Digital members can find the latest ratings at [CR.org/mattress](https://www.cro.org/mattress).

HOW WE TEST: We calculate the **Overall Score** primarily by evaluating a mattress's side and back support, durability, and stabilization. For adjustable air mattresses, we use an average of firmness levels. Support for **side sleepers** is the ability to keep a side sleeper's spine relatively horizontal.

Support for **back sleepers** is the ability to maintain the natural curve of the back sleeper's spine. In our support tests, we use a woman 4 feet, 11½ inches to 5 feet, 1½ inches tall and 110 to 127.5 pounds for the **Petite sleeper** scores, and a man 6 feet, 2 inches to 6 feet, 4 inches tall and 220 to 242 pounds for

the **Large/tall sleeper** scores. The **Average sleeper** is an average of these two sizes. **Durability** gauges a mattress's ability to keep its original shape, height, firmness, and support after a simulated eight to 10 years of use, including our passing a nearly 310-pound roller over each mattress 30,000 times.

A high score for **Stabilization** indicates little or no bouncing or vibration transferred for innersprings, and ease of movement and changing positions for foam. We rate **Firmness** on a scale of 1 to 10, with 10 being the firmest. **Price** is approximate retail for a queen-size mattress without a box spring.



HOW TO DECODE LINEN LABELS

Sheet manufacturers use a host of terms to describe products, though their significance is debatable, especially when it comes to cotton. “The type of cotton and the way it’s woven is much more important than the thread count,” says Kathleen Huddy, chair of the subcommittee on Home Furnishings at ASTM International, a standards-setting organization. Below, we define several of the most common terms you’re likely to see when shopping for sheet sets.

Bamboo Viscose

Otherwise known as rayon from bamboo, bamboo viscose is made of chemically processed bamboo pulp that is then spun into a fiber to make fabric.

Egyptian Cotton

A type of cotton, grown primarily in Egypt, that has long fibers (up to 1 $\frac{5}{8}$ inches) and is thought by many to be among the strongest.

Percalé

Cotton or other fibers closely woven in a plain-weave, or crisscross, pattern. Describes the weave of most cotton sheets.

Pima

A type of cotton that has a fiber length of up to 1 $\frac{5}{8}$ inches and is said to be characterized by high fiber strength.

Supima Cotton

Brand name of Pima cotton grown in the U.S., trademarked by the Supima Association.

Sateen

A type of weave that gives sheets a glossy appearance.

Thread Count

The number of vertical and horizontal threads that go into each square inch of material.

What Our Rigorous Cotton-Sheet Testing Revealed

FOR THE FIRST TIME since 2010, CR has tested bedsheets. We recently put a cross-section of widely available cotton sets—from Amazon, Casper, L.L.Bean, Target, and others—through their paces in our labs. (For details of our testing, see *How We Test*, on the facing page.) Based on the initial results, here are a few guiding principles to remember when you shop for your next set.

Thread count does not predict performance. We found no correlation between thread count and performance in the sheets we tested.

Sheets can shrink significantly. Cotton sheets we tested shrank up to 6 percent, and some no longer fit on a mattress after many washes. Bamboo viscose sheets

we tested (not rated) shrank by more than 15 percent; our testers couldn’t force the fitted sheet onto even an 8-inch-high mattress after just a few washes. Synthetic sheets (not rated) had almost no shrinkage.

The feel of cotton remains consistent after numerous washes. We felt sheets before and after washing for our sensory perception test. Of the sheets we tested, our panelists did not notice a significant difference between the sheets when new and after they’d been washed 25 times.

Price doesn’t indicate performance. Near the top of our ratings, sheets from L.L.Bean cost \$150. Near the bottom, the \$140 Casper Cool Supima sheets shrank so much we could no longer fit them on any queen mattress.

Recommended	Brand & Model	Overall Score	Price	Test Results					Fits Mattress Thickness*			Indicates correct orientation	Notes
				Fit	Wrinkling	Strength	Shrinkage	Softness	10-inch	14-inch	18-inch		
SHEETS													
	Matouk Sierra	79	\$350					Soft					These sheets were the only ones that would fit the deepest mattresses after a year's worth of washing, but they have so much slack that they do not lie taut across the mattress.
	L.L.Bean Pima Percale Sheet Set	74	\$150					Soft					These were the most tear-resistant of all sheets tested—they could be pulled uniformly in all directions and across their seams without tearing. They also shrank the least of any sheets we tested.
	Frette Porto	65	\$725					Softer					Frette's fitted sheet has elastic only on the four corners (instead of around the entire bottom edge), yet our testers reported that it fit snugly and neatly all the way around.
	Brooklinen Luxe Core	61	\$150					Softer					This sheet is the best value of our recommended models that earned a "softer" designation in our sensory tests.
	Boll & Branch Percale Solid Sheet Set	61	\$240					Softer					Our testers didn't note any outstanding qualities in these sheets. The manufacturer claims they're made from organic cotton.
	Wamsutta Dream Zone 1000TC	40	\$200					Soft					These were the heaviest of the cotton sheets tested, most likely because of the claimed 1,000 thread count. They also had the widest elastic band around the fitted sheet. Neither seemed to matter, though, in terms of performance.
	Target Threshold Organic Sheet Set	30	\$45					Softer					The idea of organic may appeal, but our testers could not get these sheets to fit on any queen-size mattress after less than a year's worth of washes, giving them a short life span.
	Casper Cool Supima	28	\$140					Softer					Casper's fitted sheets have a seam around the top edge of the mattress for a neat fit, but they were the smallest of any set tested and would not fit on a standard mattress after less than a year's worth of washes.
	Pinzon by Amazon Pinzon 400 TC Egyptian Cotton Sateen	25	\$50					Soft					Though this set didn't shrink much, the fitted sheet had so little slack that it could no longer be stretched over the mattress after less than a year's worth of washes.

HOW WE TEST: We calculate the **Overall Score** by evaluating sheet sets for fit, shrinkage, strength, and wrinkling. **Fit** denotes how well a fitted sheet can cover a mattress after a maximum of 25 wash-dry cycles without popping off from under the mattress or at the corners.

A Poor rating in our **Fit** test means the sheet could not reach all four corners of the mattress. **Shrinkage** is scored by measuring a section of each sheet before and after 10 washes. **Strength** is a combination of how well the fibers in the sheet stand up to tearing and the strength



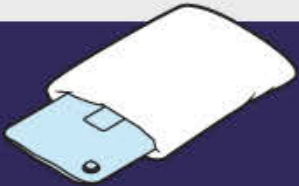

of the seam, and is evaluated by clamping the sheet or the seam between two jaws and pulling with increasing force until the sample tears. **Wrinkling** is a comparison of dried sheets against wrinkle references from the American Association of Textile Chemists and

Colorists. To assess **Softness**, a panel of 11 staffers compared sheets with three reference softness cloths and placed each sheet into one of three categories (soft, softer, and softest). **Price** is for a queen-size sheet set that has one fitted sheet, one flat sheet, and two pillowcases.

*Indicates fit on mattress after 25 wash-dry cycles.

Do These Pillows Keep Their Promises?

Can a pillow reduce pain and improve sleep? Medical experts weigh in on the claims of several types of specialty pillows on the market today.

TYPE	PROMISE	EXPERTS' OPINION
 <p>BUCKWHEAT-FILLED PILLOW</p>	<p>Filled with buckwheat hulls, these are meant to keep sleepers cool and offer support by conforming to the shape of the head and neck.</p>	<p>Some individuals may find these pillows comfortable, says Joel Press, M.D., the physiatrist-in-chief at the Hospital for Special Surgery in New York City. Others could find them to be noisy or too stiff. Though rare in the U.S., there have been reports of allergies triggered by buckwheat.</p>
 <p>WEDGE-SHAPED PILLOW</p>	<p>Shaped like a doorstop, these prop your torso up on an incline, using gravity to, theoretically, help with heartburn and sinus pressure.</p>	<p>They might be worth a try, says Jennifer Hsia, M.D., an assistant professor in the department of otolaryngology, head and neck surgery at the University of Minnesota Medical School. It can be easier for stomach acid to travel up to the throat when we are horizontal vs. when we are more upright, Hsia says. She also says a wedge-shaped pillow may help to reduce "some of the swelling that can occur in our nasal passages just from lying down."</p>
 <p>ANTI-SNORE PILLOW</p>	<p>These pillows are designed to encourage people to sleep on their sides, which can potentially reduce snoring.</p>	<p>Trying one may be a reasonable place to start: They may help address mild snoring problems in people who snore only when lying on their backs, Hsia says. (They will not be effective for those who also snore on their sides.) If snoring persists, speak to your healthcare provider: It may be a symptom of sleep apnea, which requires more serious interventions.</p>
 <p>L-SHAPED PILLOW</p>	<p>Large pillows designed to be both hugged and placed between the knees, these are supposed to help side sleepers snooze comfortably, reducing stress on the hips and lower back.</p>	<p>Placing a pillow between the knees is common advice for relieving low-back pain, says Sue Gordon, Ph.D., chair of restorative care in aging at the College of Nursing and Health Sciences at Flinders University in Adelaide, South Australia. The shape and surface area might make it easier to find a position that relieves soreness for side sleepers, says Jeffrey Goldstein, M.D., a clinical professor in the department of orthopedic surgery and chief of spine service at NYU Langone Health.</p>
 <p>WATER-FILLED PILLOW</p>	<p>By using more or less water in a bag inserted into this pillow's core, you can customize the firmness and height to your liking.</p>	<p>The adjustability "does allow you to dial in your comfort," Goldstein says. "You can customize it to fit your needs."</p>
 <p>CERVICAL PILLOW</p>	<p>Cervical pillows have a dip in the middle intended to keep your neck supported and properly centered.</p>	<p>Cervical pillows can help maintain your spine's proper alignment while you sleep, Press says. At least one manufacturer of a certain type of cervical pillow claims it can provide traction, but true therapeutic traction—which gently stretches the neck to relieve pain—can require specialized devices.</p>



Sick and Tired?

... of not being able to sleep soundly? Many Americans are using supplements, alcohol, and medications that not only don't work well but also may be making them ill. Learn what's safe and effective.

THE EXPLOSION of the Challenger space shuttle. The Exxon Valdez oil spill. A warship collision in 2017 that claimed the lives of seven sailors. Implicated in all these incidents? A lack of sleep.

Fatigue wreaks more havoc in our lives than we realize, says Daniel Buysse, M.D., UPMC professor of sleep medicine and psychiatry at the University of Pittsburgh School of Medicine.

Research suggests, for example, that if you sleep poorly, you're 60 percent more likely to be injured on the job than colleagues who sleep well. And drowsy drivers cause about 10 percent of car wrecks, according to a 2018 report from the American Automobile Association

Foundation for Traffic Safety.

Sleeplessness has become an American epidemic. Eighty percent of U.S. adults say that they have trouble sleeping at least one night a week, according to a new nationally representative Consumer Reports survey of 1,767 people. Four out of 10 toss and turn most nights.

Our survey found that sleeplessness affects people of all ages. The top complaint among millennials is falling asleep, while baby boomers are vexed more by waking during the night.

Women are slightly more likely to have received a diagnosis of insomnia, meaning they can't sleep despite ample

time in bed. Men are more likely to receive a diagnosis of sleep apnea, a condition in which breathing stops briefly, repeatedly waking the sleeper.

Thirty percent of U.S. adults—an estimated 83 million people—told us that poor sleep negatively affects their quality of life.

“How long we sleep affects our hormones that regulate appetite, immune function, and the neural circuits in the brain that govern our ability to think and how we feel,” Buysse says. It increases the risk of diabetes, high blood pressure, obesity, and heart disease. “How you sleep affects literally everything.”

Sleep Better

AMONG ALL U.S. ADULTS:



80%

SAY THEY HAVE TROUBLE SLEEPING AT LEAST ONCE A WEEK.*



30%

SAY POOR SLEEP NEGATIVELY AFFECTS THEIR QUALITY OF LIFE.*

Hidden Causes

Our lack of sleep stems mainly from societal, not physical, problems, says Michael Sateia, M.D., professor emeritus of psychiatry at the Geisel School of Medicine at Dartmouth. “With the increasing demands of our occupations and family life and the incessant bombardment of media, we aren’t giving ourselves the opportunity for adequate sleep.”

If you toss and turn despite consistently allowing 7 or 8 hours in bed or if you feel tired during the day, consult a doctor. Common conditions such as anxiety, depression, an enlarged prostate, heartburn, and pain can keep you up.

Or you may need to adjust the type, timing, or dosage of a medication you take. Steroids, blood pressure drugs, and allergy and cold medications, for example, can act as stimulants and interfere with sleep.

If you share a bedroom, your partner can provide clues. Snoring and gasping for breath can indicate sleep apnea; excessive movement, restless legs syndrome. To investigate, your doctor may suggest an overnight test or refer you to a sleep specialist.

A Little-Known Talk Therapy

If those steps don’t help, the American Academy of Sleep Medicine (AASM) recommends cognitive behavioral therapy for insomnia (CBT-I)—a form of counseling that identifies and replaces thoughts and behaviors that contribute to poor sleep—as a first-line treatment.

“CBT-I is at least as effective as medications, the benefits are long-lasting, and it’s manifestly safer than any pill,” Sateia says. But few people have heard of it. “And even if they are aware of CBT-I,

it can be hard to find a trained therapist,” he says. For advice, see “Finding a Sleep Therapist,” on the facing page.

The Problem With Pills

Nearly one-third of people who complained of sleep problems at least once a week said they had used an over-the-counter or prescription sleep drug in the past year.

But many of these people don’t get the rest they seek: About one-third reported very good or excellent sleep. And they often don’t wake refreshed: Nearly 60 percent of people taking sleep drugs reported feeling drowsy, confused, or forgetful the next day.

The evidence is strongest for prescription drugs, says Buysse, who along with Sateia and other researchers reviewed 129 studies of sleep drugs for the most recent treatment guidelines from the AASM. But the benefits are modest, increasing sleep time by about 20 to 30 minutes.

Most surprising: There’s little research into the effectiveness of some of the sleep aids Americans turn to most often, including the antidepressant trazodone (sold only as a generic) and over-the-counter products, so it’s hard to know whether they help. OTC drugs contain older antihistamines, such as diphenhydramine in Advil PM and doxylamine in Unisom Sleep Tabs, which can cause drowsiness as a side effect.

More Risk Than Reward

All sleep medications, including OTC versions, have side effects. Most commonly, that means making you feel drowsy, dizzy, less mentally sharp, or more physically unsteady the next day.

People have also reported experiencing hallucinations, having memory

lapses, and performing activities such as driving or eating while asleep.

With most sleep drugs, long-term use can lead to dependence, and abruptly stopping the drugs can lead to a rebound effect, where insomnia gets worse. Taking too much, combining different types of sleep aids, or using them with other drugs or alcohol magnifies the risks.

Our survey also found that more than 1 out of 10 Americans who used prescription drugs for sleep took an opioid for that purpose. That’s particularly dangerous not just because opioids are addictive but also because they can slow your breathing and make it more shallow. So when combined with alcohol or other sedatives, which have the same effect, “you could stop breathing altogether,” Buysse says.

The survey also shows that people often ignore warnings not to take any sleep aids unless they can spend at least 7 hours in bed. “After 4 or 5 hours, you can still have the drug circulating in your blood, so you will be less alert at precisely the time you need to be doing things that require your concentration,” Buysse says.

The Science of Supplements

In CR’s survey, nearly 1 out of 5 people said that they took supplements to help them sleep. These included valerian, chamomile, and, especially, melatonin, a hormone that your brain secretes at night to signal to your body that it’s time to wind down.

While people in our survey reported fewer problems with sleep supplements than with drugs, these products still caused side effects: About a quarter of respondents said they were drowsy the next day, and 12 percent said they felt

AMONG U.S. ADULTS WHO USED SLEEP DRUGS:



38%

REPORTED SOME KIND OF MISUSE AT LEAST ONCE IN THE PAST YEAR.*



50%

TOOK A SLEEPING DRUG WITHOUT ALLOWING FOR AT LEAST 7 HOURS OF SLEEP AT LEAST ONCE IN THE PAST YEAR.*

confused, distracted, or forgetful.

People taking supplements were also far less likely to say the products helped a lot than were those taking OTC or prescription drugs.

Still, melatonin may have limited but important uses for certain situations, says Alcibiades Rodriguez, M.D., the medical director of the Comprehensive Epilepsy Center–Sleep Center at New York University, especially for people older than 70, who tend to make less melatonin. It may also help people who need to fall asleep at a time that’s not in sync with their internal clock—shift workers, for example, or those suffering from jet lag.

There’s less evidence for other supplements or herbal sleep aids. A 2015 review of 14 studies found that people with insomnia who took the herbs valerian, chamomile, kava, and wuling didn’t sleep significantly longer or better than those who took a placebo.

Another sleep aid growing in popularity: CBD (cannabidiol), a compound extracted from cannabis plants, including marijuana and hemp. (CBD does not get you high.) In a separate nationally representative 2018 CR survey, of more than 2,000 people,

10 percent of people who had tried CBD said they used it to improve sleep, and a majority of these people said it helped.

Limited research in humans suggests that CBD may ease anxiety, and improve sleep in people with chronic pain. But there is still no clear medical evidence that CBD helps with insomnia. For more on CBD, see page 42.

Why a Nightcap Is a No-No

About as many Americans drink alcohol to help them sleep as take supplements, according to CR’s survey. Alcohol does make some people feel sleepy, “but it disrupts sleep later on,” says Jennifer Martin, Ph.D., associate professor of medicine at UCLA.

For example, alcohol can interfere with chemicals in your brain that govern waking and sleeping, could worsen apnea and snoring, or may make you need to get up to go to the bathroom.

And consistently getting disrupted sleep can worsen a sleep disorder. In some cases, this sets up a destructive loop, in which people drink more to try to sleep through the night, not realizing that worsens the problem.

A Safer Path to Sleep

Make sure you’re not sabotaging your shut-eye by, for example, drinking caffeine late in the day, exposing yourself to bright lights near bedtime, or taking a smartphone to bed.

If you can’t solve the problem on your own, talk to your doctor before dosing yourself with OTC sleep aids. In general, drugs should be reserved for short-term insomnia, such as that caused by jet lag or anxiety.

For sleeplessness lasting more than a few weeks, look for a physician certified in sleep medicine or ask your doctor about CBT-I (see below). Some people with severe sleep problems may benefit from taking a prescription sleep aid along with CBT-I, tapering off as the therapy takes effect.

But long-term use is typically not recommended. The drugs may become less effective over time, and in some cases people become hooked and can’t stop. “Very few people need sleep drugs long-term,” Sateia says. “And in those cases patients should be monitored carefully to make sure that the drugs are still effective and that they are not developing a dependency.”

For more on sleep drugs, go to [CR.org/sleepdrugs0319](https://www.cro.org/sleepdrugs0319).

Finding a Sleep Therapist

Cognitive behavior therapy for insomnia typically involves four to six sessions with a therapist, who will coach you on strategies to improve sleep.

Unlike drugs, “the benefits of CBT-I last after therapy

ends,” says Jennifer Martin, Ph.D., a sleep psychologist at UCLA. It’s best to work with a therapist certified in behavioral sleep medicine. Go to [absm.org/bsmspecialists.aspx](https://www.absm.org/bsmspecialists.aspx) to find one.

Online programs

might also help. One is Sleepio, in which a virtual sleep expert guides you through eight to 10 weekly sessions tailored to you. Sleepio is available in the U.S. only through certain insurers and employers, and as part

of research trials. If you’re interested, go to [sleepio.com](https://www.sleepio.com).

A similar program, SHUTi ([myshuti.com](https://www.myshuti.com)), is also looking for research volunteers. Martin also suggests trying a free app called CBT-i Coach.

RUN FOR YOU

Only **46% OF WOMEN** (vs. 54% of men) meet the recommended guidelines for aerobic activity: 150 minutes of moderate-intensity exercise or 75 minutes of vigorous exercise per week.

Being active **DELAYS COGNITIVE DECLINE** and extends the number of years of independent life.



R LIFE

Even modest exercise delivers major health benefits, no matter your age. Our advice will help you get—and stay—more active. And our treadmill and elliptical ratings will guide you to the best exercise equipment for your budget, needs, and space.

Exercising consistently can help prevent **HEART DISEASE**, improve sleep, boost mood, increase bone and muscle strength, and enhance overall quality of life.

To make the most of your workout, track your heart rate using a **SMARTWATCH** or **FITNESS TRACKER**, or use a treadmill or elliptical machine that works with a chest-strap heart-rate monitor.

Always use the **TREADMILL SAFETY KEY**. It clips to your clothes and stops the machine if you fall, helping to prevent additional injury.



E

veryone knows exercise is good for you. But not everyone knows exactly how good. When you see the many health benefits of physical activity in a list, they can

seem almost too good to be true.

Exercising consistently can help prevent heart disease and muscle weakness; control and treat chronic conditions such as diabetes, arthritis, and hypertension; increase bone and muscle strength; improve brain function and sleep; and boost mood and enhance your overall quality of life, says Dori E. Rosenberg, Ph.D., an associate investigator with the Kaiser Permanente Washington Health Research Institute. And it does all of that without causing the side effects of some of the prescription drugs used to treat those conditions.

Though the share of Americans who exercise regularly is climbing, many are still lagging behind. Only about half of adults get the 150 minutes per week of moderate-intensity aerobic activity (such as brisk walking) or 75 minutes of vigorous aerobic activity

(such as jogging) recommended by the Centers for Disease Control and Prevention. More than a quarter of Americans are almost completely inactive, reporting virtually no exercise at all in a year, according to the latest survey by the Physical Activity Council. That means millions of Americans are missing out on potential health benefits.

Becoming—and remaining—consistently active can be a challenge, even when you understand all of the benefits. So follow our advice to find easy ways to get moving, whether that means taking walks around the neighborhood, hitting the gym, or investing in home fitness equipment. Before you know it, aerobic exercise will be a regular part of your routine.

Tailor Your Routine to Your Lifestyle

“Some people prefer exercising by themselves at home; others prefer a social environment,” says Lyndon Joseph, Ph.D., an exercise physiologist in the division of geriatrics and clinical gerontology at the National Institute on Aging. “Whatever gets you moving and active is what you should do.”

Exercising at home on a treadmill or an elliptical can make being active

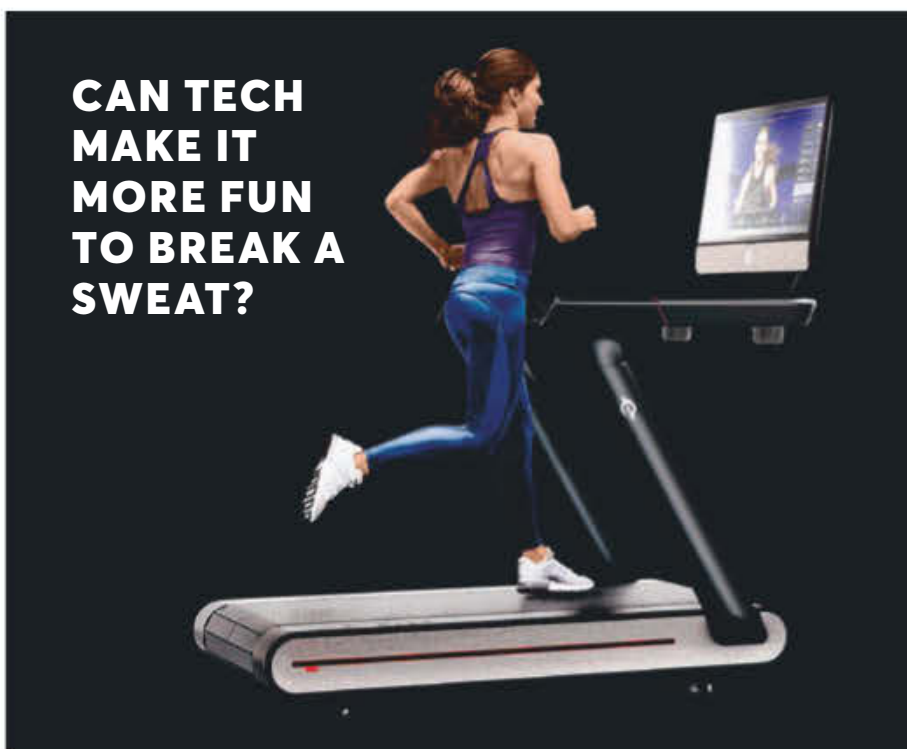
easier because it removes many of the barriers people can face. For example, you don’t have to worry about the weather, finding a safe place to walk, hitting traffic on the way to the gym, or jostling for equipment. Our treadmills and ellipticals ratings on page 77 will help you determine which machine best meets your needs and budget.

Strength training (such as weight lifting) can benefit your bones and your muscles, but aerobic exercise in particular strengthens the heart, Joseph says. And you don’t need to run marathons to see the benefits. In fact, brisk walking can be just as good for you as more vigorous exercise.

“The most recent physical activity guidelines reviewed all the evidence on aerobic physical activity and health, and found that walking can offer many of the same benefits as other types of physical activity,” Rosenberg says. “But you may need to increase the speed to make it a moderate-intensity activity.” (Depending on your fitness level, a moderate-intensity walk will usually be 3 to 4.5 mph, which results in 20- to 13-minute miles.)

Running or jogging can burn calories more quickly than walking and can potentially offer more bone-strengthening benefits. But not

PHOTOS: PREVIOUS SPREAD FROM LEFT: GETTY IMAGES (2); ALAMY STOCK PHOTO (2); GETTY IMAGES; JOHN WALSH/CONSUMER REPORTS (TREADMILL); PHOTO, BOTTOM: PELOTON



**CAN TECH
MAKE IT
MORE FUN
TO BREAK A
SWEAT?**

Technology is changing the way some Americans exercise. Smartwatches, apps, and even virtual classes and competitions are among the ways people are using it today to accomplish their fitness goals.

“Technology can help engage people in exercise more,” says Dori E. Rosenberg, Ph.D., a clinical health psychologist and an associate investigator with the Kaiser Permanente Washington Health Research Institute. For example, a virtual class that lets treadmill users compare their pace with

everyone else may challenge those who are bored by regular treadmill running.

The latest treadmills and ellipticals offer plenty of high-tech options to help motivate people, says Peter Anzalone, senior test project leader for fitness equipment at CR. Exercise equipment has long provided programmed workouts (such as “hills” or intervals), but internet connectivity has expanded the choices considerably.

“There’s a big trend toward providing ever different varieties

everyone can tolerate the pounding, especially on a hard surface.

If you're worried about stress on your joints, exercising on an elliptical might be a good way to get an aerobic workout without the impact of running or jogging, especially if you're looking for a higher-intensity activity. (For top elliptical picks, see "How to Choose the Right Machine," on page 76.)

For variety, try swimming, biking, group exercise classes, dancing, hiking, or sports such as tennis.

Make Every Minute Count

You can shave some time off your exercise routine by upping its intensity. You need only a minimum of 75 minutes of vigorous exercise per week. Even walking can be a vigorous workout if you pick up the pace, walk uphill, or increase the speed and/or incline if you're using a treadmill.

Remember that some activity is better than no activity. Studies have shown that even 20 to 60 minutes of moderate exercise once or twice per week will provide at least some health benefits. And a small study found that even 10 minutes of easy exercise seems to have a positive effect on brain function immediately afterward.

of workouts and being connected through a phone app or the internet, so you can track your workout history," Anzalone says. "Physicians can even 'prescribe' exercise and then monitor their patients to see how they're doing."

Some treadmills and ellipticals now offer program options via a monthly subscription, and many let you track your distance, speed, and even heart rate over time using an app.

The ability to join remote classes while at home is one of the more recent innovations.

Peloton popularized this trend with its stationary bike. And with its pricey new treadmill, The Peloton Tread, you can exercise live (or on demand) with an instructor who will take you through walking, running, and even strength-based workouts (the treadmill comes with hand weights.)

Fitness-tracking options are also becoming more common on exercise machines. Of our recommended treadmills, the NordicTrack Commercial 2450, Xterra TRX4500, and Bowflex BXT216 can

connect to fitness apps or internet-based programs to help you track your exercise progress.

Wearable activity trackers, such as the Fitbit or Apple Watch, track steps, heart rate, calories burned, and other workout stats, and even inexpensive apps that you can download to your smartphone offer basic activity-tracking capabilities.

Though simple fitness trackers might encourage increased activity and weight loss, experts caution that just wearing one or downloading a tracking

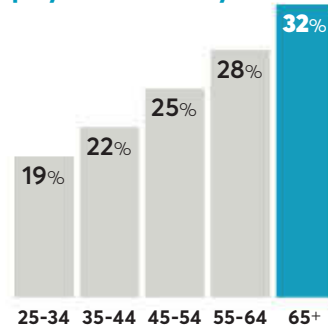
app to your smartphone isn't a magic bullet.

"On their own, these devices generally aren't enough to change behaviors," says Matthew Buman, Ph.D., an associate professor in the College of Health Solutions at Arizona State University. "You need education and support to really make it work."

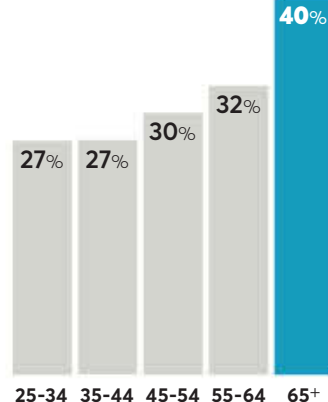
Studies have found that having a support network, such as an online group of people with similar goals, can make it easier to stick with healthy lifestyle changes.

WHO'S ON THE MOVE

Percentage of adults who don't engage in any leisure-time physical activity.



Percentage of adults who are aerobically active at least 5 hours per week, twice the minimum recommended.



Source: CDC.

Build Exercise Into Your Daily Life

Picking a cue that turns exercise into a habit can help you build a routine that you'll actually stick with. That could mean always jumping on the treadmill right after you brush your teeth or stopping at the gym on your way home from work each day.

Making a detailed, concrete plan rather than setting a general, overarching goal can also help you follow through, says Katherine L. Milkman, Ph.D., a professor at the Wharton School of the University of Pennsylvania and co-director of the Behavior Change for Good Initiative. "Block out in your calendar the dates and times you intend to work out this week," she says. One study found that people who joined a gym and went four times per week could develop a habit that stuck with them in as little as six weeks.

So try getting consistent exercise you really enjoy. "When you find ways to make exercise fun, you're more likely to do it than when you only focus on how it will be effective," Milkman says. You'll see improvements in your health and mood quickly, and before long you'll be asking yourself why you didn't start sooner.

GUIDE TO TREADMILLS AND ELLIPTICALS



HOW TO CHOOSE THE RIGHT MACHINE

You can get an equally good cardio workout on treadmills, ellipticals, and alternative motion exercise machines. Here's what to consider.

TREADMILLS Treadmills, which start at about \$500, allow you to walk, jog, or run, usually at a variety of speeds and inclines. A short, budget treadmill can be a fine space-saving choice, though people with longer strides should opt for a longer deck. Test any model you're thinking of buying to get a sense of the size, cushioning, and console configuration.

ELLIPTICALS Ellipticals, which start at about \$600, are lower-impact than treadmills and also allow for an upper-body workout. They're usually quieter than treadmills.

ALTERNATIVE MOTION EXERCISE MACHINES These specialty cardio machines, which we don't currently test, combine aspects of treadmills and ellipticals. Some let you mimic a running motion without the impact on your joints.

WHERE TO PUT IT Exercise equipment—particularly a treadmill—needs plenty of clearance on all sides (see "Treadmill Safety," at right). A folding treadmill can save space when not in use. But test the folding function before buying because a heavy deck can be difficult to raise.

SPECIAL FEATURES Some machines come with features like internet or mobile-app connectivity and interactive programs; simpler machines can save you money. Everyone should use heart-rate monitoring to get a sense of his or her level of exertion, says Peter Anzalone, a CR technician, but it doesn't have to be built into the machine.

TIPS FOR BUYING A USED TREADMILL

A used treadmill can be a smart, low-cost option, but only if you buy one that will last. Peter Anzalone, Consumer Reports' senior test project leader for fitness equipment, offers these tips to help you find one for the long run.

1. Don't buy from fitness centers. Commercial gyms may sell heavy-duty equipment, but it has probably been used up to 24 hours a day for years. Buying a treadmill from someone's home is

a smarter option. Chances are good that the machine hasn't seen as much action.

2. Inspect the belt. Examine the entire length for fraying, loose seams, or other signs of wear. Any

irregularity could mean that the belt needs to be replaced.

3. Test the motors. Without standing on the treadmill, run it through the full range of speeds, listening for any whining, straining, or other unusual sounds that could suggest a problem with the main motor. Then stand on the treadmill and put it through the full range of inclines, noting any rough transitions or

clunking as it goes up and down. They can be signs of a weak incline motor or broken gearing, respectively.

4. Review the warranty. Most frames are welded steel and have a lifetime warranty, Anzalone says. But warranties on parts and electronics can range from one to 10 years. The longer the warranty, the more likely that the equipment is built to last.

TREADMILL SAFETY

Between 1997 and 2014, almost 5,000 people ended up in an emergency room with a head injury from a treadmill accident. Here are six tips from CR experts to help you stay safe.

Give it plenty of space. Leave at least 2 feet of clearance on either side of a treadmill and 6 feet behind it to avoid falling into a wall or being wedged between the machine and a wall or a piece of furniture if you lose your balance.

Always use the safety key. It clips onto your clothing and stops the belt if you fall to prevent additional injury, such as friction burns.

Straddle the belt when you turn on the treadmill. This will keep you from getting knocked off your feet.

Never step off a moving treadmill. Let the belt come to a complete stop first.

Keep your head up. You're more likely to lose your balance when you're looking at your feet.

Maintain the machine. Lubricate it according to the manufacturer's directions, tighten loose hardware (only using manual tools), and wipe up any sweat—especially on the hand grips and controls—after use.



CR technician
Peter Anzalone

		Brand & Model	Overall Score	Price	Test Results				
Recommended	Rank				Ergonomics	Construction	Ease of use	Exercise range	User safety
RECOMMENDED NONFOLDING TREADMILLS									
	1	Sole TT8	84	\$2,500					
	2	Precor TRM 243	84	\$3,200					
	3	SportsArt T615	81	\$3,200					
	4	True M30	81	\$1,700					
	5	Landice L7 Pro Trainer	81	\$3,600					
RECOMMENDED FOLDING TREADMILLS									
	1	NordicTrack Commercial 2450	84	\$1,800					
	2	Bowflex BXT216	84	\$1,800					
	3	NordicTrack C1650	83	\$1,350					
	4	Spirit Fitness XT485	82	\$2,000					
	5	NordicTrack C990	77	\$1,050					
	6	Horizon Elite T9-02	77	\$2,000					
	7	3G Cardio 80i	77	\$1,800					
RECOMMENDED BUDGET FOLDING TREADMILLS									
	1	Nautilus T616	84	\$1,000					
	2	Sole F63	81	\$1,000					
	3	Xterra TRX4500	77	\$1,000					
	4	LifeSpan TR2000e	76	\$1,000					
	5	LifeSpan TR1200i	73	\$900					
RECOMMENDED ELLIPTICALS									
	1	Diamondback 1260 Ef	81	\$2,300					
	2	Sole E95S	76	\$2,200					
	3	Bodyguard E-40	75	\$2,100					
	4	Precor EFX 225	74	\$3,000					
	5	Schwinn 470	74	\$800					
	6	Landice E7 Pro Sport	72	\$3,600					
	7	Nautilus E616	71	\$1,000					
	8	BH S3Xi	71	\$1,800					
	9	Octane Fitness Q35X	68	\$2,200					
	All-Access or Digital members can find the latest ratings at CR.org/treadmills and CR.org/ellipticals .								

HOW WE TEST: **Ergonomics** is how well the machine accommodates the needs of different users. **Construction** considers design

choices and our perception of quality based on noise and feel. **Ease of use** indicates how easy it is to read the display and use the

programs and controls. **Exercise range** is how well each machine provides an effective workout for users of various fitness levels.

User safety assesses safety features such as stability, and for treadmills, emergency stop buttons and safety-key operation.



TURN UP YOUR

BRAINPOWER

6 steps to help you maintain—or even improve—your memory and thinking skills throughout your entire life.



Many of us assume that, like crow's-feet and love handles, memory loss is inevitable as we get older. But recent research—published in the journal *Cell Stem Cell*—suggests that older adults generate just as many new brain cells as younger people. “It’s good news because it proves that we can keep making memories and boost our health, no matter our age, especially if we embrace a healthy lifestyle,” says Zaldy Tan, M.D., M.P.H., medical director of the UCLA Alzheimer’s and Dementia Care Program.

Turn Up Your Brainpower



TIP

A produce-rich diet can provide you with antioxidants important for protecting brain cells over time.

The study did find that older adults' brains had less blood-vessel growth, which means a 70-year-old's brain probably doesn't function the same way as the brain of a 20-year-old, says Tan, who was not involved with the study.

Still, "as people move into their 60s and beyond, if they are proactive about their health—they exercise, eat right, manage their heart health, and in general keep their brain active—there's a good chance they can keep their brain sharp for decades," he says. Consider this expert advice.

Control Health Conditions

Some medical concerns associated with aging can affect the brain as well as the body. For instance, high blood pressure, especially in middle age, is linked to a higher risk of dementia later in life,

according to a 2016 American Heart Association statement. And a study published this past June in the journal *Nature Chemistry* suggests that high cholesterol can trigger the formation of amyloid-beta protein, a key player in Alzheimer's disease. Atrial fibrillation (AFib), a heart rhythm disorder common in older adults, has also been associated with dementia.

So work with your doctor to control blood pressure and cholesterol, and note that those with AFib who take a blood-thinning drug cut their risk of dementia by almost half, in a study published in 2017 in the *European Heart Journal*.

Sleep apnea has also been shown to increase amyloid-beta protein. If you snore loudly, frequently wake up with morning headaches, or find yourself nodding off during the day, it can be a good idea to make an appointment to see a sleep

specialist, says Thomas Wisniewski, M.D., director of the Center for Cognitive Neurology at NYU Langone Health.

Other conditions that could affect the brain include depression and hearing loss. See your doctor if you have feelings of sadness or inexplicable irritability that last for longer than two weeks. And if you notice difficulty hearing the TV or conversations in noisy places, get your hearing checked, Wisniewski says.

Get a Move On

Regular aerobic activity boosts blood flow to your brain and helps maintain the size of the brain's hippocampus, which is involved in memory and learning, Tan says. A 2016 study that Tan was involved in found that the more active older adults were, the larger their hippocampus. "The protective effects were highest in those over age 75, which suggests that it's never too late to start," Tan adds.

To get exercise's protective effects, you need 30 minutes of aerobic activity most days of the week, says Ronan Factora, M.D., program director for the Geriatric Medicine Fellowship at the Cleveland Clinic. That means working out at a level where you can say words such as "yes" or "no" but are unable to hold a conversation. For more smart fitness strategies, see "How to Exercise for Brain Health," on page 83.

It's also important to limit sitting, even if you get regular physical activity. Research published last April in *PLOS One* found that adults who sat for 3 to 7 hours a day had substantial thinning of their medial temporal lobes, which can be an early sign of impending dementia, says study co-author Gary Small, M.D., director of the UCLA Longevity Center.

Choose a Brain-Healthy Diet

Eating plans that are rich in produce, whole grains, legumes, and sources of

DO BRAIN-TRAINING GAMES REALLY HELP?

You may have heard that computerized "brain training" games can help to stave off cognitive decline. But a number of studies haven't found them to be very useful. Instead, participate in intellectually challenging and interesting activities that are new to you, such as learning to paint. "Whenever we learn something that's completely novel to

us, we form new brain connections," says UCLA's Zaldy Tan, M.D. Even inconsequential activities can bring real benefits. A large Chinese study of people 65 and older, published in *JAMA Psychiatry* in May 2018, found that those who regularly participated in intellectual activities such as reading books or newspapers, and playing board games, card games,

or mahjong, had a significantly lower risk of dementia over seven years of follow-up. Keep up social activities and connections, too. "Social isolation is another risk factor for dementia," Tan says. Volunteering is a particularly good option. Older adults who do so have a lower risk of dementia, according to a study published last year in *PLOS One*.

Turn Up Your Brainpower

healthy fats such as nuts, and low in high-fat proteins and processed foods, appear to have benefits for the brain.

For instance, a University of California San Francisco study published last year in the *Journal of the American Geriatrics Society* linked the Mediterranean diet—which focuses on fruits; vegetables; healthy fats, such as olive oil and fish; legumes; and whole grains—to a 35 percent lower risk of cognitive impairment in older adults. The study also found similar results with the MIND diet (a combination of the Mediterranean diet and the DASH diet, which is often recommended for those with high blood pressure).

And a study published in 2015 in the journal *Alzheimer's & Dementia* found that those who followed the plan most rigorously saw significantly slower cognitive decline than those who were less diligent.

“It makes sense that any diet that also helps to lower your blood pressure and cholesterol would help your brain, too,” Small says. “The healthy fats also reduce brain inflammation, while the antioxidants in many of the foods help protect brain cells from wear and tear.”

Be Mindful

Several studies have found that regularly practicing mindfulness techniques such as meditation and yoga helps reduce risk of dementia. One study published in 2016 in the *Journal of Alzheimer's Disease* found that people 55 and older who took a 1-hour weekly meditative yoga class and meditated at home for 12 minutes a day for three months had significant improvements in verbal memory (remembering word lists) and visual-spatial memory (such as the ability to find and remember locations).

These practices “help reduce stress, which is toxic to the brain,” Wisniewski says. But they may also help enhance production of brain-derived

neurotrophic factor—a protein that helps with the growth and maintenance of brain neurons.

Your brain can benefit from daily meditation, even if you do it for just 5 or 10 minutes, Small says. (Look for workshops at community centers or university medical centers to learn how to meditate.) If you can't—or you find that you don't have the patience to meditate—then doing something relaxing each day, even sitting in a park, can help, too.

Check Your Meds

Older adults take an average of 14 different medications a year, according to the National Academy of Sciences. But some meds, such as older antihistamines, anti-anxiety drugs, and narcotics, may impair memory. So review the medications you're taking—over-the-counter and prescription, along with dietary supplements—with your primary care physician each year.

Know When to Seek Help

It's normal to occasionally be forgetful, especially if you're under stress, Small says. And as you age, you may find that it takes longer to learn new information, that you don't recall recent events as well as you once did, and that you may forget where you put commonly used items such as car keys and eyeglasses.

See your doctor if you (or others) notice that you're doing one or more of the following: asking the same questions repeatedly; forgetting common words, such as “bed” and “car,” when speaking; mixing up words (saying “radio” instead of “TV,” for instance); taking longer and longer to complete familiar tasks, such as following a recipe; putting items in inappropriate places (such as car keys in the refrigerator); getting lost while driving to familiar places; and experiencing mood changes that occur for no reason.





HOW TO EXERCISE FOR BRAIN HEALTH

If you don't exercise now, it's easy to start. These tips can help you optimize your routine for maximum brain-boosting benefits.

TAKE A BRISK WALK

Build up from 10 minutes of walking a day until you get to at least 30, says Elissa Burton, Ph.D., a research fellow in the school of physiotherapy and exercise science at Curtin University in Australia. And if you can, pick up your pace. Getting your heart rate up will maximize the benefits to your brain, according to Helen Macpherson, Ph.D., a dementia research fellow at Deakin University in Australia. That means you should be exercising at an intensity where you start to find it difficult to have a conversation.

DO MORE THAN THE MINIMUM

The Centers for Disease Control and Prevention recommends that older adults get 150 minutes of this sort of moderately intense aerobic exercise each week, which is five 30-minute workouts. But the biggest boost in brain health in a recent study from the University of Canberra in Australia was linked to exercise sessions of 45 to 60 minutes.

TRY TAI CHI

This Chinese martial art, which consists of slow, rhythmic movements, is one of several types of exercise that have been tied to improved cognitive functioning. To learn the proper technique, it's best to seek out a local class. You can find instructors near you who are certified by the American Tai Chi and Qigong Association at americantaichi.org.

RESISTANCE TRAINING CAN HELP, TOO

Resistance training, exercise that causes muscles to contract, is meant to strengthen, but it may also help prevent cognitive decline. And you don't have to use weights or other equipment. Try body weight squats, choosing the stairs over the elevator, or taking a class at a local YMCA.

Flavor Boost!

Too much sodium in your diet can lead to high blood pressure and potentially harm your heart. Try these seasonings to add a healthy, tasty spin to your meals—no salt shaker required.



Turmeric

TASTE Pungent and slightly bitter, with an earthy aroma.

BEST USES See page 41 for the latest health information on turmeric. When cooking veggies, try tossing them in olive oil and turmeric before roasting, or make “golden milk” by simmering dairy or plant milk with a teaspoon of turmeric.



Basil

TASTE Slightly spicy and highly aromatic.

BEST USES With seafood, poultry, and vegetables—it even complements sweet summer fruit. Basil leaves are easily bruised, so tear them by hand. Or stack larger leaves together, roll into an oblong tube, then slice into ribbons.



Cilantro

TASTE It has a clean, slightly citrusy flavor and a cooling effect on the palate.

BEST USES An ideal balancing element in spicy dishes, it's often paired with Asian, Caribbean, and Latin American fare. Chop coarsely, and don't bother removing the stems.



Chili Pepper

TASTE The flavor depends on the type of pepper. It can range from bright and hot to fruity to smoky.

BEST USES Capsaicin, the compound that gives chili pepper its heat, may boost metabolism, increasing the ability to burn calories. It might also help suppress appetite.



Cinnamon

TASTE Complex and woody, with sweet and hot flavors.

BEST USES A daily half-teaspoon may help control blood sugar, cholesterol, and triglyceride levels in people with type 2 diabetes. Mix into your morning coffee, sprinkle over cereal, or include some in a spice rub for grilled meat.



Rosemary

TASTE Aromatic, with a mix of pine and lemony sweetness.

BEST USES Add to a marinade for grilled steak or chicken, or mix with potatoes before roasting. To separate leaves, run your fingers along the stem, pulling the leaves off in a downward motion. Discard the stem.

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