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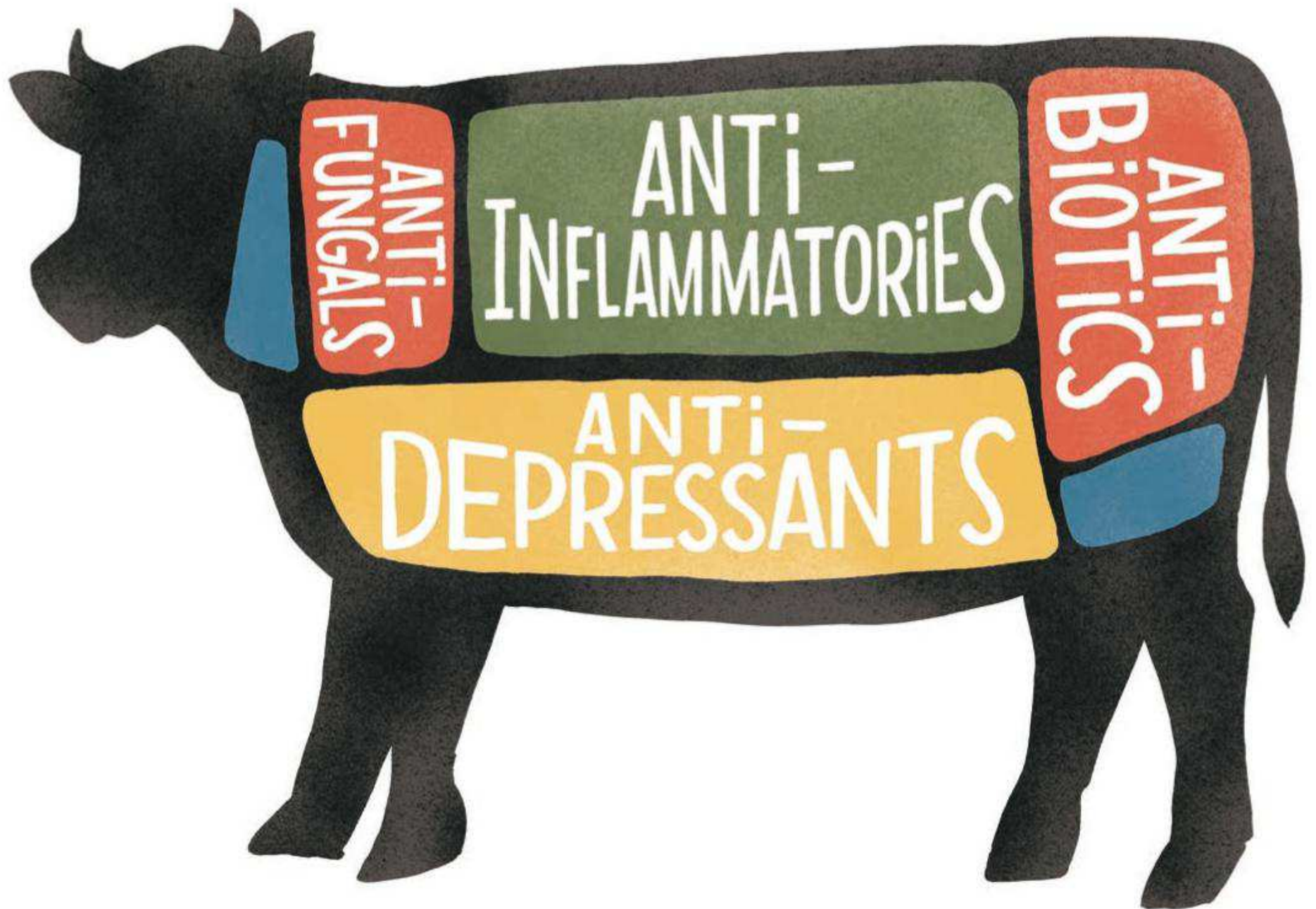
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OCTOBER 2018

REVIEWS & RATINGS

- Kia Sorento
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What's Really ^{*}in Your Meat?

^{*}Banned drugs have been detected in beef, poultry, and pork. How did they get there? And what can be done to keep them off our plates?

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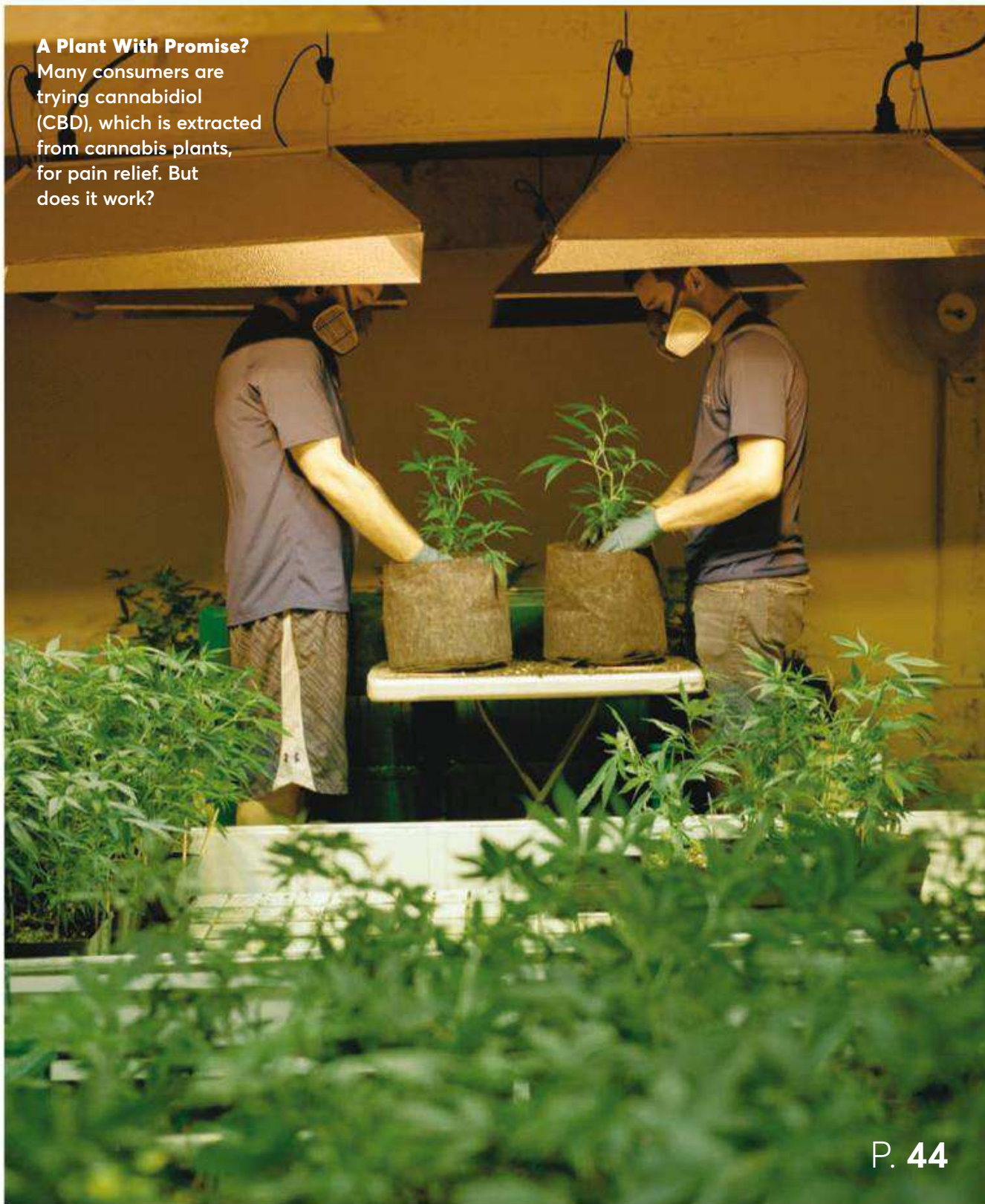


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A Plant With Promise?
 Many consumers are trying cannabidiol (CBD), which is extracted from cannabis plants, for pain relief. But does it work?

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Banned drugs have been detected in beef, poultry, and pork. We investigate how they got there, whether they pose health risks, and who needs to be held accountable. Plus, we test 50 packaged foods for lead, arsenic, and other dangerous metals.

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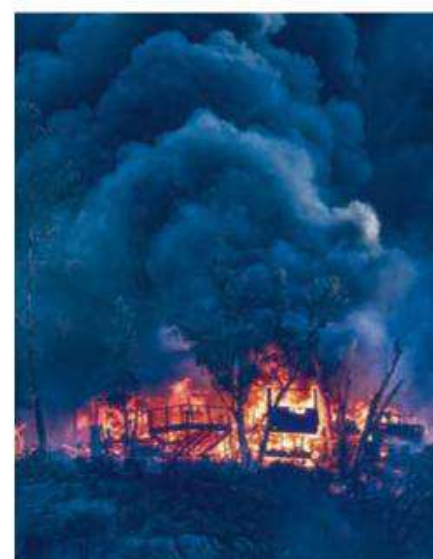
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Smart ways to tune up your home insurance coverage—before disaster strikes. And CR members share strategies for easing the claims process.

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PHOTO, TOP LEFT: LYNN JOHNSON/NATIONAL GEOGRAPHIC CREATIVE

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We unwrap 33 energy bars to rate them for taste and nutrition.



LÄRABAR
NUT & SEED
CRUNCHY
BAR DARK
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Is Our Food Supply Safe?



LAST MONTH, we introduced the first part of a new series taking a deep look into one of the most consequential—but often overlooked— aspects of our lives: the integrity of the food we eat. Too frequently, we remain in the dark about the quality or safety of what we’re consuming or using. Why should we be asked to accept food that may contain traces of potentially dangerous drugs—such as the anemia-linked chloramphenicol,

banned anti-inflammatory phenylbutazone, and hallucinogenic antidepressant ketamine—in the marketplace?

These prohibited drugs are among those that have been detected in the U.S. food supply, according to government data obtained by CR and analyzed by our experts. For this month’s cover story, CR pored over thousands of data points and interviewed farmers, scientists, regulators, and industry leaders to explore and better understand these revelations. We also tested 50 widely sold packaged foods for heavy metals such as arsenic and lead—which can carry significant consequences, especially for young children. At a time when nearly 50 million Americans get sick each year because of contaminated food, it’s critical that we remain vigilant, set firm standards, and go head-to-head with industry and government agencies when they fail to act with our well-being in mind. Rigorous, trustworthy information is essential to that effort—and we’re committed to delivering that to you, so you never have to make unsafe choices.

Marta L. Tellado,
President and CEO
Follow me on Twitter
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The Consumer Reports Annual Meeting is almost here. This year it will be held at 6 p.m. Oct. 10 at a location in New York. Please go to CR.org/annualmeeting for the exact place for this year’s meeting. Consumer Reports’ Board of Directors voted at its May 2018 meeting to approve amendments to certain provisions of the Consumer Reports bylaws. To see the revised bylaws, go to CR.org/bylaws.

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Beating Back Surprise Bills

WHAT'S AT STAKE

Some good news in the fight to end surprise medical bills: New Jersey is the latest state to pass legislation protecting consumers caught in a reimbursement battle between insurance companies and out-of-network doctors.

The law's target is so-called balance billing, in which patients are charged directly for any amount their insurance won't cover. This practice is especially common after visits to emergency rooms, where patients are often treated by doctors who aren't in their insurance networks—even at in-network hospitals.

The Out-of-network Consumer Protection, Transparency, Cost Containment and Accountability Act will protect New Jerseyans from surprise charges, including balance billing. It requires more disclosure from insurers and providers so that it's clear to consumers what their plans cover, ensures patients aren't responsible for excess costs if the services are medically necessary, and establishes an arbitration process to resolve disputes. The law, hailed as one of the nation's strongest, is estimated to save consumers almost \$1 billion a year and will go into effect this fall.

HOW CR HAS YOUR BACK

Consumer Reports' advocacy division has worked for years to combat surprise medical bills and balance billing. We were strong supporters of the New Jersey legislation, helping lead a broad coalition of groups pushing the bill and bringing consumers who'd been hit with surprise bills to the Capitol to meet with lawmakers. We've also helped pass legislation to protect consumers from out-of-network billing in California, Connecticut, Florida, New Hampshire, New York, and Oregon.

WHAT YOU CAN DO

Even if you don't live in a state with such protections, there are ways to fight surprise medical bills. You'll find a state-by-state list of resources at CR.org/states1018 and loads of tactical advice at CR.org/medicalbills.

Keeping Your Data Private

WHAT'S AT STAKE

A new California law shows how halting are ongoing efforts to protect consumers from the exploitation of their private data. Two steps forward may be followed by one step back.

On one hand, the state's lawmakers have passed some of the toughest privacy protections in the country. Slated to take effect in 2020, the California Consumer Privacy Act will guarantee consumers the right to know about, and opt out of, data collection; know how their

data will be shared with third parties; and have previously collected data be deleted upon request. And though the law applies only to California residents, companies affected by it are likely to decide that it's efficient to follow the practices nationwide. It could also spur other states to pass versions. California's 2002 data breach notification law led to similar legislation in all 50 states.

On the other hand, the new law contains several troubling elements. For one, it opens a possible loophole for companies to charge higher prices to consumers who decline to have their information sold to third parties. Further, it lets businesses avoid paying statutory damages for violations—if they stop within 30 days of being caught.

HOW CR HAS YOUR BACK

Though pleased with several provisions of the new law, CR advocates will be

urging legislators to make improvements—and to resist pressure to weaken it—before the law goes into effect.

WHAT YOU CAN DO

Check out our latest privacy advice, including simple steps to protect your data right now, at CR.org/privacy1018.

Preserving a Financial Forum

WHAT'S AT STAKE

When consumers can't resolve a dispute with their bank, credit card company, or financial services firm, they can turn to the Consumer Financial Protection Bureau (CFPB) for help.

Filing a complaint with the agency is a last resort for most consumers, but it has proved to be a remarkably effective way of getting results. Since opening its doors in 2011, the CFPB has handled more than 1.5 million complaints and got timely responses from financial companies 97 percent of the time.

But those complaints could soon be hidden from public view by CFPB acting director Mick Mulvaney, who has denigrated the database and suggested he might pull it from the agency's website.

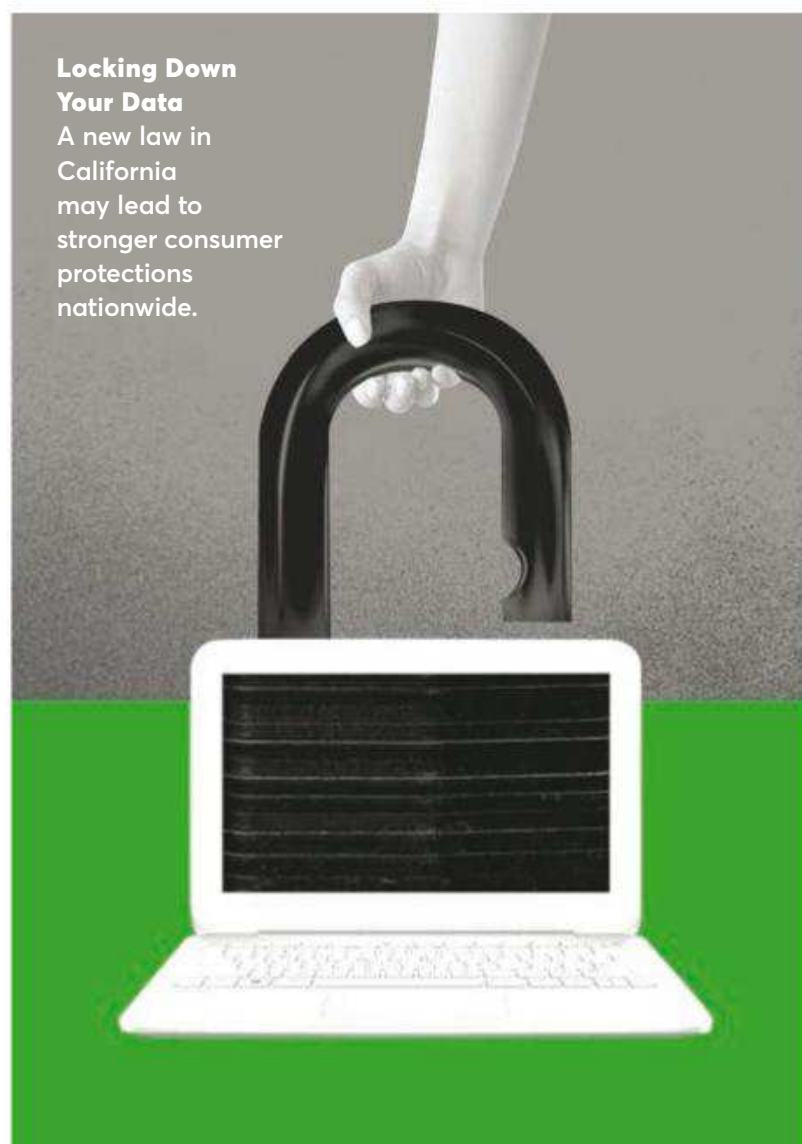
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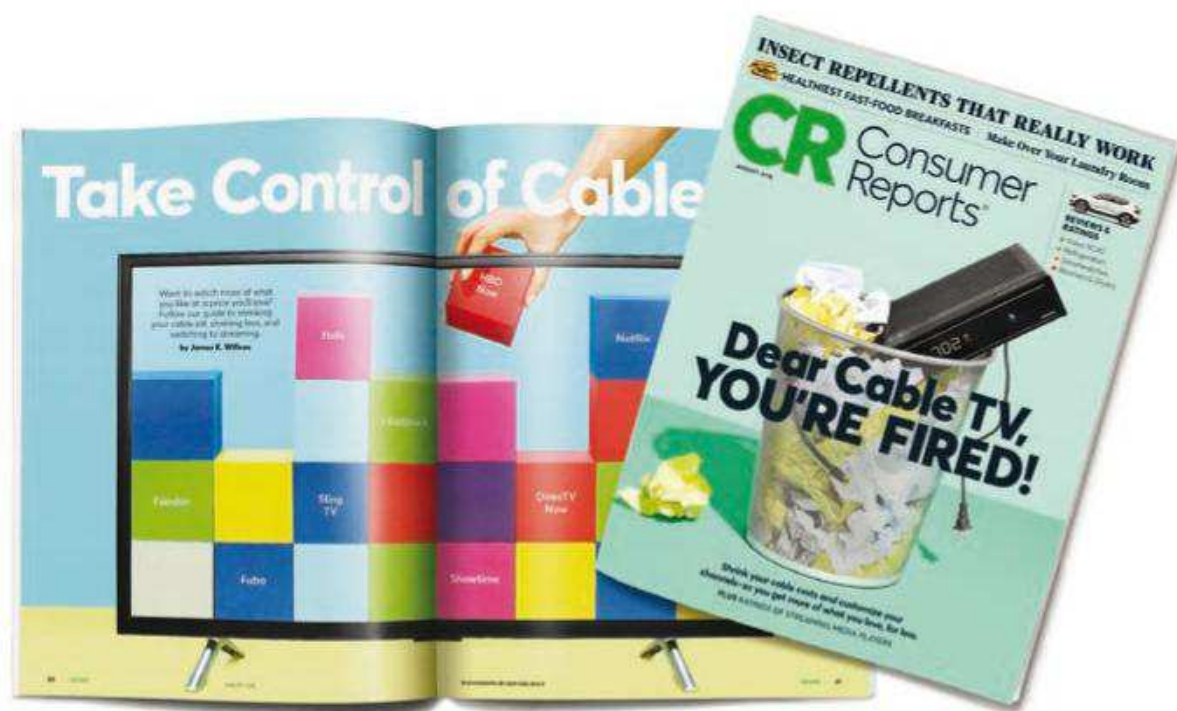
Maintaining the database shines a spotlight on real problems and encourages firms to be responsive. It also enables consumers to check whether a bank or other firm has received complaints and how disputes were handled.

That's why CR advocates have urged the CFPB to keep the complaint database public, both in written comments to the Bureau and in meetings with Mulvaney, CFPB officials, and members of Congress.

WHAT YOU CAN DO

Voice your support for the CFPB and its efforts to ensure financial fairness by signing CU's petition at CR.org/CFPB.





Our August cover story, **“Take Control of Cable TV!”** detailed ways to slash your cable bill, stream more content, or dump your cable company entirely—and many of you took action. To share your tips, go to [CR.org/cable1018](https://www.consumerreports.org/cable1018).

THANK YOU for this article! Since receiving my August issue two weeks ago, I have selected DirecTV Now to receive TV channels over the internet: Eighty-plus channels for \$50 per month. This morning I returned my cable-company equipment. I have a smart TV but purchased a Roku Express stick with the DirecTV Now app. I also purchased antennas for local airwave channels that used to be on cable. Some conveniences of the cable TV guide are missing. I will save \$63 a month.
—Cynthia Mahoney, Cape Coral, FL

YOUR AUGUST ISSUE was the best summation of information about cord-cutting I have read. However, one area not covered was the need for large amounts of data required for streaming, especially 4K streams from Netflix and other apps. Use of cable replacement services, along with YouTube, Netflix, Amazon, etc., will result in added costs for data plans. For example, Cox Cable includes 1 terabyte of data streaming with its internet packages but charges for an extra 500 gigabytes and unlimited data. That cost has to be factored in when one considers switching to content streaming.
—Arthur Weiss, Las Vegas

EDITOR'S NOTE While data caps (a limit on the total amount of data you are allowed to use in a month) exist, they aren't all that common. Even so, 1 terabyte is more than most people use in a month. Your broadband

speed—which determines how much data can be transmitted at any point in time—may matter more. To watch a 4K movie, you'll need a download speed of up to 25 megabits per second (Mbps). If you have a few devices simultaneously streaming movies in 4K, you may need speeds of 50 to 100 Mbps. Many providers will supply these speeds with their base rate; otherwise, you can pay to step up your plan.

I'D LOVE TO HAVE a cable to cut, but like many others, we live in a rural area and have no broadband of any kind. We're beyond cable and DSL; we get TV by satellite and data over a Verizon hot spot. We get one station on an antenna. Your article is predicated on having access to high-speed data and is basically useless to those in rural dead zones. It would be helpful if you advocated for basic internet for all.
—William Kunitz, Dresden, ME

I CUT MY MONTHLY BILL from \$185 to \$55. How? Simple. I replaced my cable with an antenna (cost: \$5). I ported my home phone to Google Voice (a one-time cost). I pay \$55 per month for high-speed internet. For movies and TV shows, I get DVDs from the library. Biggest benefit? Not the money, but I saved at least 3 hours per day watching TV.
—Arvind Aggarwal, Naperville, IL

I ENJOYED the extensive discussion about cable TV and the various antenna and streaming alternatives. What is not clear is an understanding of where to find 4K Ultra High Definition material. Many consumers are purchasing 4K Ultra High Def TV sets to use with whatever material is available. I subscribe to everything Comcast offers, and we enjoy download speeds of over 100 Mbps. But in all of the available content from Comcast Cable, the only 4K content is very cool but very limited. Nothing current. We connected our Amazon Prime access, where there is abundant 4K Ultra High Def content available. This should be considered a major benefit of membership.
—Michael Treister, Chicago

EDITOR'S NOTE You're right—you won't find 4K shows with HDR (high dynamic range) by flipping through cable channels or tuning in through an antenna. But this content is getting easier to find. The DirecTV and Dish satellite services offer 4K content, including some with HDR. And streaming services are adding more of these TV shows and movies all the time. Amazon Prime has many titles with 4K and HDR, and every new Netflix original series is shot this way. You can rent or purchase 4K HDR shows on iTunes and Vudu. One nice perk from Apple: If you've already purchased an eligible film in regular high definition in iTunes, the company will automatically upgrade it to the 4K HDR version at no extra charge.



WRITE

Go to [CR.org/lettertoeditor](https://www.consumerreports.org/lettertoeditor) to share your comments for publication.

AS A LONGTIME CORD-CUTTER, I enjoyed your article. I believe you left out an important piece of the puzzle, however. You can buy your own DVR for use with an antenna. This will give you guide data and makes it easy to find and record your favorite shows automatically. Readers could use reviews of over-the-air DVRs like Tablo and TiVo Roamio OTA.
—Ryan Flynn, Marshfield, MA

Tough Talk on Trucks

YOUR TRUCK SAFETY report, “Reducing the Risks of Big Rigs” (August 2018), was very interesting. Some thoughts: Your graphic about driving safely around semitrucks leaves out some important information. Many trucks have a sign that says, “If you can’t see my mirrors, I can’t see you.” This is an important safety point. Alphonso Lewis may train truck drivers to leave a cushion, but in my experience truck drivers are the worst offenders at tailgating. They routinely try to intimidate car drivers by getting very close. And they routinely drive very close to each other. Of course the vast majority of car drivers routinely tailgate, too. I still haven’t figured out any valid benefit to the offending driver, but there must be one since tailgating is so popular.
—John Toelken, Perrysburg, OH

YOUR ARTICLE ON truck safety overlooked something that big rigs could do to make the road safer for everyone: Add top-center brake lights on trailers and tractors. These are already required on other cars and trucks because they are easier to see than the lower brake lights on both sides. However, putting them on big rigs would notify you of a slowdown well ahead because you could see them much farther down the road.
—Art Friedman, Santa Paula, CA

THE ARTICLE on trucks was interesting, and for the

most part contained useful information. Except on page 62, where it stated “... efforts should focus on proven approaches, such as lowering the speed limit for trucks” This is the wrong approach to highway safety. The safest way for highway traffic to travel is when vehicles are moving at the same, or close to the same, speed. This reduces traffic conflict, thus reducing the opportunity for collisions.
—Thomas Beckett, Siloam Springs, AZ

YOUR ARTICLE MISSED a very important safety factor—tires. Many of the recapped tires (spent tires that have been repaired with new tread) on trucks are dangerous. There is typically no guard to keep them from flying into cars passing or following behind. Rural interstates contain thousands of tire pieces, any of which could have or maybe did cause an accident.
—Bob Stocker, Logan, UT

EDITOR’S NOTE *Large truck tires are designed to be recapped. The debris (called “road gators” in the industry) found on highways may include recaps but is as likely to be from new tires. The cause is often running on a flat tire (in a dual position) that a trucker doesn’t stop to change out.*

I AM A CLASS A CDL [a type of commercial driver’s license required to operate certain trucks] driver. Yes I have my stories of small cars piloted by myopic, self-centered, suicidal idiots, and I want to apologize for the obnoxious, life-threatening bullies who take advantage of their big trucks. I want to end speaking to the majority of drivers, who are team players: Our imperfect roads would not work without you.
—Andy Stewart, Franklin, OH

ON THE HIGHWAY I see many big rigs that drift outside of their lane. To stay safe, I do not pass trucks on a curve

ON BIG RIGS

I am a [commercial truck] driver. Yes, I have my stories of small cars piloted by myopic, self-centered, suicidal idiots, and I want to apologize for the obnoxious, life-threatening bullies who take advantage of their big trucks.

—Andy Stewart, Franklin, OH

or if there is not additional room to the left of my lane.
—Bruce Robinson, Doylestown, PA

Good Riddance, Robocalls!

THANK YOU for “Working to End Robocalls” (Building a Better World, Together) in the August 2018 issue. But I am shocked that you didn’t recommend Nomorobo. I signed up online and it saves me having to answer or ignore at least 12 robocalls per week.
—Barbara Alvine, Danville, CA

REGARDING YOUR ARTICLE: While that’s certainly an important goal, it would be better if the Federal Trade Commission would actually enforce the existing laws. New laws will do *nothing* if they are not enforced. And I would be *thrilled* to get 10 calls per month. I often get that many in a single day. I don’t answer them, but blocking all of the numbers is impossible, as they are spoofed to appear to be coming from local businesses or neighbors.
—Bruce Beaumont, Madison, AL

I APPLAUD CR’S EFFORT to stop robocalls, including support for legislative relief. Solutions aimed at blocking these calls may be useful, but I don’t think they target the real problem. Robocalls flood

our homes and businesses because they are so cheap to make. I’ve read that these calls cost as little as one-tenth of a cent. If these calls cost 10 cents each, volume would plummet. If phone companies are reluctant to raise prices (imagine that), perhaps governments could tax them for each annoying robocall they deliver. Calls in the public interest could be exempt from these charges.
—Joseph Anzalone, Deland, FL

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What We're Testing in Our Labs ...

In our 63 labs, we continually review and rate products. Here, timely picks for this month.

Air Purifiers

WE TESTED: 14 large-room models

WE TEST FOR: How well a model removes dust and smoke from the air on high and low speed settings, noise levels, and more.

ABOUT THE SCORES:

Median: 64
Range: 58-89

Top-Rated for Dust and Smoke

Blueair Blue Pure 211
\$200

89
OVERALL SCORE



Easy to Use and Change Filters

Honeywell HPA300
\$200

76
OVERALL SCORE



Breathe-Easy Price

Winix 5300-2
\$150

59
OVERALL SCORE



Leaf Blowers

WE TESTED: 19 models

WE TEST FOR: How quickly a model moves leaf particles, noise, ease of use, and more.

ABOUT THE SCORES:

Electric
Median: 57 Range: 36-82
Gas Backpack
Median: 76 Range: 61-89

Heavy-Duty Backpack for Extra-Leafy Lawns (Gas)

Stihl BR 350
\$350

89
OVERALL SCORE



Good for Midsized Leafy Lawns (Electric)

Toro UltraPlus 51621
\$100

82
OVERALL SCORE



Light-Duty for Clearing Off Decks and Drives (Electric)

Ryobi RY42102
\$40

80
OVERALL SCORE



Ask Our Experts

Is hearing protection really necessary while I'm leaf-blowing?



THERE ARE CERTAINLY differences in noise levels among model types, says Dave Trezza, who tests leaf blowers for CR. For example, gas leaf blowers—particularly backpack models—are the loudest and the cause for the most concern: Some can generate enough noise to risk hearing damage in as little as 2 hours. Although electric handheld models, such as the Ryobi above, are quieter, hearing damage is cumulative, so protection is still a good idea. Look for models that score well in our tests for noise at ear and noise at 50 feet, and when shopping for ear protection, “check the NRR (noise reduction rating),” Trezza says. “Most will have an NRR between 20 and 30, but the higher the number, the better.”

ILLUSTRATION: SERGE BLOCH

For the latest ratings of these and other product categories, readers with a Digital or All-Access membership can go to [CR.org](https://www.consumerreports.org).

Handheld Vacuums

WE TESTED: 11 models
WE TEST FOR: How well a model surface-cleans carpeting and bare floors, reaches tight spaces, picks up pet hair, and more.

ABOUT THE SCORES:
 Median: 69
 Range: 56-78

Bye-Bye, Pet Hair
 Black+Decker Flex
 BDH2020FL
 (15-min. run time)
 \$110

78
 OVERALL
 SCORE



Longest Run Time (30 Min.)
 Dyson V7 Trigger
 \$200

74
 OVERALL
 SCORE



Bargain for Bare Floors
 Bissell Pet Hair Eraser 33A1
 (corded model)
 \$35

71
 OVERALL
 SCORE



Single-Serve Coffee Makers

WE TESTED: 38 models
WE TEST FOR: How quickly a model brews the first cup, including heating the water reservoir, and subsequent cups; temperature; size; ease of use; taste; and more.

ABOUT THE SCORES:
 Median: 54
 Range: 20-75

Easiest to Use and Clean
 Cuisinart Premium
 Single-Serve Brewer SS-10
 \$150

75
 OVERALL
 SCORE



Nice Fit for Small Counters
 Nespresso Essenza Mini
 \$150

75
 OVERALL
 SCORE



Brews 2 Cups at Once
 Hamilton Beach FlexBrew
 Dual Single-Serve 49998
 \$75

66
 OVERALL
 SCORE



Wireless Noise-Canceling Headphones

WE TESTED: 8 home/studio models
WE TEST FOR: Sound quality, including tonal accuracy, clarity, detail, and more; how well a model reduces ambient noise; and more.

ABOUT THE SCORES:
 Median: 74
 Range: 64-87

Excellent Sound Quality
 Bose QuietComfort 35 Series II
 \$350

87
 OVERALL
 SCORE



Touch Controls on Earcup
 Sony WH-1000XM2
 \$350

75
 OVERALL
 SCORE



Rockin' Price
 Sennheiser HD 4.50 BTNC
 \$200

69
 OVERALL
 SCORE



Car Batteries

WE TESTED: 9 group 48 models*
WE TEST FOR: Battery life (how a battery endures repeated charge-and-discharge cycles), how long it can run a car if the charging system fails, and more.

ABOUT THE SCORES:
 Median: 65
 Range: 58-93

Unbeatable Battery Life
 Interstate MT7-48/H6
 \$260

93
 OVERALL
 SCORE



Great Performance for Less
 Bosch H6-760B
 \$140

85
 OVERALL
 SCORE



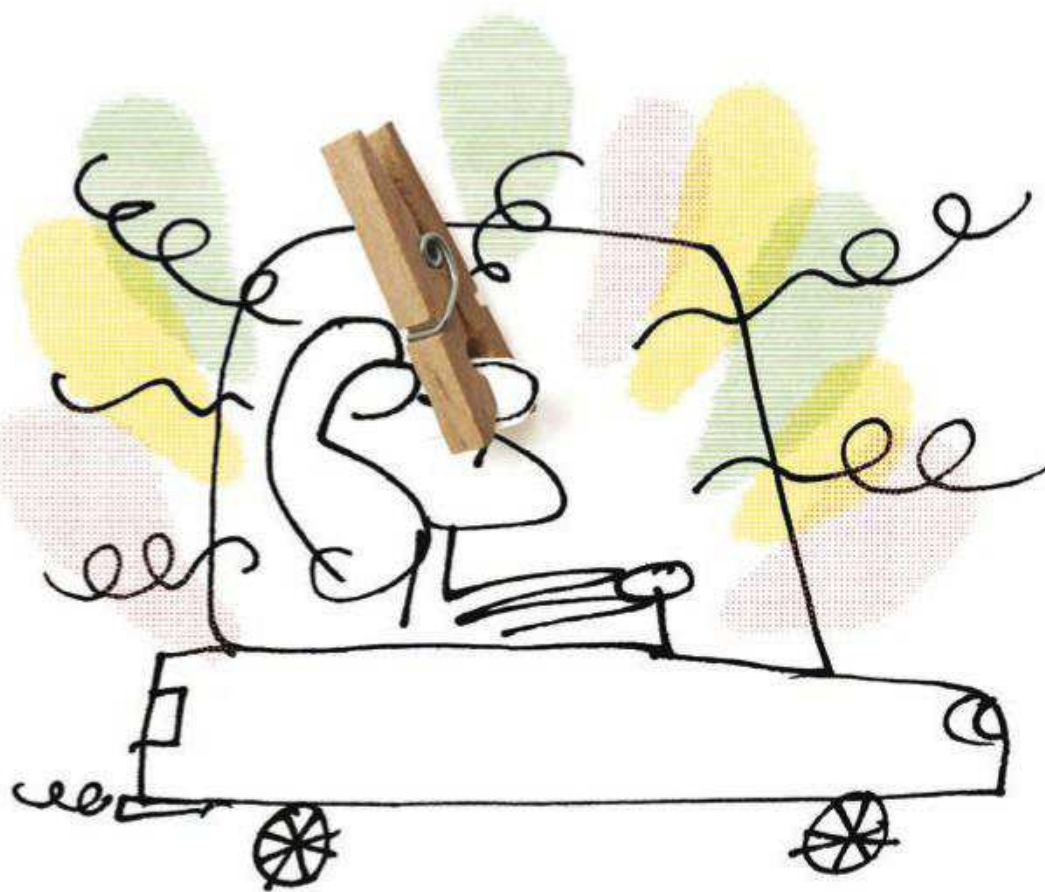
Good for Warm Climates
 DieHard Gold 50948 (South)
 \$150

80
 OVERALL
 SCORE



Note: We rate different products according to different testing protocols; as a result, Overall Scores of one product category are not comparable with another. *Different cars require different group-size batteries.

COMING NEXT MONTH Toaster Ovens and More



My car is starting to smell musty, and an air freshener isn't cutting it. What else can I do?

Before you try to mask any off-putting smell, investigate its source, says John Ibbotson, CR's chief mechanic. Mold, mildew, or even rotting leaves trapped somewhere in a car's vents are frequent causes of funky smells.

Follow your nose: If it leads you to your dashboard air vents, for example, check the cabin air filter (your manual will tell you where it is and how to remove it) to clear out leaves and other debris. You can buy a new filter online (about \$10 to \$50) and replace it yourself. You can also buy a professional-grade vent and duct cleaner spray for cars (about \$10) that will help kill any fungi hiding in your vents.

Just read the can's instructions.

If you have carpeted floor mats, moisture trapped underneath could be the source. Try treating them with a carpet cleaner, or for tougher smells, you can go to a pro for steam cleaning. Also consider rubber, all-weather mats to guard your footwells.

A sunroof might also be the culprit. Most have drains that look like small holes in the sunroof's track, which can get clogged with debris and cause water to leak into the fabric of the roof's liner (or onto seats). This may be as easy as vacuuming around the edges and at the drain opening.

Still smelly? Ibbotson advises going to a shop to check for more serious problems with the climate system.

Can I catch food poisoning from another person?

Sadly, the answer is yes. Just because you didn't eat the contaminated food yourself

doesn't mean you can't come down with food poisoning.

"There are almost always secondary incidents of sick people passing the virus or bacterium to others," says James Johnson, M.D., an infectious disease specialist and a professor of medicine at the University of Minnesota. But you can avoid it with a few preventative measures.

"When a sick person transmits E. coli or salmonella to someone around them, it's usually because the person didn't wash his or her hands properly after using the bathroom," says Sana Mujahid, Ph.D., manager of food-safety research at CR. Especially when it comes to viral illnesses, poorly washed hands can transfer viral particles to surfaces such as light switches and kitchen counters—and may end up in another person's mouth. (A smart tip: Wash with soap and warm water for as long as it takes to hum the "Happy Birthday" song twice.) Frequently disinfecting all common surfaces (counters, sinks, and doorknobs) can also go a long way toward isolating an outbreak in your household, Mujahid says.

How can I keep my leftover paint fresh enough to reuse?

It's possible for your leftover paint to last years—even a decade—or it can just as easily go bad in mere months. It all depends on how you store it, says Rico de Paz, the chemist and engineer who runs CR's paint tests.

To keep your paint fresh after use, press down on the lid and tap lightly with a hammer just around the rim, being careful not to dent the lid. Then flip the can upside down—this causes a little paint to drip down and help seal the lid closed.

And never store paint in an area it might freeze, such as a garage in the winter.

"But if there is only a little paint left in the can—maybe one-quarter to one-eighth full—it's better to transfer the paint into a small glass or plastic container with a tight-fitting lid," de Paz says. This will reduce the surface area of the paint and the amount of air inside so that the paint is less likely to dry out.

When you go to use it again, look for signs that the paint might be past its prime: "If the can is bulging or the lid is puffed up, microorganisms are eating the paint and giving off gas," de Paz says. Other signs that it's not usable: If you see a thick, rubber-like film topping the paint; if it's hard to mix; or if it doesn't stay uniformly blended 15 minutes after mixing.

Even if your paint looks fine, bear in mind that the paint on your walls may have faded over time, which would render stored paint too dark for touch-ups.



LEARN

We have more than 140 in-house experts who research, test, and compare. Submit your questions at [CR.org/askourexperts](https://www.consumerreports.org/askourexperts) ... and watch for the answers.

CR Insights

In the Know

Will Your Fridge Have a Long Life?

WE RELY ON OUR FRIDGES on a daily (even hourly) basis to keep our drinks cold, our lettuce crisp, and our eggs fresh. That's why our experts run extensive lab tests to help you find a fridge with the best combination of storage capacity, temperature control, efficiency, and ease of use. Performance scores on those measures are different from reliability and consumer satisfaction. But now we incorporate that data from our annual surveys into the Overall Scores for many products, says Simon Slater, manager of CR's Survey Research Group. As part of our 2017 Spring Survey, we asked CR members about the more than 73,000 refrigerators that they purchased new between 2007 and 2017. Based on the results, we found that many brands of French-door models (one of the most popular sellers) have only Fair or Poor predicted reliability within five years of ownership. The most basic top-freezer models, in general, are the most reliable as a category. If you're in the market for a new fridge, consider this brand intel as you shop.



LARGEST STORAGE CAPACITY

✓ Kenmore Elite 74113 \$2,850

85

FRENCH-DOOR BRANDS INCLUDE:

GOOD

KENMORE
LG
SAMSUNG

FAIR

AMANA
GE
IKEA
JENN-AIR
KITCHENAID
MAYTAG
WHIRLPOOL

POOR

BOSCH
ELECTROLUX
FISHER & PAYKEL
FRIGIDAIRE

INNER GLASS DOOR FOR EASY VIEWING
✓ Samsung RF28HDEDPPW \$2,500

85



COOL PRICE
\$ LG LFC24770ST \$1,710

83



EXCELLENT ENERGY EFFICIENCY
GE GNE29GSKSS \$1,830

79



ILLUSTRATION: CHRIS PHILPOT

Still Confused By ...

Ad Blockers

WEB ADS AREN'T like ads in a magazine. They come packaged with "tracking elements" (bits of code that may collect data about your device or what websites you visit) and potentially even computer viruses or other malware. They're also just plain annoying—as anyone who has ever done battle with a flashing pop-up ad knows.

No matter which web browser you use—even one that claims to have built-in ad-blocking, such as Chrome—it's smart to add a dedicated ad blocker: a downloadable computer program that works with your browser to block ads or trackers in an effort to better protect your digital privacy. The tricky part? There are dozens of free programs to choose from, and many have similar-sounding names, so consult our breakdown of three widely used options.



Adblock Plus

This very popular ad blocker is a good choice if your priority is to block annoying ads, as opposed to sites that track your online behavior. The Adblock Plus extension determines what to block based on a crowdsourced list of more than 83,000 pop-ups, ads that steamroll over content, and videos that play automatically. However, the program lets through some ads on its Acceptable Ads list. Don't want those either? In Chrome, select Options in the drop-down menu, then uncheck "Allow some non-intrusive advertising."



uBlock Origin

This extension employs the same crowdsourced blocking list as Adblock Plus, but it does so without any wiggle room: It blocks pretty much everything. By default, the extension also blocks elements focused on tracking data and known malware domains. Note that security experts we contacted recommend uBlock Origin over the similarly named uBlock. All three blockers work with Chrome, Safari, and Firefox, but only Adblock Plus and Ghostery work with Explorer; uBlock Origin does not.



Ghostery

A little more complicated to set up, Ghostery allows you to choose which types of trackers you want to block (advertising, social media, analytics). But you can simply check "Block Everything" or have the program determine what to block based on your browsing. It will also warn you if a potentially critical element, such as a comments section of a site, is being blocked, and it gives you options for addressing the problem.

For more digital privacy tips, turn to "Should You Still Like Facebook?" on page 40.

HOW WE TEST Cooktops

Many of our labs at CR contain hot stuff—perhaps none more so than the lab where we test gas and electric cooktops, including induction models. Among several crucial tests, we evaluate how well a cooktop performs on high heat. Using a pot with temperature sensors that extend down from the lid, we measure how quickly the largest burner on its highest setting can bring 4 liters of water to a boil. Next, our testers simmer a pot of crushed tomatoes, leaving the large burner on the lowest setting for 30 minutes, and monitor it. The ideal cooktop will keep it at a gentle quiver the whole time—not burn or boil the sauce. Last, on the cooktop's smallest or lowest heat burner, we test to see whether the heat is gentle enough for tasks like melting chocolate without burning.



CR test lead
Tara Casaregola

PHOTOS: BOTTOM, FROM LEFT: CHRIS WILLSON/ALAMY; CONSUMER REPORTS. ILLUSTRATION: CHRIS PHILPOT

CR Time Traveler CELL PHONES



1983 The FCC approves Motorola's DynaTAC 8000X, which the company calls "the world's first commercial portable cell phone." The first cellular call is made by the President of Ameritech.



1984 CR asks a key question about the growing market of mobile phones for cars: Is driving while on a phone safe? Nynex, a cell-phone company, tells us that many people drive with only one hand on the wheel anyway, and runs ads showing the photo above.



1997 Nearly 40 million Americans now use a cell phone, and specialized cellular stores are springing up across the U.S. But this all comes at a price: CR reports that a cellular call can cost 10 times more per minute than a conventional long-distance call and 60 times as much as some ads imply.

1993 Ten years after we began testing cordless home phones, CR starts testing cellular phones and reports that they were welcomed "faster than any other consumer electronics product." At 6x3x2 inches, the Fujitsu Pocket Commander (left) is one of the smallest and best we test.



Do More With ...

An Induction Cooktop

When you cook with a traditional electric cooktop, the burner needs to heat up, then transfer its heat to a pot—a step that an induction cooktop skips right over. Using an electromagnetic field from a special coil below the glass top, an induction cooktop transfers energy directly to a compatible magnetic pot or pan, which heats up almost instantly. (The cooktop will also respond quickly when you dial down the temperature.) In our tests, induction cooktops brought a large pot of water to a near-boil 2 to 4 minutes faster than other types of cooktops did. They also have a few handy safety features: As soon as you remove a pot, the heating stops, and if you happen to turn on an induction burner without a pot on it by mistake, it won't get hot. The drawbacks? Induction tends to cost more than electric (but you can find some models, at right, for less than \$1,000), and you'll need to use cookware marked "induction compatible." You may also notice a buzz or hum at higher settings, says CR test lead Tara Casaregola. "But a heavier type of pan (think cast-iron) might reduce the noise."

30-INCH

✓ **Samsung**
NZ30K7880UG/AA \$2,000

100

Top of the heat!

✓ **GE Café**
CHP9530 \$1,800

99

A sleek, near-perfect choice.

✓ **Frigidaire**
FFIC3026TB \$700

97

A boiling-hot bargain.

36-INCH

✓ **Bosch Benchmark Series** NITP668SUC
\$2,800

98

Five high-power burners (most have three or four).

✓ **Frigidaire**
FFIC3626TB \$950

97

A great price, and auto-senses the size of your pan.



2000 We test new digital cell phones, such as the Audiovox (below). Some even offer features like email and internet access. Several cities have upward of 100 wireless-service plans, and the average user now clocks 155 minutes of call time a month—up almost 40 percent in just two years.



2002 RIM introduces several BlackBerry models. The BlackBerry costs \$399 or \$499, depending on size, and has "a tiny keyboard [but] can handle long text messages," CR reports.



2007 The iPhone goes on sale in June; by September, Apple reports that 1 million have been sold. We test an iPhone, \$400, against two big rivals: the LG Prada, \$550, and the Nokia N95, \$750. The iPhone, we say, is the best "fun" smartphone we've tested so far.

2018 A Samsung (right) is one of our top-rated phones, with the iPhone X, \$1,000, not too far behind it.

✓ **Samsung**
Galaxy S9
\$720

81 OVERALL SCORE



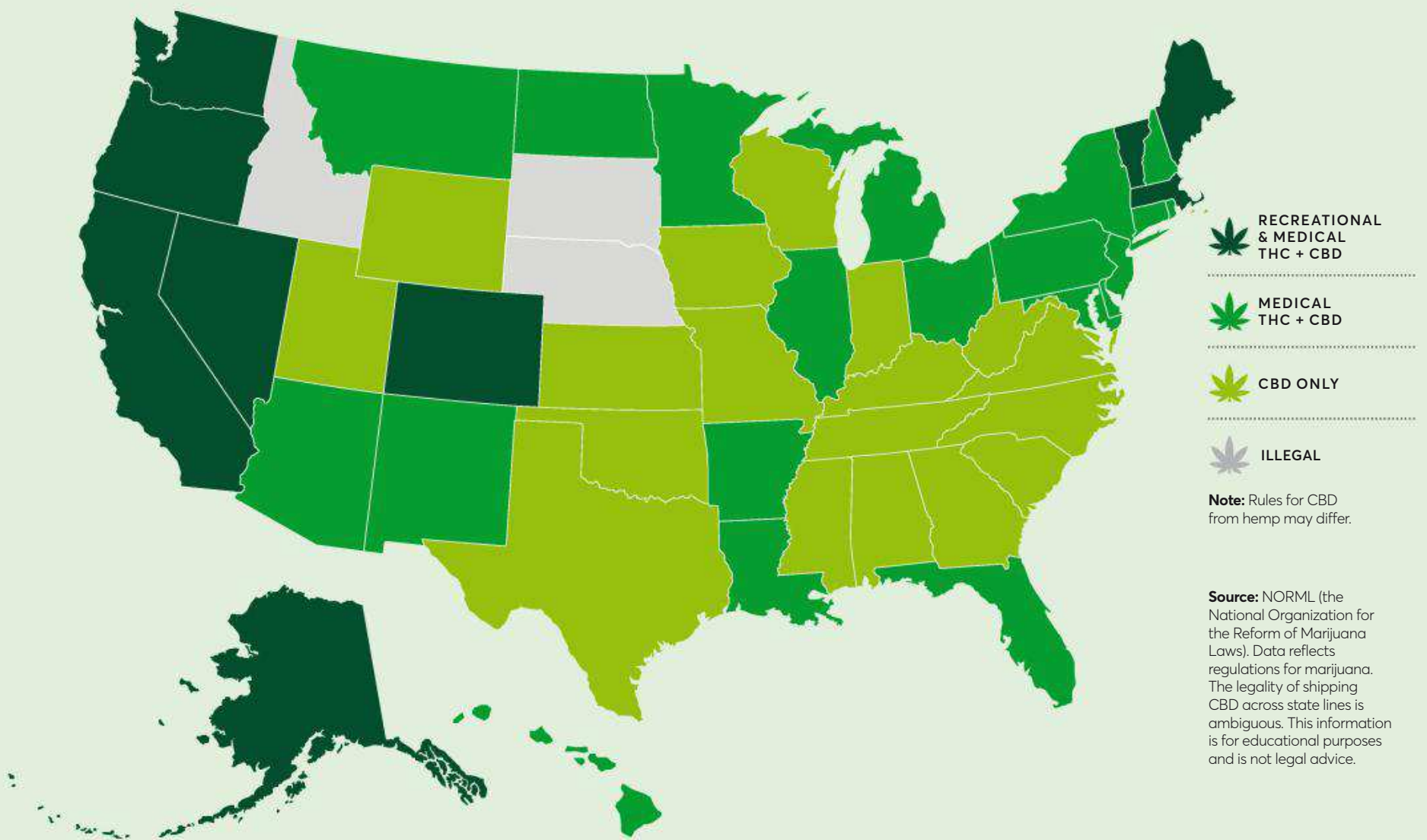
Map of the Month

Cannabis Laws by State

WHERE ARE CANNABIS and its pain-fighting extract CBD legal? In some states, all forms of cannabis are legal for both recreational and medical use. In others, only medical use is allowed. And in still others, only products that contain cannabidiol (CBD) alone are legal. CBD is a compound that, unlike THC (tetrahydrocannabinol), doesn't get users high but may have certain health

benefits. At the state level—see our map below—CBD is legal everywhere other than Idaho, Nebraska, and South Dakota. Every other state, plus Puerto Rico and Washington, D.C., has legalized CBD, either alone (18 jurisdictions) or with THC (31). Still, details vary from state to state, with many (at least officially) requiring a doctor's recommendation for medical use.

States also differ on the health problems that CBD (alone or with THC) can be used to treat—regardless of doctor permission. On the federal level, marijuana—including all byproducts, such as CBD—is currently illegal, even for medical use. For more about CBD for pain relief and other health conditions, turn to page 44. For an interactive version of our map, go to CR.org/whatiscbd1018.

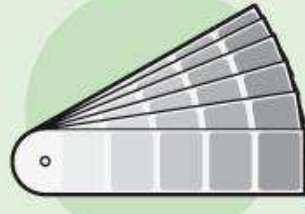


October Is THE BEST TIME TO BUY ...



Wall Ovens

In need of a new oven before the holiday season starts? Look now for deals on last year's models.



Interior Paint

Keep an eye out for good prices on paint during Columbus Day sales at home improvement stores.



Smoke Alarms

You may see promotional discounts tied to National Fire Prevention Week (Oct. 7 to 13).

WHAT 100 CALORIES LOOKS LIKE Halloween Candy

Giving out treats around Halloween is fun, but remember that bags of leftovers can mean scary calorie counts for you. The trick to keeping your candy consumption in check? Use our guide, and go to [CR.org/candy1018](https://www.consumerreports.org/candy1018) for more tips.



13³/₅ pieces
Brach's Candy Corn



4¹/₂
Hershey's Kisses



5 pieces
Starburst



2⁴/₅ pieces
Kit Kat



23
Sour Skittles



1/10
of one Reese's Peanut Butter Cup

INNERSPRING

✓ **Avocado Green**
\$1,399

85

SIDE-SLEEPER SCORES

Petite 
Average 
Large/Tall 



Product Spotlight

Mattresses for Side Sleepers

A WHOPPING 68 PERCENT of Consumer Reports members fall asleep on their sides, according to more than 61,000 respondents in a recent CR survey. If you're a side sleeper, too, you'll rest easier knowing that CR evaluates each mattress for side-sleeper support (in addition to many other tests). And because we know that a mattress can feel very different to different-sized people, our tests use human subjects of both small and large stature, breaking out separate scores for each type. We then average the results of those two scores to generate a score for average-sized side sleepers.

We observe several points along each subject's spine and measure how far they diverge from a straight line when the subject lies down on his or her side. For a mattress

to score well, the points must remain fairly parallel to the flat surface of the mattress.

"You might guess that softer mattresses would be better for side sleepers, but there are a few medium-firm models on this list that still provide very good support for side sleepers," says Chris Regan, the CR engineer who oversees mattress testing. And you can find good side support whether you prefer innerspring or foam—though some innerspring models work better for larger side sleepers, such as the Duxiana Dux, below.

If your bedmate isn't a side sleeper, though, you may want a mattress that scores well for all sleeping positions. Readers with a Digital or All-Access membership can compare more than 100 models at [CR.org/sleep1018](https://www.consumerreports.org/sleep1018).

INNERSPRING

Ⓢ **Denver Mattress Doctor's Choice**
\$580

76

SIDE-SLEEPER SCORES

Petite 
Average 
Large/Tall 

✓ **Duxiana Dux 1001**
\$4,950

73

SIDE-SLEEPER SCORES

Petite 
Average 
Large/Tall 

FOAM

✓ **Casper The Wave**
\$1,995

80

SIDE-SLEEPER SCORES

Petite 
Average 
Large/Tall 

Ⓢ **Tuft & Needle T&N Mattress**
\$575

74

SIDE-SLEEPER SCORES

Petite 
Average 
Large/Tall 



RECALLS

TO STAY INFORMED ABOUT RECALLS FOR YOUR VEHICLES, READERS WITH A DIGITAL OR ALL-ACCESS MEMBERSHIP CAN USE OUR FREE CAR RECALL TRACKER AT CR.ORG.



FORD VEHICLES

Ford is recalling approximately 504,182 2013-2014 Escape SUVs and 2013-2016 Fusion sedans because a faulty shifter cable bushing may allow the vehicle to roll away even though it appears to be in Park. If that happens, the vehicle might move unintentionally, Ford says.

What to do: Dealers will replace the shifter cable bushing at no cost. In the meantime, owners should use their parking brake whenever parking. For details, call Ford at 866-436-7332.

NOVARTIS AND SANDOZ PRESCRIPTION DRUGS

Novartis and Sandoz are recalling about 470,000 prescription drug blister packages because they do not meet child-resistant closure requirements as required by the Poison Prevention Packaging Act, and pose a poisoning hazard if swallowed by children. The various medications were sold at clinics and pharmacies nationwide from September 2016 through June 2018. For a complete list of medications included in the recall, go to us.sandoz.com/patients-customers/product-safety-notice or pharma.us.novartis.com/recall-zofran-and-entresto-packages.



What to do: Keep the blister packs out of sight and reach of children. Contact Sandoz or Novartis at 888-669-6682 for further instructions.

WORKBENCH LIGHTS

Baccus is recalling about 20,000 Stanley workbench LED light and power stations because they are wired incorrectly, which can result in reverse polarity, posing shock and electrocution hazards. The light and power stations were sold at Sam's Club stores and online at amazon.com from March 2017 through August 2017 for \$25 to \$40.

What to do: Stop using the stations and unplug the power cord. Call Baccus at 877-571-2391 or go to baccusglobal.com to get a free replacement or a full refund.



KIDS' PAJAMAS

Allura is recalling about 64,000 children's pajamas because they don't meet the flammability standard for kids' sleepwear, posing a risk of burns to children. The PJs were sold at stores and online from September 2017 to April 2018 for \$8 to \$13.



What to do: Do not allow children to wear the PJs. Call Allura at 866-254-3103 or go to alluraimports.com to get a refund.

IKEA BICYCLES

Ikea is recalling about 4,900 Sladda bicycles because the belt can break and pose a fall hazard. The bikes were sold at Ikea stores and on its website from August 2016 through January 2018 for \$400 to \$500.

What to do: Stop using the bicycle and return it to any Ikea store for a full refund. For more details, call Ikea at 888-966-4532 or go to ikea-usa.com. At the bottom of the page, choose Press Room, then select Product Recalls.



HELMETS

Helmets R Us is recalling about 9,700 Rollerblade-branded helmets because they fail to meet the federal safety standard, posing a risk of head injury. The helmets were sold to schools nationwide for use in PE programs from September 2011 through April 2018 for about \$16.

What to do: Stop using the helmet and contact Helmets R Us at 877-777-9287 or go to skateinschool.com to get a free replacement helmet.



MANDOLINE SLICERS



Premier Kitchen Products is recalling about 19,000 The Sharper Image and Frigidaire mandoline slicers because the small blades in the julienne attachment can separate from the plastic during food preparation and pose a laceration hazard. The nonelectric slicers were sold at stores and online from May 2017 through April 2018 for \$13 to \$20.

What to do: Stop using the slicer and call Premier Kitchen Products at 800-304-4035 or go to pkp-recall.com to get a refund in the form of a \$15 gift card.

KOHLER GENERATOR PART



Kohler is recalling about 6,600 automatic transfer switches for Kohler generators because they can fail and overheat, posing a fire hazard. The switches were sold at Kohler distributors and dealers from February 2012 through January 2018 for about \$530.

What to do: Immediately call an authorized Kohler service representative or Kohler directly at 800-892-7709 to schedule a free repair.

WIRELESS CHARGING PADS



Hirsch Gift is recalling about 21,000 CloudCharge Qi wireless charging pads for phones because they can overheat while being used and pose a burn hazard to consumers. The pads were given away as promotions to employees and customers of various companies from February 2018 to May 2018. The product name and model number T4706 are printed on the bottom of the product.

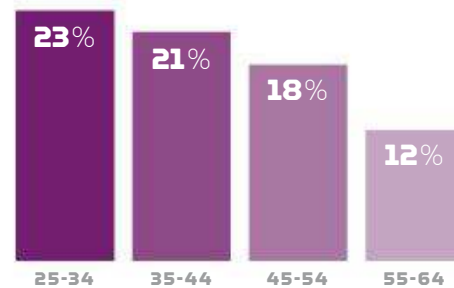
What to do: Stop using the charger and call Hirsch Gift at 877-220-4438 or go to hg-promo.com to get a free replacement.

Product Update

The latest ratings from our labs

Eating a Bar May Show Your Age*

PERCENTAGE OF BAR EATERS WHO ARE AGES:



*Note: Two-thirds of Americans eat bars.
Source: Mintel, 2018.

Crunchy, Chewy, Tasty ... and Healthy, Too?

Can you find an energy bar that isn't loaded with sugar? Do all the 'good-for-you' ones taste terrible? We scrutinized the market to serve up the best choices.

by Rachel Meltzer Warren



CRANBERRY ALMOND + ANTIOXIDANTS WITH MACADAMIA NUTS BY KIND
\$1.25

65

OVERALL SCORE



WILD BERRY PISTACHIO BY THIS BAR SAVES LIVES
\$2.00

59

OVERALL SCORE



INSIDE CR'S LABS

During our blind taste tests, panelists enter texture and flavor details into an electronic ballot.

THE FIRST ENERGY BARS were created in the 1960s for astronauts and were later dubbed “space food sticks,” for their easy-to-consume shape and function. Another iteration showed up (on earth) in the ’80s, marketed for long-distance athletes who needed something portable to keep them fueled. These days you don’t need to be on a mission to Mars or training for the Chicago marathon to be an avid energy-bar eater: Two-thirds of Americans consume them, according to market research firm Mintel.

Our hectic on-the-go lifestyles are one reason for bars’ popularity. “They’re a convenient, no-fuss way to satiate a craving or hunger,” says Consumer Reports nutritionist Ellen Kloss. Consumers say that they buy them as snacks, as an energy pick-me-up before or after exercise, or as a meal substitute if they are trying to diet. The bars are often marketed to these specific needs, but the fact is that you see the same ingredients in many bars, albeit in somewhat different quantities. In fact, if you’re not careful, you could end up with a choice that isn’t all that different from a candy bar.

So which are tops in nutrition and taste? We analyzed 33 bars.

What’s in Them?

Our most important discovery: Many bars don’t live up to the healthy impression on the packaging. Just six out of the 33 tested bars earned a Very Good rating for nutrition. In choosing a bar, look for one that has few, if any, added sugars (such as cane sugar, honey, or brown rice syrup) in the ingredients list. It should also have 150 to 200 calories, 3 grams of fiber, and 3 to 6 grams of protein. But you can’t just shop by the numbers; it matters which ingredients supply those nutrients.

In our ratings, Kloss says, bars with whole foods like nuts and dried fruit as their main sources of

BETTER THAN BARS

Whole foods can be easy to pack, too. If you want a truly healthy alternative to an energy bar and are willing to put in a smidge more time and effort, here are five suggestions.

Breakfast

YOU WANT: A mix of protein and fiber so that you’re satisfied until lunch.

TRY: 2 hard-boiled eggs plus 2 Wasa multigrain crispbread crackers.

Midday Snack

YOU WANT: Something sweet with fiber and protein, so you avoid the vending machine.

TRY: ½ cup fiber cereal (like All-Bran or Shredded Wheat) mixed into a 6-oz. container of plain Greek yogurt with ⅓ cup blueberries or 1 Tbsp. dark chocolate chips.

Before Exercise

YOU WANT: Carbs for quick energy about an hour before exercise.

TRY: 2 to 3 medjool dates.

After Exercise

YOU WANT: Carbs to replenish energy stores and protein to help repair muscles.

TRY: A small whole-wheat tortilla spread with 1 Tbsp. almond butter and ½ small banana, sliced, then rolled up as a wrap.

Mini Meal

YOU WANT: A serving of veggies and fruit, along with some “fill-me-up” protein.

TRY: ¼ cup hummus and carrot, celery, and bell pepper sticks. Keep refrigerated until you’re ready to eat. Serve with a small whole-wheat pita and an apple.

protein and fiber got higher nutrition scores than those with added protein from soy isolates, rice, or peas, or added fiber from chicory root or corn. “Adding these ingredients can make a bar seem healthy, but they are highly processed. It’s better to get your nutrients from whole-food ingredients because they also supply a variety of vitamins, minerals, and other healthy compounds,” Kloss says.

Protein is the nutrient most people pay attention to when choosing a bar, according to Mintel, probably because of marketing messages that leave many believing their diets are deficient in protein. But the majority of people don’t need to worry, Kloss says. “Most of us get an adequate amount in our regular diet, and with one exception [the two RxBars], the bars in our tests with more than 6 grams of protein almost always contained processed sources.”

Added sugars are another concern. Agave syrup, brown rice syrup, corn syrup, fructose, fruit juice concentrate, glucose syrup, honey, and tapioca syrup are among the sweeteners used in the bars we tested. “Though some of these may sound better for you than plain old sugar, they’re all added sugars and should be kept to a minimum in your diet,” Kloss says. “Better to choose a bar that has only fruit, or if it has added sugars, they’re toward the end of the ingredients list.”

How Do They Taste?

Another advantage of sticking with mostly whole-food ingredients: better taste. To wit, the bar that got our top taste score, Kind Plus Cranberry Almond + Antioxidants with Macadamia Nuts, had crunchy nuts, tart cranberries, and a sweet-but-not-too-sweet honey glaze. Alternatively, Quest Chocolate Peanut Butter Protein Bar, which got a Fair sensory rating, didn’t have much chocolate flavor and had a chalky, sticky mouthfeel.

Should You Bite on Health Claims?

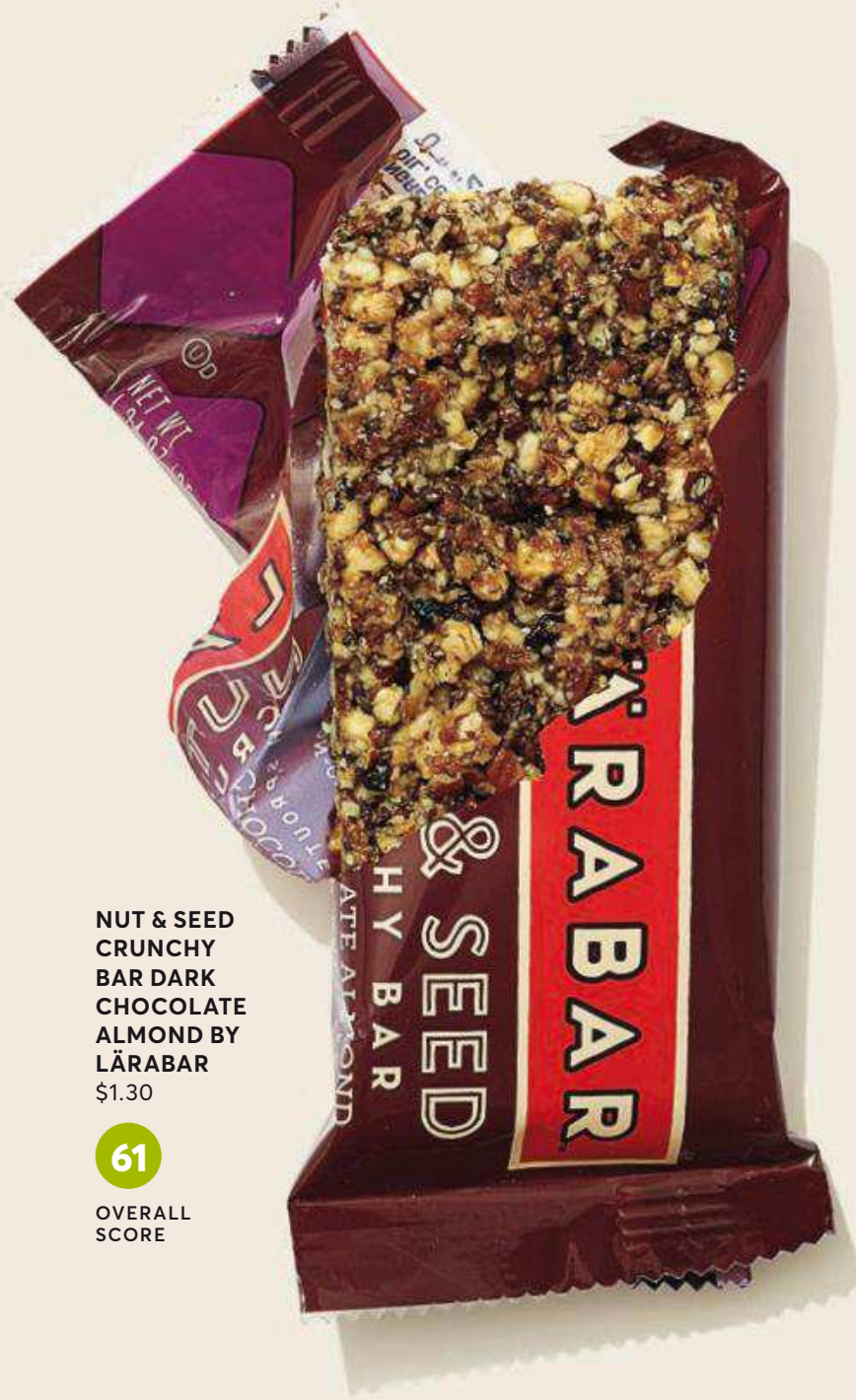
Energy bar labels are covered in claims, from “gluten free” to “non GMO.” We counted 31 different types of assertions on the labels of our tested bars that had to do with health, eating styles (such as vegan or macrobiotic), or sustainability—with the number of claims on some bars approaching a dozen.

The name of a bar can convey a health message, too. For example, This Bar Saves Lives may sound like it will save *your* life, but the name refers to the company’s pledge to donate “food aid to a child in need” with every purchase. RxBar makes you think prescription, but there’s nothing medicinal about it. And weight loss will obviously be on your mind when you grab a ThinkThin bar, but there are plenty of bars that have a similar nutrition profile and ingredients.

Here, we lay out what you need to know about the most common types of claims.

CLEAN/SIMPLE

These or similar claims are typically used when a product contains a limited number of—and mostly whole-food—ingredients. But these words don’t have any universal definition, nor should you conclude that they’re therefore free of processed ingredients. For example, though the label on Kind Plus Cranberry Almond + Antioxidants with Macadamia Nuts Bar says “ingredients you can see & pronounce,” it has some processed ingredients, such as chicory root fiber, glucose syrup, and soy lecithin.



**NUT & SEED
CRUNCHY
BAR DARK
CHOCOLATE
ALMOND BY
LÄRABAR**
\$1.30

61

**OVERALL
SCORE**

GLUTEN-FREE

The food doesn’t have gluten-containing ingredients, such as wheat, rye, or barley (gluten is a family of proteins found in those foods), but that matters only if you’ve been diagnosed with celiac disease or a gluten sensitivity. Otherwise, avoiding it hasn’t been shown to help with digestion, weight loss, or any other health improvement.

HIGH PROTEIN

If a product says “High in” or an “Excellent source of” a nutrient, it must—per Food and Drug Administration food-labeling rules—supply at least 20 percent of the daily value for the nutrient. “Good source of” means 10 to 19 percent. The Daily Value for protein is 50 grams. However, the protein can come from natural sources or processed ones; check the ingredients list.

LESS SUGAR

A food with this claim must contain at least 25 percent less sugar than the brand’s regular product or than a competitor’s product. Trouble is, 25 percent less may still be relatively high in added sugars. No added sugar means what it says, but the product can still contain naturally occurring sugars, for example, from fruit.

LOW GLYCEMIC

The glycemic index (GI) is a measure of how quickly and how high a food containing carbohydrates will raise blood sugar levels; low and slow is better. But many factors affect GI, and the claim is not regulated by the FDA. It’s possible for a manufacturer to alter the GI of a food by upping the fat content or by using added fiber or protein sources.

OMEGA-3s

Bars that have flax seed, chia seeds, or walnuts have a type of omega-3 called alpha-linolenic acid (ALA). Though it’s a healthy fat, there’s not enough evidence to say that eating foods with ALA is as good as getting your omega-3s from fish.

ORGANIC


A third of the bars in our test were certified organic by the Department of Agriculture (USDA). This means that at least 95 percent of the ingredients are certified organic. They can’t be grown with harmful chemical pesticides, and there are rules about the ingredients that can be used and the way they’re processed. For example, artificial colors, flavors, or preservatives; or genetically modified ingredients (GMOs) aren’t allowed. And organic ingredients can’t be processed with hexane, a solvent used to extract oil from crops (such as soy or corn) and to make soy protein isolate. Hexane is an air pollutant and can damage the brain and nervous system. Still, organic doesn’t de facto make the bar healthy; organic products can contain a lot of sugars and processed ingredients, such as added protein or fiber.

MADE WITH ORGANIC

This means that 70 percent of the ingredients are certified organic. If used, the individual ingredients must be specified, such as “made with organic oats and raisins” (the manufacturer can choose up to three to feature). The other 30 percent of ingredients can’t be artificial colors, flavors, or preservatives, or GMO, but the product can contain ingredients grown with synthetic pesticides or processed with hexane.

NON-GMO PROJECT VERIFIED

The standards required for the use of this seal include testing to verify that the ingredients are non-GMO. (Organics can’t contain GMOs.)

Ratings  **Bar Wars** Our testers tried 33 bars in two popular categories—berry-nut and chocolate-nut—rating them for nutrition and taste. Nutrition scores, which include an evaluation of ingredients, make up 60 percent of the Overall Score.

Recommended	Product	Overall Score	Rating		Nutrition Information									Price	Flavor & Texture Description
			Nutrition score	Sensory score	Serving size (oz.)	Calories	Fat (g)	Saturated fat (g)	Protein (g)	Carbohydrates (g)	Fiber (g)	Sugars (g)	Sodium (mg)		
BERRY BARS															
✓	Pure Organic Wild Blueberry Fruit & Nut Bar	72	↑	↑	1.7	180	6	1	3	31	3	25	0	\$2.00	Soft, moist, and dense, with whole blueberries and nut pieces. Sweet and tangy. Tastes mostly of dates.
✓	Kind Plus Cranberry Almond + Antioxidants with Macadamia Nuts Bar	65	↓	↑	1.4	190	13	1.5	4	18	5	8	20	\$1.25	Plentiful whole roasted almonds, dried cranberries, macadamia nuts, and crisps. Honey glaze adds sweetness but is a bit sticky. Very crunchy texture.
✓	Lärabar Fruit & Nut Bar Blueberry Muffin	62	↑	↓	1.6	190	9	1.5	3	26	3	18	0	\$1.00	Soft and dense, with blueberries and soft cashew pieces throughout. Tastes mostly of dates. Slightly sweet and sour.
✓	Health Warrior Chia Bar Acai Berry	61	↑	↓	0.88	100	5	0.5	3	14	4	5	45	\$1.10	Moist and dense, with a lot of crunchy seeds. Sweet and tangy fruit flavors. Notably small.
	Nature's Path Organic Superfood Blueberry Cashew Snack Bar	60	↓	↑	1.3	190	11	5	5	18	4	7	10	\$1.80	Moist and soft, with cashew and pumpkin seeds throughout. Big coconut and mild blueberry flavors.
	This Bar Saves Lives Wild Berry Pistachio	59	↓	↑	1.4	160	7	0.5	4	24	7	8	80	\$2.00	Crispy rice pieces, almonds, dried cranberries, and blueberries. Big fruit flavor; on the sweet side. Held together loosely by honey glaze.
	RxBar Protein Bar Mixed Berry	57	↑	↓	1.83	210	7	1	12	25	5	14	115	\$2.20	Very dense, tough, chewy bar that sticks to your teeth. Tart berry and candylike flavors overpower nuts. Sweet and slightly sour.
	The GFB: Gluten Free Bar Cranberry Toasted Almond	51	↓	↓	2.05	240	10	1	12	29	4	14	95	\$2.30	Dense, slightly tough bar, with soft nut bits and cranberry pieces. Big almond extract (cherrylike) flavor. Bitter and slightly chalky.
	Luna Whole Nutrition Bar Blueberry Bliss	51	↓	↓	1.69	190	6	2.5	7	27	2	10	105	\$1.80	Chewy oat granola, with blueberry-apple jam. Very sweet and fruity flavor. Grainy texture.
	GoMacro Macrobar Blissful Daybreak Blueberry + Cashew Butter	51	↓	↓	2.3	270	10	1.5	10	36	2	11	35	\$2.90	Soft and dense, with blueberry and cashew pieces. Slightly sweet with a mild nut flavor. Slightly chalky.
	Nature Valley Trail Mix Cranberry & Pomegranate Chewy Granola Bar	50	↓	↓	1.1	130	2.5	0	2	24	1	6	70	\$0.70	Slightly tough and chewy, with some whole almonds and dried cranberries. Sweet, slightly sour, and very slightly bitter.
	Clif Bar Organic Blueberry Almond Butter Energy Bar	42	↓	↓	1.76	230	11	2	7	27	2	10	150	\$1.80	Soft, slightly crumbly and chalky. Slight nut-butter flavor. Perfumey blueberry flavor dominates. Sweet and slightly bitter.
CHOCOLATE BARS															
✓	Nature's Path Organic Superfood Dark Chocolate Peanut Snack Bar	63	↓	↑	1.3	190	10	5	5	20	5	8	105	\$1.80	Soft and moist, with lots of coconut shreds, chocolate chunks, and soft peanuts. Sweet overall with a mild peanut flavor.
✓	Lärabar Nut & Seed Crunchy Bar Dark Chocolate Almond	61	↓	↑	1.24	200	15	4.5	5	13	4	7	45	\$1.30	Crunchy, with finely chopped almonds, dark chocolate, and seeds. Slight coconut flavor. A bit dry and crumbly.
	Kind Peanut Butter Dark Chocolate Bar	60	↓	↑	1.4	200	13	3.5	8	16	3	9	40	\$1.25	Crunchy, with big peanut and chocolate flavor. Firm and chewy, with crispy bits.
	Pure Organic Peanut Butter Chocolate Ancient Grain & Nut Crispy Bar	60	↓	↑	1.23	160	9	2	5	18	2	8	85	\$2.00	Crispy bar, with plentiful peanuts, grains, and seeds. Chocolate and big peanut flavor. Somewhat sweet.
	Kind Protein Double Dark Chocolate Nut Bar	59	↓	↑	1.76	250	17	4	12	17	5	8	125	\$1.70	Crunchy, with roasted peanuts, almonds, and crispy bits. Sweet and salty. On the large side.
	RxBar Protein Bar Peanut Butter Chocolate	58	↑	↓	1.83	210	10	2	12	22	4	13	240	\$2.20	Very dense bar, with unsweetened dark chocolate chips and tiny, chewy peanut pieces. Slightly sweet and sour. Quite sticky.

Recommended	Product	Overall Score	Rating		Nutrition Information									Price	Flavor & Texture Description
			Nutrition score	Sensory score	Serving size (oz.)	Calories	Fat (g)	Saturated fat (g)	Protein (g)	Carbohydrates (g)	Fiber (g)	Sugars (g)	Sodium (mg)		
	CHOCOLATE BARS <i>Continued</i>														
	Clif Bar Organic Chocolate Peanut Butter Energy Bar	56	↓	↓	1.76	230	11	2.5	7	26	3	9	150	\$1.80	Soft, with oat pieces and a lot of peanut butter filling. Slightly sweet; dark chocolate flavor. Very slightly bitter.
	This Bar Saves Lives Dark Chocolate & Peanut Butter	56	↓	↑	1.4	190	10	2.5	4	22	6	7	110	\$2.00	Sweet and salty with roasted peanuts, honey, and chocolate. Crunchy; lots of crispy bits.
	Fiber One Chewy Bars Oats & Chocolate	55	↓	↑	1.4	140	4.5	2	2	29	9	8	90	\$0.60	Chewy. Has balance of oats and chocolate flavor, but quite sweet.
	Kellogg's Special K Nourish Chewy Nut Bar Chocolate Almond	55	↓	↑	1.16	170	10	3	4	17	2	9	60	\$0.65	Chewy, with crunchy roasted almonds and peanuts, and chocolate chunks. Quite sweet, with slight coconut flavor.
	GoMacro Macrobar Protein Purity Sunflower Butter + Chocolate	54	↑	↓	2.3	260	8	2	10	38	3	9	80	\$2.90	Dense and slightly tough, with crispy pieces throughout. Little sweetness or chocolate flavor, with slight sunflower seed flavor. Chalky.
	Luna Rica Chocolate Peanut Butter Fruit & Nut Bar	52	↓	↓	1.41	160	8	2.5	4	22	3	17	125	\$2.00	Soft, with peanut butter filling. Little chocolate flavor. Slightly bitter and chalky.
	Kirkland Signature (Costco) Nut Bar Almonds, Cashews and Walnuts	52	↓	↑	1.41	210	16	3	6	14	7	6	110	\$0.60	Crunchy, with almonds, cashews, walnuts, and sunflower seeds. Sweet and slightly salty. Big nut flavor. Slightly dry.
	The GFB: Gluten Free Bar Chocolate Peanut Butter	50	↓	↓	2.05	240	11	3	12	28	4	14	65	\$2.30	Dense and slightly tough, with crispy rice and peanut bits. Not much chocolate flavor. Dry and slightly bitter.
	NuGo Organic Dark Chocolate Almond Protein Bar	50	↓	↓	1.76	190	5	3.5	10	26	3	13	60	\$1.85	Gritty, with crispy soy and crunchy almond bits. Chocolate has a cherry note. Slightly bitter. On the large side.
	ThinkThin Protein Nut Bar Dark Chocolate	48	↓	↓	1.4	190	12	2.5	9	16	3	8	115	\$1.75	Hard, dry, and crumbly blend of almonds and sunflower and pumpkin seeds. Mild chocolate flavor. Tastes somewhat stale.
	PowerBar Plant Protein Snack Bar Dark Chocolate Peanut Butter	46	↓	↓	1.76	230	14	3.5	11	22	7	10	150	\$2.40	Crispy and chewy, with peanuts, pumpkin seeds, and a lot of crisps. Sweet, with mild chocolate and slight butterscotch flavors.
	Oatmega Grass-Fed Whey Protein Bar Chocolate Peanut	45	↓	↓	1.8	200	7	2.5	14	22	7	5	120	\$2.00	Dry and crumbly, with chocolate chips, crisps, and peanut bits. Little chocolate flavor and a nonfat dry milk taste. Slightly bitter.
	Quest Chocolate Peanut Butter Protein Bar	41	↓	↓	2.12	170	4.5	1	20	25	15	0.5	220	\$2.10	Dense and sticky. Not much chocolate flavor; slightly bitter. Tastes very processed, like it was made in a lab. Slightly chalky.
	Nature Valley XL Chewy Bars Protein Peanut Butter Dark Chocolate	40	↓	↓	2.12	290	18	5	15	21	8	11	250	\$0.60	Chewy texture with crunchy peanuts, peanut butter, soy crisps, and chocolate. Big peanut flavor, but quite sweet. Gritty, slightly bitter. On the large side.
	Balance Chocolate Peanut Butter Nutrition Bar	40	↓	↓	1.76	210	7	4	14	22	1	17	150	\$1.40	Dense chocolate-coated nougat-style bar. Moderately sweet, with soy and dry milk flavors. Slightly bitter.

HOW WE TEST: CR evaluated 33 snack bars (12 berry-nut and 21 chocolate-nut) for nutrition, sensory quality (using our trained sensory panel), and price. Products were selected to represent nationally distributed brands as well as new

product introductions based on market information. We calculated the **Nutrition score** based on calories per gram of food, total fat, saturated fat, fibers, sugars, and sodium. We also factored in the presence or absence of processed ingredients

(e.g., protein isolates) and whole-food ingredients (e.g., nuts, fruit). Products with more whole foods were given more points than those with more processed ingredients. USDA organic products were also given more points than those that

were not, because a USDA organic claim specifies standards regarding ingredients, how they are processed, and whether they are allowed in a product.

Make Your Home a Little Smarter

Not ready to outfit your house with every smart device on the market? We show you the basics you'll need to help your home to start thinking for itself.

by **Allen St. John and Daniel Wroclawski**

WITHIN JUST THE past few years, “smart,” or internet-connected, devices and appliances have made it possible to peek into your fridge while you are at the supermarket, have your washer alert you by phone when the spin cycle is done, and unlock your front door from anywhere in the world.

Not everyone wants to receive messages from their washing machine, but chances are very good that most American households will be using some sort of smart device in the near future: According to a Consumer Technology Association report, sales of smart speakers, such as the Amazon Echo and Google Home, soared from 7.2 million units in 2016 to 27.3 million in 2017 and are projected to reach 39.2 million this year. A report by Juniper Research predicts that the number of smart speakers in U.S. homes will reach 175 million by 2022.

Amazon started the smart-speaker revolution in 2014 with the Echo, and its smart speakers remain the most widely sold. But Google has eroded Amazon's market share with its Google Home speakers, and Apple joined the fray in 2018 with its high-end HomePod.

What Smart Speakers Can Do

Like most smart devices, smart speakers connect to the internet, and like a

smartphone, they also have a personal digital assistant (Amazon Alexa, Apple Siri, or Google Assistant) that responds to direct verbal commands.

Smart speakers can tell you the weather forecast, provide driving directions, and answer simple questions. (“Alexa, who was the seventh president of the United States?”) You can ask a smart speaker any question you'd type into a search bar on a computer, which makes the devices convenient for a wide swath of consumers, including those who are unable to type, as well as cooks who want to mute the Mozart while they're up to their elbows in raw chicken. (If you're concerned about privacy and how your personal data could be used, shared, or stolen, remember that many requests for information are routed through the internet.)

Smart-speaker owners can also tap into thousands of free or inexpensive applications that range from amusing but frivolous (a Shakespearean Insult Generator) to potentially life-saving. (Ask My Buddy will call and send a text to alert a family member or another contact when the user needs help but is unable to call on his or her own.)

Consumer Reports testers, who completed our first smart-speaker ratings this spring, report that the

digital assistants largely deliver what they promise. “The smart speakers we tested ranged in versatility from Good to Excellent,” says Elias Arias, who heads CR's smart-speaker testing program. “But new users do have to navigate a learning curve,” he says. While “natural language” commands typically work well, some apps require you to use specific phrases. Users must also begin their command or question with a keyword or a phrase such as “Alexa” or “Hey, Google” for the device to respond.

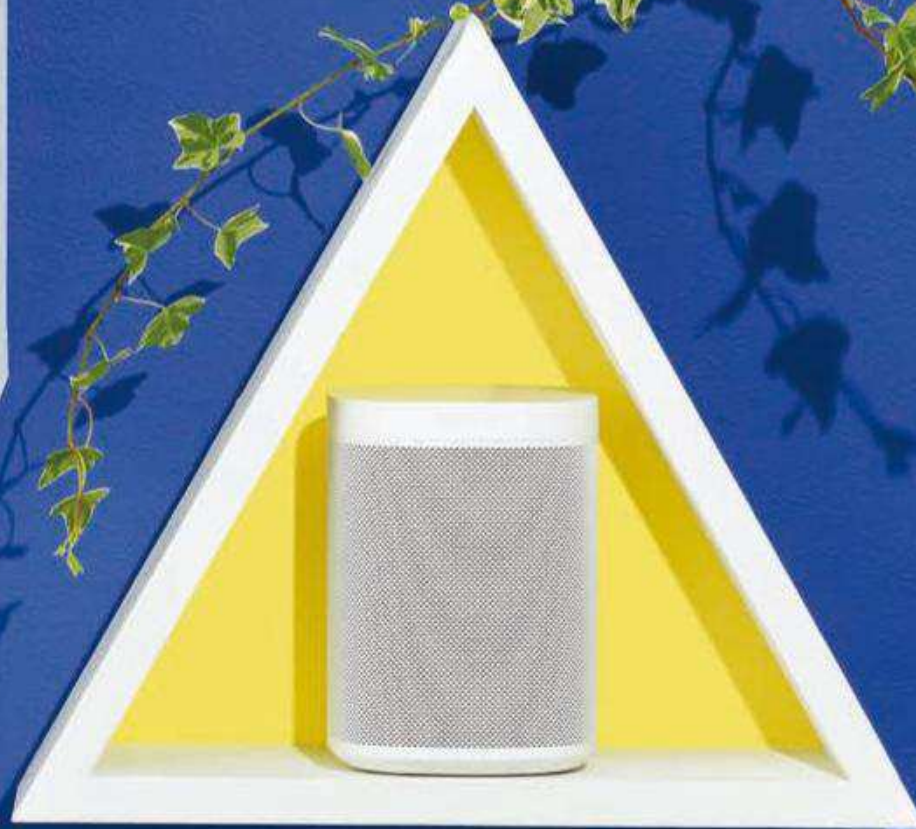
Smart speakers can stream entertainment (68 percent of the people who own one use it to listen to music), but we found that the majority of smart speakers we tested—especially the lower-priced models—don't sound great. Fortunately, you can link most of them to one of the high-scoring speakers in our ratings so that when you say, “Hey, Google, play some Johnny Cash,” the Man in Black will sound the way he should.

Adding Safety and Comfort

Smart speakers are useful on their own, but they can also control an array of other smart-home devices. For instance, you can pair your smart speaker with a video doorbell and use it to talk to arriving guests, or

At Your Service

Smart speakers, such as these recommended models, come with personal digital assistants that respond to verbal commands. The **Echo Plus** and **One** come with Amazon's Alexa; the **Home Max** comes with Google Assistant.



Clockwise from top right

✓ **AMAZON ECHO PLUS**
\$150

55
OVERALL SCORE

✓ **SONOS ONE**
\$200

63
OVERALL SCORE

✓ **GOOGLE HOME MAX**
\$400

74
OVERALL SCORE

pair it with a smart lock, so you can lock or unlock the front door, all by talking to the digital assistant. You can also use your voice to turn lights on or off without having to leave your couch or bed.

Linking your smart devices to one another can enable them to do even more. You could, for instance, have your smart front-door lock automatically send a message to your smart thermostat to turn down the heat each time you leave home so that you'll save money on your energy bill.

The Best Speaker for You

Though you might not be planning to incorporate a lot of smart devices into your home right now, choosing a speaker with a personal digital assistant that is compatible with a wide variety of other products will allow you to grow into a smarter home, if you ever decide that you want to. More manufacturers seem to be making their devices compatible with multiple digital assistants to appeal to the broadest market. Amazon's Alexa has a sizeable lead over the competition and can control more than 13,000 smart-home devices. Google Assistant works with more than 5,000 smart-home products, and Apple's Siri controls fewer than 200.

To guide members in their purchase decisions in this rapidly growing category of products, Consumer Reports now tests smart-home devices including speakers, video doorbells, and door locks. "We look at how they perform their primary function but also whether the smart functionality actually improves the overall user experience," says CR's Bernie Deitrick, the engineer who oversees our home security camera testing. This user experience evaluation is reflected in the Smart IQ score column in several of our ratings charts, which you'll find on the following pages.

Simple Ways to Add Convenience and Security

Linking a smart speaker to these easy-to-use devices lets you control them with your voice and talk to people at your front door—and even to your dog—when you're not at home. Choosing a speaker that works with a wide array of devices will give you room to grow into a smarter home.

Amazon Echo Dot 2
\$50

40
OVERALL SCORE

The Dot is an inexpensive smart speaker that gives you access to the same Amazon Alexa digital assistant as its pricier stablemates. The Dot's sound quality was merely fair in our testing, which dropped it into the ratings basement, but you can link it to any wireless Bluetooth speaker, including one you already own, to add Alexa's utility to the sound quality you're used to.

WORKS WITH

Google Home Max
\$400

74
OVERALL SCORE

The Home Max is our top smart speaker for one reason: It sounded better than its rivals, handling Springsteen and Stravinsky with equal aplomb. Several Home Max speakers can be set up as a multiroom system that can play different music in different rooms. And Google Assistant is versatile, smart, and good at grasping commands.

WORKS WITH

Apple HomePod
\$350

58
OVERALL SCORE

The HomePod is Apple's only smart speaker, so if you have a lot of music on iTunes or just love Apple products, this is the one for you. Sound quality was very good, falling just shy of the top speakers in the ratings. But CR testers found Apple's Siri digital assistant to be less versatile than Alexa or Google Assistant.

WORKS WITH

VIDEO DOORBELLS

✓ **Ring Video Doorbell Pro**
88LP000CH000
\$250

68
OVERALL
SCORE

CR'S TAKE: No video doorbell we've tested meets its video-quality claims, but the Ring Video Doorbell Pro offers the best video quality of the bunch, by far.

A video doorbell, which is an electronic doorbell with a video camera built in, replaces your existing hardwired doorbell and connects wirelessly to the internet to show you who's at your door. It will send alerts and video clips to your smartphone, allowing you to watch a live feed and speak with whoever is buzzing, whether it's an expected guest or an unwanted solicitor. Built-in motion sensors can alert you to snoopers. Pair it with a smart lock and you can remotely greet guests and unlock the door for them.

WIRELESS SECURITY CAMERAS

✓ **Nest Cam Indoor**
NC1102ES
\$200

84
OVERALL
SCORE

CR'S TAKE: The Nest Cam Indoor security camera offers the best performance and the widest array of smart features of any wireless security camera we've tested.

These small security cameras connect to the internet via WiFi, and send alerts and video clips to your smartphone. You can watch a live video feed, and some have two-way audio, so you can speak with visitors—or talk to the dog. Some models run on batteries, but most need power from an outlet. They're a more flexible form of surveillance than video doorbells because you can place them anywhere in the house. Some models are designed to go outside.

SMART LOCKS

✓ **August Smart Lock Pro**
AUG-SL-CON
\$230

81
OVERALL
SCORE

CR'S TAKE: The August Smart Lock is a retrofit model that replaces only the interior side of your deadbolt, and it offers a robust set of features that no other smart lock matches.

Although they're no more secure than traditional deadbolts, these locks add convenience and awareness by sending alerts to your smartphone when someone locks, unlocks, or tampers with them. Many models also let you program an access code or create an electronic key for guests. Most smart locks require an additional device called a WiFi bridge to connect to the internet. This costs extra but is an essential upgrade if you want to receive alerts when you're not at home.

SMART THERMOSTATS

Ⓢ **Nest Thermostat E**
\$170

83
OVERALL
SCORE

CR'S TAKE: The Nest Thermostat E eliminates the need for programming and instead creates an energy-saving schedule based on when you're away and how you set it when you're home.

Like other internet-connected devices, smart thermostats can be controlled from your smartphone, which means you can adjust your home's temperature from across town or across the globe. You can program them, but some have sensors that "learn" your temperature preferences for your weekend and weekday schedules and automatically adjust the temperature to optimize energy savings. According to Energy Star, smart thermostats can reduce energy bills by about \$50 per year.

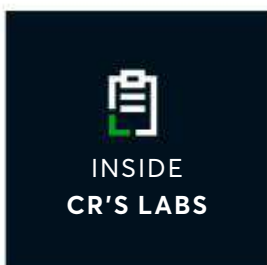
Ratings > **Safe and Sound** Below and on the facing page are ratings for smart speakers and the locks, video doorbells, and wireless cameras they can be paired with to make your home more secure. For smart-thermostat ratings, see the July 2018 issue.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results			Features				
					Sound quality	Versatility	Ease of use	Audio format	Voice-identity support	Adjustable tone settings	Optional multiroom sharing	Supported digital assistant
✓	1	Google Home Max	74	\$400	↑	↑	↑	Stereo	•	•	•	Google
Ⓢ	2	Sonos One	63	\$200	↑	↓	↑	Mono	•	•	•	Alexa
Ⓢ	3	Amazon Echo Show	61	\$230	↓	↑	↑	Stereo	•	•	•	Alexa
Ⓢ	4	JBL Link 300	61	\$185	↓	↓	↑	Stereo	•	•	•	Google
✓	5	JBL Link 20	58	\$160	↓	↓	↑	Stereo	•	•	•	Google
✓	6	Apple HomePod	58	\$350	↑	↓	↑	Mono	•	•	•	Siri
✓	7	Amazon Echo Plus	55	\$150	↓	↑	↑	Mono	•	•	•	Alexa
	8	Amazon Echo (2nd generation)	54	\$100	↓	↑	↑	Mono	•	•	•	Alexa
	9	Phorus PS10	53	\$180	↓	↓	↑	Stereo	•	•	•	Alexa
	10	Pioneer Elite Smart Speaker F4	53	\$200	↓	↓	↑	Stereo	•	•	•	Alexa
	11	Google Home	52	\$130	↓	↑	↓	Mono	•	•	•	Google
	12	JBL Link 10	50	\$120	↓	↓	↑	Stereo	•	•	•	Google
	13	Harman Kardon Invoke	49	\$200	↓	↓	↓	Mono	•	•	•	Cortana
	14	Sony S50G	48	\$100	↓	↓	↑	Mono	•	•	•	Google
	15	Amazon Echo Spot	48	\$130	↓	↑	↑	Mono	•	•	•	Alexa
	16	808 Audio XL-V	45	\$130	↓	↓	↓	Stereo	•	•	•	Alexa
	17	Google Home Mini	44	\$50	↓	↑	↑	Mono	•	•	•	Google
	18	Ultimate Ears Blast	41	\$230	↓	↓	↓	Stereo	•	•	•	Alexa
	19	Amazon Echo Dot 2	40	\$50	↓	↑	↑	Mono	•	•	•	Alexa

HOW WE TEST: **Sound quality** measures a speaker's ability to reproduce music in a real-world environment. **Versatility** tallies the useful features of each model. **Ease of use** measures how difficult

it was to set up a speaker and how intuitively it functioned in everyday use. **Voice-identity support** reflects whether a speaker can differentiate among users, an important privacy consideration. We note the smart

speakers that can be used as part of an **Optional multiroom sharing** system. For more information about testing see CR.org.



This spring CR released its first-ever dedicated smart-speaker ratings. Speakers are ranked using three main criteria: sound quality, versatility, and ease of use. "We found substantial differences in sound quality among the smart-speaker models we tested," says test leader Elias Arias. Because most people use their smart speakers to listen to music, that factor is given the most weight when calculating our ratings.



CR test engineer
Elias Arias

Rec.	Rank	Brand & Model	Overall Score	Price	Test Results						Features						
					Kick-in, as sold	Kick-in, reinforced	Drilling	Picking	Smart IQ	Connectivity	Keyless lock	Voice control	Auto lock/unlock	Electronic keys	Access log	Tamper alarm	Geofencing
SMART LOCKS																	
✓	1	August Smart Lock Pro AUG-SL-CON ¹ ² ³	81	\$230	↑	↑	↓	↑	↑	↓		•	•	•	•	•	•
✓	2	Schlage Sense Smart BE479CEN619 ¹	76	\$230	↑	↑	↓	↑	↑	↑		•	•		•	•	
✓	3	Kwikset 925 Kevo Convert 15 ¹ ² ³	74	\$150	↑	↑	↓	↑	↓	↓				•	•		
✓	4	Schlage Connect BE469NXCAM619 ¹	74	\$200	↑	↑	↓	↑	↑	↓		•	•		•	•	
	5	Nest X Yale Lock RB-YRD540-WV	68	\$280	↓	↑	↑	↑	↑	↓	•		•	•	•	•	•
	6	Kwikset 925 Kevo 2 DB 15 ²	58	\$200	↓	↑	↓	↑	↑	↓				•	•		
	7	Yale Real Living AssureLock YRD246-ZW-619	45	\$200	↓	↑	↑	↑	↓	↓	•	•		•	•		
	8	Yale Real Living AssureLock YRD226-ZW-619	33	\$275	↓	↑	↓	↑	↓	↓		•		•	•		

Rec.	Rank	Brand & Model	Overall Score	Price	Test Results				Features							
					Video quality	WiFi setup	Response time	Smart IQ	Claimed resolution	Color night vision	Rechargeable battery-powered	Hardwired for power	Indoor chime	Schedules	Monitoring zones	
VIDEO DOORBELLS																
✓	1	Ring Video Doorbell Pro 88LP000CH000	68	\$250	↓	↓	↓	↓	1080p			•	•	•	•	•
	2	SkyBell HD Silver WiFi Doorbell SH02300SL	64	\$200	↓	↓	↑	↓	1080p	•		•	•	•	•	•
	3	Ring Video Doorbell 88RG000FC100	51	\$200	↓	↓	↑	↓	720p		•	•	•	•	•	•
	4	Vuebell Camera Video Doorbell NI-4011	25	\$120	↓	↓	↑	↓	720p			•	•			

Rec.	Rank	Brand & Model	Overall Score	Price	Test Results				Features						
					Video quality	WiFi setup	Response time	Smart IQ	Claimed resolution	Siren	Indoor/outdoor	Rechargeable batteries	Schedules	Monitoring zones	2-way audio
WIRELESS SECURITY CAMERAS															
✓	1	Nest Cam Indoor NC1102ES	84	\$200	↓	↓	↑	↑	1080p HD		•			•	•
✓	2	Netgear Arlo Pro VMS4130-100NAS	74	\$250	↓	↓	↑	↓	HD	•	•	•	•		•
	3	D-Link DCS-2630L	71	\$160	↓	↓	↑	↓	1080p HD					•	•
	4	Canary Flex CAN600USBK	59	\$180	↓	↓	↑	↓	1080p HD		•	•		•	•

HOW WE TEST: For smart locks, **Overall Score** combines ratings from six individual tests. For **Kick-in, as sold**, each lock is installed with its included hardware and subjected to eight calibrated blows from a battering ram. **Kick-in, reinforced**, repeats the test with a box strike

plate installed. **Drilling** is how long it takes to disable a lock with a cordless drill. **Picking** reflects how easily our experts can pick each lock. **Smart IQ** is a tally of each lock's smart features. **Connectivity** indicates how easy it is to set up and connect each lock to various devices.

Video doorbells and wireless security cameras are both subject to the following test protocol: **Overall Score** is a combination of four lab tests. **Video quality** is a rating of the quality and accuracy of video in different lighting situations. **WiFi setup** is how easy it is to get the

device connected to the internet and working properly. **Response time** is how long it takes each device to send out an alert when it detects motion. **Smart IQ** is a tally of each device's smart features, excluding those that require a subscription.

¹ Needed no reinforcement. ² Rekeyable. ³ Tested with Kwikset 980 deadbolt. ⁴ Optional.

What's Really in Your Meat?

Banned drugs have been detected in beef, poultry, and pork. How did they get there? What's known about the risks? And what can be done to keep these drugs off our plates?

by **Rachel Rabkin**
Peachman





W496VOO873082334

BEEF

MAY CONTAIN: CHLORAMPHENICOL,
KETAMINE, NITROIMIDAZOLES

SAMPLES COLLECTED
OCT 2015 TO SEPT 2016



"THESE RESULTS ARE CREDIBLE ENOUGH
THAT YOU WOULD EXPECT THE GOVERNMENT
TO TAKE THE WARNING SIGNS SERIOUSLY."

-James E. Rogers, Ph.D., microbiologist
and director of food safety research
and testing at Consumer Reports



Ketamine, a hallucinogenic party drug and experimental antidepressant. Phenylbutazone, an anti-inflammatory deemed too risky for human use. Chloramphenicol, a powerful antibiotic linked to potentially deadly anemia.

All these drugs are prohibited in beef, poultry, and pork consumed in the U.S. Yet government data obtained by Consumer Reports suggest that trace amounts of these and other banned or severely restricted drugs may appear in the U.S. meat supply more often than was previously known.

The data—as well as Consumer Reports’ review of other government documents and interviews with farmers, industry experts, government officials, and medical professionals—raise serious concerns about the safeguards put in place to protect the U.S. meat supply.

These concerns start with how poultry, cattle, and pigs are raised in this country. And they include questions about how the federal government tests meat from these animals, and how it investigates and enforces potential violations.

The data come from the Department of Agriculture’s Food Safety and Inspection Service, the agency tasked with ensuring the safety of the U.S. meat supply. Emilio Esteban, Ph.D., chief scientist for the FSIS, says that the results should be discounted because they came from unconfirmed screening tests.

Indeed, much remains uncertain about the test results. For one, it’s not always clear how the drugs end up in meat, though experts have ideas, including contaminated feed and intentional misuse. There are also questions about whether the amounts of drug residue found in the samples pose risks to humans, in part because little research has been done to investigate that possibility.

Still, CR’s food safety scientists, and other experts we consulted, say the results are meaningful and concerning.

“These results are credible enough that you would expect

the government to take the warning signs seriously,” says James E. Rogers, Ph.D., who was a microbiologist at the FSIS for 13 years before becoming director of food safety research and testing at Consumer Reports. “You would hope the results would prompt the agency to look into why these drugs may be present, what risks they could pose, and what could be done to protect consumers.”

A Debate Over Data

The data CR evaluated were obtained through a Freedom of Information Act request as part of an ongoing lawsuit brought by several food safety organizations against Sanderson Farms, one of the nation’s largest chicken producers. The groups allege that Sanderson makes misleading claims about its chicken being natural and free of antibiotics. The company denies that its labels are misleading.

But the data raise questions about more than just one company or class of drugs.

Hundreds of samples of poultry, beef, and pork appeared to show residue of drugs that the government says should never be used in food animals. Other samples had evidence of drugs that must be out of an animal’s system by the time it is slaughtered. The samples came from producers large and small, and included meat destined for supermarkets, restaurants, hospitals, schools, and elsewhere.

Yet FSIS officials have taken little if any action based on the data. When asked to explain why not, Esteban, at the FSIS, said the samples didn’t meet several criteria used by the agency to decide when a sample requires follow-up testing.

For example, he said that some results came from tests that have never been validated for certain animals or drugs. And, he said, in many cases the results were below a level that the agency considers worrisome. The agency subsequently released a second set of data that, it says, reflected test results after those criteria had been applied, and that made the initial results invalid. In a written response, an agency spokesperson said, “Reporting preliminary unconfirmed data will be misleading as these data do not represent any public health risk to consumers.”

Consumer Reports’ food safety scientists disagree.

They point out that the testing and methodology used by the FSIS to check for drug residue in meat is rigorous, capable of detecting even very small amounts of the drugs. In fact, they say that the test the agency uses to confirm results is the same one it uses to screen for drugs in the first place.

CR’s scientists also note that the FSIS cutoffs seem much higher than those used by other scientists, even in other government

**“EQUIPMENT HAS
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—Robert Poppenga,
Ph.D., professor
of veterinary
toxicology at
the University of
California, Davis



|||||
E610V00299405040
CHICKEN
MAY CONTAIN:
CHLORAMPHENICOL,
NITROIMIDAZOLES

agencies. And in documents provided to CR, the FSIS acknowledged that even for drugs that should not be in meat, the agency sets its cutoffs above what the test can measure.

Finally, CR's analysis of the data identified many samples with results above even the FSIS' own cutoff.

The Science of Detection

The results CR analyzed, covering tests performed from October 2015 through September 2016, come from nearly 6,000 samples selected at random by the FSIS at slaughterhouses around the country. The samples were then sent to a lab and tested with a device capable of measuring dozens of compounds at once, often down to the parts-per-trillion level.

That device, which the FSIS began using in 2012, replaced technology that could measure fewer substances and only to the parts-per-million level, says Parthapratim Basu, D.V.M., who worked at the FSIS for 35 years before retiring as chief public health veterinarian in January 2018. (He is currently consulting for a law firm representing Sanderson Farms.)

Basu and other experts say the FSIS set its higher cutoffs—what the agency calls its minimum level of applicability (MLA)—partly in response to this new equipment.

“Analytical equipment has gotten so sensitive that it's possible to detect things that you wouldn't have 20 years ago,” says Robert Poppenga, Ph.D., a professor of veterinary toxicology at the California Animal Health & Food Safety Lab at the University of California, Davis, who has worked with the FSIS. Using the MLA, he says, gives “authorities some flexibility, and if they do find something at a very, very low level, they don't necessarily have to take regulatory action.”

“Is it a perfect system?” Poppenga says. “Probably not. But we don't have the resources to do a risk assessment for every possible chemical that could possibly be there.”

Some experts, however, worry that by relying on higher cutoffs, the FSIS may overlook possible health threats. Some research, including a 2015 review in the *Journal of Veterinary Science & Toxicology*, suggests that long-term exposure to low levels of drug residue in meat could increase the risk of cancer, fetal harm, antibiotic resistance, and more.

Experts also worry that the FSIS could be failing to fully investigate the problem. “Any responsible agency should want to understand how widespread contamination is,” says Charles Benbrook, Ph.D., a visiting scholar in the Bloomberg School of Public Health at Johns Hopkins University, who consulted with the food safety groups in the Sanderson lawsuit. “Certainly it should have resulted in aggressive action ... to figure out why these drugs are getting into animal products.”

Inconsistent Regulation

Other U.S. government agencies seem to be concerned about these drugs even at levels below the cutoff used by the FSIS.

The Food and Drug Administration, for example,

has blocked shrimp from Malaysia because it contained chloramphenicol at levels as low as 0.3 parts per billion. By contrast, the FSIS regulatory cutoff for chloramphenicol in meat is 3 ppb, an amount 10 times as high.

The Environmental Protection Agency has also taken issue with the FSIS cutoffs, according to a 2014 report from the Government Accountability Office. It noted: “EPA expressed its concerns to FSIS that the relatively high FSIS minimum levels of applicability hampered EPA's ability to accurately estimate exposure” to pesticides in food.

Other countries seem to be concerned about these drugs at levels below the FSIS threshold as well. After a scandal involving beef contaminated with horse meat rocked Europe in 2013, regulators there worried that consumers could be exposed to phenylbutazone, a drug approved for use in horses. In response, regulators reaffirmed that meat with phenylbutazone was unfit for human consumption, publishing cutoffs ranging from 1 to 11 ppb. By contrast, the FSIS sets its cutoff for the drug in pork at 50 ppb.

Why Standards Matter

CR's scientists and several food safety experts we consulted—including Basu, the former FSIS official—say that instead of its less stringent cutoff, the FSIS should use more widely accepted scientific standards.

That includes the limit of quantitation (LOQ), which is the lowest amount of a substance that an instrument and testing procedure can reliably measure. “I find that very disturbing that [the FSIS has] different standards,” says Ronald Baynes, Ph.D., director of the Center for Chemical Toxicology Research and Pharmacokinetics at North Carolina State University's College of Veterinary Medicine.

But the FSIS says it does not use LOQs. So CR's scientists, using other government documents and interviews with experts, made their best estimate of appropriate, conservative cutoffs for some of the most concerning drugs. With that information, they identified samples in which drug residues appeared to be truly present, and not mere statistical or instrument noise.

The results of that analysis (see the chart on the facing page), which focused on four particularly worrisome drugs, are troubling, say CR's scientists and some outside experts.

“I'm floored by these results,” says Andrew Gunther, a food animal production expert and executive director of A Greener World, a nonprofit that promotes sustainable farming. “These are potentially very dangerous drugs, appearing in more samples and at higher levels than I would have ever expected.”

Industry groups, however, stand by the FSIS. Conclusions based on preliminary results “would amount to fearmongering and needless alarm,” says Ashley Peterson, Ph.D., senior vice president of scientific and regulatory affairs at the National Chicken Council, echoing statements from other groups representing beef, pork, and turkey producers.

Banned Drugs:

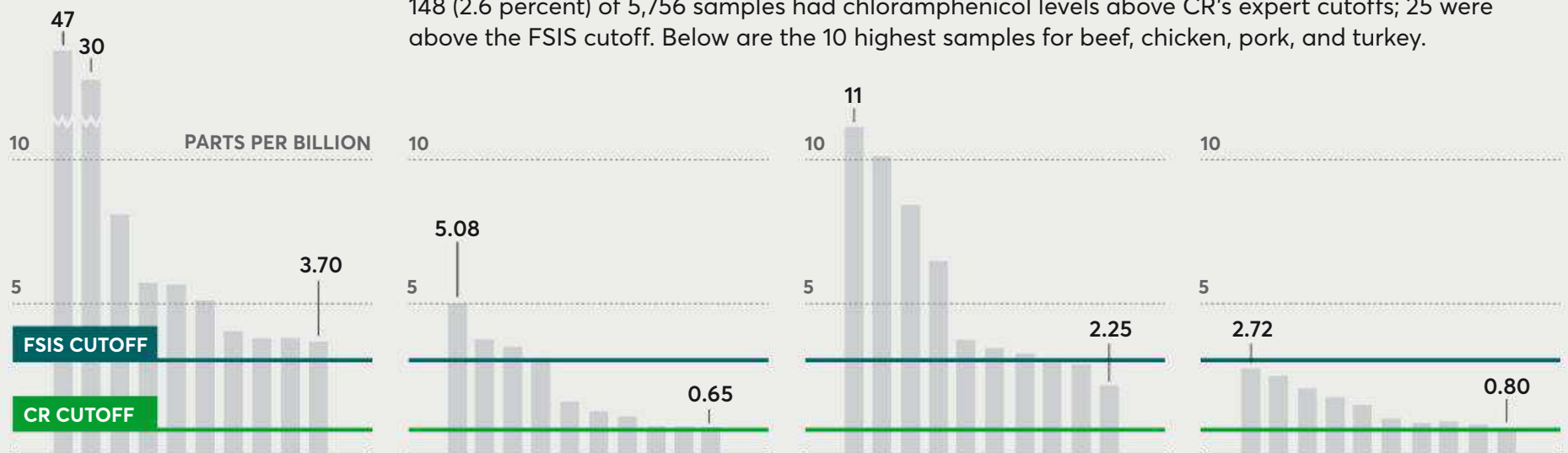
WHAT THE DATA SHOW

CR's analysis of data from the Food Safety and Inspection Service, a branch of the Department of Agriculture, suggests that banned or restricted drugs may appear in the U.S. meat supply more often than was previously known. Below are descriptions of four of these drugs, along with estimates of how many meat samples tested by the FSIS were above a cutoff used by the agency to determine when a drug is present in the meat, as well as how many were above a cutoff that CR's scientists and outside experts say is more scientifically justified.

A POWERFUL ANTIBIOTIC

Chloramphenicol

This antibiotic, at any exposure level, can trigger life-threatening aplastic anemia, or the inability to produce enough new blood cells, in 1 in 10,000 people. For poultry, beef, and pork samples combined, 148 (2.6 percent) of 5,756 samples had chloramphenicol levels above CR's expert cutoffs; 25 were above the FSIS cutoff. Below are the 10 highest samples for beef, chicken, pork, and turkey.



Beef

81 of 2,865 samples had levels above the CR cutoff; 12 were above the FSIS cutoff.



Chicken

12 of 702 samples had levels above the CR cutoff; four were above the FSIS cutoff.



Pork

40 of 1,448 samples had levels above the CR cutoff; nine were above the FSIS cutoff.



Turkey

15 of 741 samples had levels above the CR cutoff; none was above the FSIS cutoff.

THREE OTHER WORRISOME DRUGS

Phenylbutazone

An anti-inflammatory and pain drug no longer used in humans because it can cause aplastic anemia and other blood disorders, and could be carcinogenic in humans. In pork, 24 of 1,448 samples were above the CR threshold; one was above the FSIS cutoff. (The FSIS has not validated its test for phenylbutazone in beef or poultry muscle.)

Ketamine

An anesthetic also used experimentally as an antidepressant that is restricted by the government because it is sometimes used as an illegal hallucinogenic party drug. In pork and beef combined, 225 of 4,313 samples were above the CR threshold; 15 were above the FSIS cutoff. (The FSIS has not validated its test for ketamine in poultry muscle.)

Nitroimidazoles

Antifungal medications used with great caution because they are likely carcinogens. In poultry, beef, and pork combined, 667 of 5,756 samples were above the CR threshold; 136 were above the FSIS cutoff.

How Do Banned Drugs Get Into Meat?

That's not always clear, but experts offer some possibilities.

- **Background exposure.** With drugs prescribed so widely in humans and livestock, trace amounts from runoff or excrement can end up in soil and water, says Gail Hansen, D.V.M., a veterinarian who focuses on public health. That residue could reach the water or feed that animals consume, and ultimately be detected in meat.

Another explanation is that certain drugs may occur naturally in the environment. Chloramphenicol, in fact, was originally developed from a compound found in soil.

- **Improper use.** Drug residue can also be found in meat if an animal was given the wrong dose or not enough time passed before slaughter to let the drug clear the animal's system.

- **Counterfeit drugs.** A 2017 report, "Illegal Veterinary Medicines," by the nonprofit group Health for Animals noted that counterfeit veterinary drugs, which mainly come from China and India, could threaten human health "through consumption of food from animals treated with these products." And last year the FDA warned about U.S. ports receiving shipments of several drugs—including chloramphenicol, ketamine, and phenylbutazone—that were labeled for manufacturing but could be intended for unapproved veterinary uses.

- **Contaminated feed.** Several industry insiders say this is a

particularly likely explanation. Jonathan Buttram, a farmer who raised chickens for many years, says that feed often contains parts of other animals, such as cattle. And animals turned into feed could be more likely to have been sick and treated with drugs prior to slaughter, says Jennifer Burton, D.V.M., a veterinarian who focuses on sustainable farming. Residue from these medications could make it into feed, and then into the animals that consume it.

Contamination could also occur if a drug approved for nonfood animals gets introduced into feed for a food animal, perhaps because a feed mill is not cleaned well between uses or because feed bags get mixed up, Hansen says.

- **Intentional misuse.** Farmers we contacted could not or would not point to specific instances, but some said that producers sometimes misuse veterinary drugs to speed growth, increase lean protein, or treat sick animals.

"If you're asking, 'Do people do it?' I would say, 'Do people speed?'" says Will Harris, owner of White Oak Pastures, an

"THESE ARE POTENTIALLY VERY DANGEROUS DRUGS, APPEARING IN MORE SAMPLES AND AT HIGHER LEVELS THAN I WOULD HAVE EVER EXPECTED."

—Andrew Gunther, executive director of A Greener World, a nonprofit that promotes sustainable farming



organic farm in Bluffton, Ga. “The answer is yes—if they think they can get away with it.” He points out that most meat never gets checked, so producers sometimes “succumb to temptation, especially when there is a financial reward.”

For example, cattle that can’t stand on their own are not allowed to be used for meat. So, Basu says, lame cattle are sometimes given phenylbutazone—a painkiller—shortly before slaughter, so they can “get the animal through the slaughterhouse gates without anybody looking closer.”

There also appears to be an active black market for veterinary drugs. In March 2017, a Virginia man who pleaded guilty to selling veterinary medications illegally said during his sentencing hearing that he was hardly alone: “It didn’t make what I done right, but this stuff has been traded out of the back of vehicles forever.”

The Struggle for Enforcement

FSIS testing does sometimes lead to companies being cited for violations. But these citations are usually for drugs, mostly antibiotics, that are approved for use in animals and simply exceed their residue limits.

Very few violations are for drugs that should never be in meat. Yet CR’s analysis, which focused on just four drugs, identified numerous samples that appeared to contain detectable amounts of these zero-tolerance drugs, both above and below the FSIS regulatory threshold.

Charles Benbrook, the Johns Hopkins researcher, suspects that the FSIS may set high thresholds in part because it doesn’t have the resources to deal with the extra violations that could result if it used lower levels.

Other experts point to what they see as additional shortcomings in FSIS testing and enforcement practices.

For example, Baynes questions why the FSIS has not validated its test for all the drugs CR looked at, especially phenylbutazone in beef, because it’s known that the drug has been misused in cattle, and other scientists have been able to validate similar tests in beef.

And Basu and Baynes worry that the FSIS tests often focus on the wrong parts of animals. To detect improper drug use, they say, you should sample kidneys or livers, where drugs tend to accumulate. Yet the FSIS more often tests muscle. The FSIS says it tests muscle because that’s what consumers usually eat. But Basu and Baynes say that also means that improper drug use is less likely to be discovered.

Even when violations are reported, Basu believes the FDA’s penalties are often ineffective. FDA officials say that penalties can include warning letters, injunctions, seizures, and placing repeat violators on a publicly reported list.

But that rarely leads to changes in how meat producers operate, Basu says. “I’ve been to farms where they are proud to get letters from FDA,” he says. “They cover the holes in the barn with the letters. And just keep on doing it.”



WHERE WE STAND: DRUG RESIDUE

CR’s investigation suggests that the Department of Agriculture’s Food Safety and Inspection Service is failing to ensure that meat is free of potentially unsafe drug residue. We urge it to:

➤ **Use appropriate cutoffs.** The FSIS should abandon its “minimum level of applicability” standard for determining when a drug residue is in violation.

➤ **Inform the public.** The FSIS should alert consumers of all violations, including the

names and locations of all companies, not just repeat violators.

➤ **Investigate the risks.** The FSIS should look into how unapproved drug residue may end up in meat. It should validate its tests for the most concerning drugs. And it should study the health risks of long-term exposure to trace amounts of these drugs.

➤ **Enforce effectively.** In addition, the FDA should ensure that violations are addressed promptly, and consistently impose fines for noncompliance.

What Consumers Can Do

CR’s food safety experts don’t think that the concerns raised in this investigation mean you should give up or necessarily cut back on meat. The findings are too uncertain and the potential risks still unknown. But research suggests that many Americans eat more meat than recommended for good health and that reducing meat consumption can be better for the environment. The potential problems identified here may be enough for some to consider eating less meat.

The data CR analyzed are not robust enough to say whether particular companies are more likely than others to have drug residue in meat.

Nor was there enough information to say for certain that organic meat is less likely to have drug residue. Still, organic farms are subject to additional monitoring from the government and independent organizations, and federal law generally requires them to raise their animals without drugs or other chemicals. “The USDA Organic seal can’t guarantee that the meat will be drug-free, but the additional rules and oversight do increase the odds,” says Charlotte Vallaey, Consumer Reports’ organic food expert.

If you work on a farm or in meat or feed production and have seen the misuse of veterinary drugs, we want to hear from you. Contact us at [CR.org/newstips](https://www.consumerreports.org/newstips).

Additional reporting by Lea Ceasrine.

Hidden Health Risks From Heavy Metals

CR's exclusive testing of 50 packaged foods has led us to call for government and manufacturers to do more to protect consumers, especially children.

by **Jesse Hirsch**

YOU'VE PROBABLY HEARD that certain kinds of fish have high levels of mercury and that rice can contain concerning amounts of arsenic. But you might not know why that's a problem—or that these elements (and others, such as lead and cadmium), commonly known as “heavy metals,” are also in many other foods, including those that babies and toddlers consume every day.

Long-term exposure to heavy metals can damage the body's cells and harm human health in a number of ways. But babies and toddlers are the most vulnerable, even to small amounts, because of their smaller bodies and developing organs.

To look into the problem, CR bought 50 popular packaged foods intended for babies and toddlers, and tested them for arsenic, cadmium, lead, and mercury.

What we found was troubling. Every food had measurable levels of at least one of the four heavy metals. “Manufacturers and the government need to act now to set limits on the amounts of heavy metals in food fed to babies and small children,” says James E. Rogers, Ph.D., director of food safety research and testing at Consumer Reports. “That said, parents should not panic. There are steps they can take right now to protect their kids.”

Defining the Dangers

Humans need small amounts of certain heavy metals, such as iron and zinc, to function properly. But arsenic (especially a type called inorganic arsenic), cadmium,

lead, and methylmercury can be toxic.

For example, a recent study suggests that low levels of lead (from food and other sources) contribute to about 400,000 deaths each year, more than half from cardiovascular disease. Inorganic arsenic has been linked to type 2 diabetes and bladder cancer. Methylmercury can damage nerves, and can also lead to muscle weakness, lack of coordination, and impaired vision and hearing. And chronic cadmium exposure may lead to kidney, bone, and lung disease.

For certain health problems, the risks come mainly from frequent, long-term intake. “Toxins can accumulate in your body and remain there for years,” says Tunde Akinleye, a chemist in Consumer Reports' Food Safety Division.

But in children, smaller doses over shorter periods can cause problems including

FOODS TO WATCH OUT FOR

Apple and Grape Juice

Past CR tests found inorganic arsenic and lead in many brands, some at levels above federal drinking water standards. Children younger than 1 year should avoid these juices entirely. Children 1 to 3 should have no more than 4 ounces a day; children 4 to 6, no more than 6 ounces.

Chocolate

It can contain lead and/or cadmium. Cocoa powder can have more cadmium than chocolate, and dark chocolate can have more than milk chocolate.

Fish

Bigeye tuna, shark, king mackerel, orange roughy, and swordfish are particularly high in methylmercury. Children and women of childbearing age should avoid these fish; others should eat them infrequently, if at all.

Protein Powders

These may contain arsenic, cadmium, and lead, according to tests from CR and others. Whey- and egg-based powders tended to have less than plant-based ones, but all should be used with caution.

Rice

Tests by CR, the FDA, and others have found high levels of inorganic arsenic in rice, especially brown rice. In our tests, white basmati rice from California, India, and Pakistan, and sushi rice from the U.S., had on average half as much as most other types. Rice cakes, cereal, and pasta had higher amounts.

lower IQs and behavior problems, says Victor Villarreal, Ph.D., assistant professor in the department of educational psychology at the University of Texas at San Antonio, who has researched the effects of heavy metals on childhood development. “Early exposure can have long-lasting impacts that may be impossible to reverse,” he says.

The Food and Drug Administration acknowledges these dangers—but hasn’t set regulatory limits for heavy metals in prepared baby foods.

What CR’s Tests Found

CR looked at baby cereals; packaged fruits and/or vegetables; packaged entrées; and bars, cookies, crackers, puffs, and other snacks often fed to babies and toddlers.

Two-thirds (34 products) contained concerning levels of inorganic arsenic, lead, and/or cadmium. Of those, 15 could pose a risk to a child eating one serving or less per day. (Only two products contained measurable levels of methylmercury, and none at worrisome amounts.)

Organic products were as likely to contain heavy metals as conventional ones.

“Our results raise a red flag,” Akinleye says. “The foods we tested are popular among parents, sometimes served to their children one or more times per day.”

Products made with rice fared the worst in our tests, mostly because of their inorganic arsenic. As a category, snack foods were the most problematic (probably because many contain rice). More than half the snacks we tested had concerning levels of arsenic, lead, and/or cadmium.

How Heavy Metals Get Into Your Food

Heavy metals are naturally found in soil and water. But pollution and pesticides have made heavy metal levels in certain areas much higher than they would be naturally. While there have been improvements in industrial practices and bans on certain pesticides, the remnants of past use linger in soil and water.

Some plants take up more heavy metals from soil than others. Rice, for example, tends to absorb more inorganic arsenic—and because arsenic gathers in the grain’s outer layers, brown rice has been shown to have more of it than white rice does.

Plants grown in different parts of the globe—or even on different parts of the same property—can contain very different heavy metal levels. “Soil tends to contain more

heavy metals near big cities and centers of industry,” says Tracy Allen, supervisor at the University of Massachusetts Soil and Plant Testing Laboratory. “But it can also be very specific, like a 3- to 5-foot swath of contaminated soil around an old farmhouse that was coated in lead paint.”

By carefully sourcing ingredients, baby food manufacturers can limit the amount of heavy metals in their products, Rogers says. He adds that about a third of the products CR tested—at least one from each category we looked at—had levels of heavy metals that were less concerning. “That indicates that it’s possible for food manufacturers to produce safer products.”

What Consumers Can Do

While you might not be able to eliminate heavy metals from your food, adults and children

can follow these steps to minimize risks:

- **Limit consumption of foods that tend to be higher in heavy metals.** See “Foods to Watch Out For,” on the facing page, for examples.

- **Eat an array of fruits, vegetables, and grains.** “That helps you avoid overconsuming any one type of food, plus a varied diet has many other health benefits,” says Amy Keating, R.D., a Consumer Reports nutritionist. And getting enough calcium, vitamin C, selenium, and certain other nutrients may offset some of the harm from some heavy metals.

- **Rethink rice prep.** To help reduce arsenic content, rinse rice, cook it in a lot of water (as you would pasta), and drain it afterward.

Go to [CR.org/heavymetals](https://www.consumerreports.org/heavymetals) for a chart with our test results, and more advice for parents.



WHERE WE STAND: HEAVY METALS

CR’s testing investigation found concerning levels of heavy metals in many of the children’s food products we tested. We urge the Food and Drug Administration to:

- **Establish aggressive targets.** Set a goal of having no measurable amounts of inorganic arsenic, lead, or cadmium in baby and children’s food.

- **Create and enforce benchmarks.** To reach its goals in limiting the heavy metal content in baby and children’s food, the FDA should set incremental targets for industry to meet.

- **Finalize proposed guidelines.** The FDA should limit inorganic arsenic in apple juice to 10 parts per billion. The agency should also limit inorganic arsenic in infant rice cereal to 100 ppb. The

FDA told CR it is on track to finalize those limits by the end of 2018.

Industry also has a role to play. We reached out to the manufacturers whose products we tested; most said that they did their own testing and that they supported the government setting limits for children’s foods. That’s good. But our results show they can, and should, do more.

SHOULD YOU STILL LIKE FACEBOOK?

If months of reading about deceitful quiz apps, political meddling by Russian bots, and unchecked data collection have you rethinking your relationship with Facebook, you're not alone. In a nationally representative survey of more than 2,000 U.S. adults, 7 in 10 Facebook account holders told us that to safeguard their privacy, they had changed the way they use the platform since news about the Cambridge Analytica scandal broke in March. Ready to tighten the controls on your own account? Here are some simple ways to do that.





KEEP YOUR WHEREABOUTS TO YOURSELF

Each time you use the Facebook mobile app to “check in” to your favorite diner or tag that family photo op on the Golden Gate Bridge, Facebook pinpoints your location using GPS data and signals from WiFi access points, cell towers, and other sources. The company also uses that technology to identify the places you routinely visit and nearby businesses that may want to target you with ads. You don’t have to let Facebook follow your every footstep, though. Here’s how to turn off location tracking on your phone. (Android instructions may vary slightly by model.)

ON AN ANDROID PHONE: Go to the phone’s Settings > Apps (or Apps & Notifications) > Facebook > Permissions > Location > Off.

ON AN IPHONE: Go to the phone’s Settings > Privacy > Location > Facebook > While Using the App or Never.

TURN OFF FACIAL RECOGNITION

Facebook likes to stress the benefits of facial recognition in its privacy policy and elsewhere on the site, touting its ability to spot friends in photos—and make sure your picture doesn’t get used by someone in Ukraine to set up a fake account. But Consumer Reports’ privacy experts say the company is less forthcoming about other ways that biometric data could be used. A year ago, Facebook filed a patent for technology that would allow the company to identify people as they shop in stores. Another Facebook patent revealed how the data could be used to gauge your emotions as you browse online.

According to a Facebook spokesperson, the company hasn’t adopted either application. Nor does it sell or use facial recognition technology to target ads. Still, these patents show how far-reaching the impact of such data collection could be, says Justin Brookman, the director of consumer privacy and technology policy at Consumer’s Union, the advocacy division of Consumer Reports.

“Facebook has invested a lot in facial recognition,” he adds, “and it’s exploring ways to get a return on that investment.”

ON A COMPUTER: Click the question mark at the top right of your Facebook home page and choose Privacy Shortcuts > Control Face Recognition > Edit > No.

LIMIT DATA COLLECTION BY FACEBOOK’S PARTNERS

The Facebook Login feature is a quick and easy way to sign in to websites and mobile apps for services such as The New York Times, Pandora, and Yelp. But it also gives the companies that provide those services access to account info including your name, photo, email address, and other data visible to the public by default. Think schools you attended, workplaces, Facebook comments posted on other websites, and “likes,” which the researchers at Cambridge Analytica mined for behavioral patterns.

In the wake of that scandal, Facebook withdrew this access from any third-party app that users hadn’t logged in to for 90 days. (Sorry, Angry Birds!) “It’s a good change,” says Brookman. “However, as the Cambridge Analytica scandal showed, once a third party already has your data, it’s really hard to know what happens to it.”

It may be impossible to find and delete personal info harvested by

other companies in the past, but you can see which apps are currently collecting data from your account and stop them. You will no longer be able to access these apps using your Facebook Login, so create a new login and password for each app before making changes.

ON A COMPUTER: Click on the downward arrow at the top right of your Facebook page and choose Settings > Apps and Websites > Active > Click on the box next to the app’s logo > Remove.

PROTECT YOUR ACCOUNT FROM HACKERS

Facebook doesn’t release any figures on breaches, but as with all password-protected services, the security of any account is only as good as the safeguards put in place to protect it. To add a layer of defense to your account, activate two-factor authentication. Once you turn the feature on, Facebook will send you a verification code—via text or app—to confirm your identity when you access your account from an unverified location, device, or browser. “That makes it much harder for someone to breach your account with a stolen password,” says Robert Richter, who oversees CR’s privacy testing.

ON A COMPUTER: Go to Settings and

What Makes Facebook So Irresistible?

In a recent CR survey,* we asked Facebook users why they didn't quit.

77%

THE EASIEST WAY TO STAY CONNECTED



34%

TO REMEMBER BIRTHDAYS



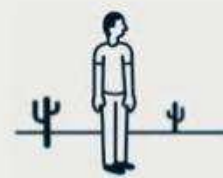
25%

NEED IT TO ORGANIZE/ PARTICIPATE IN GROUPS



23%

AFRAID TO MISS OUT ON THINGS



22%

TOP WAY TO KEEP UP WITH THE NEWS



* These stats are based on the 660 active social media users who said they had not stopped using Facebook despite the Cambridge Analytica scandal.

choose Security and Login > Use two-factor authentication > Get Started.

MAKE YOUR PAGE HARDER TO FIND

The default settings on Facebook permit your user profile to show up in any Google search that includes your name.

But you can change the settings to make your profile less Google-able. And while you're at it, you can also set limits on who can send you friend requests and look you up using the email address or phone number tied to your account.

ON A COMPUTER: Go to Settings > Privacy > Do you want search engines outside of Facebook to link to your profile? > Edit > Click the check box on the bottom > Turn Off.

LIMIT WHO CAN SEE YOUR PROFILE INFO, PHOTOS & POSTS

It's fun to share the details of your life with family members and friends, but not so amusing to serve up that data to criminals who comb Facebook pages for personal details to use in identity-theft scams. If you leave your info open to the public, anyone can find your birthdate, mother's maiden name, and passion for poodles.

Each time you post a new photo, video, or status update, Facebook provides a drop-down menu (near the Post button) that lets you keep the news among your friends. You can even exclude certain pals, like, say, your nosy neighbor or your boss.

It's easy to go back to your old posts and make certain you're not sharing telltale details with people you don't know. Just hover your cursor over the downward arrow on the post until Facebook's viewing tools appear.

And here's how to limit the audience for all future and past posts:

ON A COMPUTER: Go to Settings > Privacy > Who can see your future posts? > Edit. Then (on the same page) scroll down to Limit Past Posts.

STOP YOUR 'LIKES' FROM BECOMING ADS

You've probably seen Facebook ads that list your friends' names: "So-and-so likes ..." That's because Facebook lets advertisers use your name and products you "like"—Girl Scout cookies, Starbucks coffee, Chevy pickup trucks—in ads pitched to people in your network. But just because you're happy with your Casper bed-in-a-box mattress doesn't mean you need to publicly endorse it. Here's how to keep your name off those ads.

ON A COMPUTER: Go to Settings > Ads > Ad Settings > Ads That Include Your Social Actions > No One.

PERFORM A LITTLE CROWD CONTROL

As the fallout from the Cambridge Analytica scandal demonstrated, the people on your friends list can jeopardize your privacy—sometimes without even knowing it. While Facebook closed the policy loophole that allowed that particular data leak in 2014, there are plenty of other ways friends can let you down—by posting inappropriate content, for example, or falling for scams that permit accounts to be hacked. That's why it's best not to maintain Facebook "friendships" with people you don't really know (e.g., your best friend's sister's tai chi instructor).

Facebook doesn't make it easy to delete large groups of friends. There's no way to, say, eliminate everyone from your high school in one fell swoop. Instead, you have to go to your Facebook profile, select people to dismiss one at a time, hover over a drop-down menu, and choose Unfriend. To make the process a little easier, consider using the "birthday method." When you log in to Facebook each day, click on the globe at the top of the page, review the birthday notifications, and 1) send out well wishes or 2) quietly unfriend the people you're willing to part with—in the interest of keeping your account more secure.

How to Quit Facebook

The ultimate way to protect yourself from Facebook's snooping is to just delete your account.

That's a big step. But if you're ready to make the break, it's relatively simple. Before you begin, though, be sure to download your personal info to preserve the photos, videos, and other items you've posted. If you've used Facebook Login to access such sites as Pandora or Yelp, you should also take a minute to create new logins and passwords for those services via their apps or sites. Otherwise you'll lose access to your accounts.

Not sure which services are linked to your Facebook account? Check out the Apps and Websites section in Settings for a complete list.

To give you time to change your mind, Facebook delays erasing your account for 14 days. (Log back in and the request will be canceled.) After that, there's no going back. All those photos, status updates, and messages will disappear forever.

ON A COMPUTER: Go to the question mark at the top of your Facebook page and select Privacy Shortcuts > Your Facebook Information > Delete Your Account and Information > Delete Account.

It may take up to 90 days for all of your info to be deleted from Facebook's backup systems, the company says.

If deleting your account seems too extreme, consider temporarily deactivating it. This makes it impossible for others to see your timeline, view your photos, or search for you on Facebook. Your friends, however, may still see old messages from you, as well as your name on their friends lists.

ON A COMPUTER: Go to the down arrow at the top of your Facebook page and select Settings > Manage Account > Edit > Deactivate Your Account. Confirm the decision by entering your password.

New Hope for


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.

by **Lisa L. Gill**

Pain Relief?

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.

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.

A man wearing a green t-shirt and a baseball cap is working in a grow room. He is surrounded by rows of cannabis plants in black pots. The room is filled with grow lights and various equipment. The plants are lush green and appear to be in the flowering stage. The man is focused on his work, possibly inspecting or tending to the plants. The background shows a wall with some equipment and a door.

A Growing Trend
Cannabidiol (CBD)
can be extracted
from marijuana
plants, such as
those shown
here, or its close
relative hemp.

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 Improve Health?

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. 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.

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."

Vandrey worries that excessive enthusiasm may be leading people to expect more from CBD than it can deliver. "States are approving CBD to treat conditions based on anecdotal reports and preliminary data," he says. "I understand that desire, of wanting to help people who think they don't have any other option. But it may also be false hope."

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—

Is CBD Legal?

The answer is not simple, for a variety of reasons.

For starters, the federal government classifies marijuana as an illegal drug, while hemp has a separate and complicated legal status. In addition, the federal government and the states treat CBD very differently—and not all states treat it the same way.

Forty-seven states, plus Puerto Rico and

Washington, D.C., have legalized CBD, either alone (18 jurisdictions) or with THC (31), according to NORML, the nation's oldest marijuana advocacy organization. The exceptions are Idaho, Nebraska, and South Dakota. (For more details, see our Map of the Month, on page 16.)

Still, details vary from state to state, with many limiting

the conditions for which CBD can be used, restricting where consumers can buy products that contain it, or requiring a consumer to consult with a physician first.

From a federal perspective, things are even less straightforward and depend on whether the CBD comes from hemp or marijuana.

If the source

is marijuana, the government considers it illegal. That's because the Drug Enforcement Agency's position on marijuana is unambiguous: It currently classifies anything from the plant, including both THC and CBD, as Schedule I substances, meaning that the agency says they have no known medical use and are addictive—just

CBD IS MARKETED TO CONSUMERS IN MANY FORMS

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

Pills containing extract



Topical balms, rubbed onto skin

Infused into honey



PHOTOS: JOHN WALSH/CONSUMER REPORTS

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.

like heroin and LSD.

Will the FDA’s recent approval of Epidiolex prompt the DEA to change its position, at least on the “no medical use” clause? Melvin Patterson, spokesman for the DEA, says that’s not certain.

Instead, the agency may reclassify just Epidiolex, not all CBD. The agency has until early October to decide.

If the source is hemp, the legal complications get more tangled again. The 2018 Farm Bill is now working its way through Congress, aimed at trying to unravel the confusion. Tucked into its 1,000-plus pages is a provision that would make it easier for farmers to legally grow hemp, something long restricted because of the plant’s close

chemical association with marijuana.

One goal of the new Farm Bill is to loosen those restrictions to enable companies to sell products made with hemp—soaps and cosmetics from hemp oil, for example, as well as rope and fabric from its fibers.

Hemp oil has no or only trace amounts of both CBD and THC, says Collen Keahey

Lanier, executive director of the Hemp Industries Association, a nonprofit trade group.

But whether that will translate into making CBD, at least from hemp, legal across the country is still unknown, Lanier says.

One reason: As we went to press, the House and the Senate still had not agreed on a final version. And while the hemp

provision appears to have broad support, many Democrats and some Republicans object to other portions of the bill, which could jeopardize its passage.

Another reason: The nation’s long, confused history over all things cannabis suggests that even if the Farm Bill becomes law, it could be some time before the legal dust settles.

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 ten 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 non-opioid 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>

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 migraine to cancer. In other words, the manufacturer of Epidiolex can make medical claims, but makers of other CBD products 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 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?

There are no known cases of a consumer facing penalties for buying CBD products online. That's according to Melvin Patterson, spokesman of the Drug Enforcement Administration, and Paul Armentano, deputy director of NORML, a marijuana advocacy group.

But both Patterson and Armentano also say that from a federal perspective, online CBD retailers could be at some legal risk, for several reasons. To start with, shipping CBD across state lines could violate federal law.

CBD products could also be in violation of FDA rules even if they make only general claims about health, such as the ability to reduce inflammation or improve immune function.

Though dietary supplements, such as vitamins and minerals, can say such things, the FDA says CBD products aren't supplements. Why not? Because CBD is now, in the form of Epidiolex, officially a prescription drug, so it can't be sold as a supplement. Since 2015, the FDA has cracked down on dozens of online CBD retailers, even threatening to seize products, for that reason.

As for doctors' role, physicians don't write prescriptions for CBD, in part because those and other cannabis products are still considered illegal from a federal perspective. 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 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 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.”

Adapted from an article that appeared on CR.org. Additional reporting by Lea Ceasrine.

SAFETY • FROM THE • STORM

Few people know better about how important it is to be properly insured than those who've experienced a natural disaster. CR members who were in the path of last year's hurricanes and wildfires share their hard-won insights about the insurance coverage you need to protect yourself, plus the smartest ways to submit a claim.

by Amanda Walker



Last year's multiple wildfires and Category 5 hurricanes caused billions of dollars in damage to the homes and personal property of the people in their paths. Those who had sufficient homeowners insurance were at least compensated for their losses. But those who lacked coverage almost certainly also suffered a financial calamity.

How do you know whether you have the right type and amount of homeowners insurance to protect you from the financial fallout that can result from a fire or natural disaster? To find out, we surveyed 19,100 Consumer Reports members who live in areas hit by Hurricane Harvey, Hurricane Irma, or the California wildfires last year. These people are in a unique position to tell you what you need to do to protect your home, family, and belongings before disaster strikes. Forty-five percent of those in Irma's wake had property damage, as did 15 percent of those affected by Hurricane Harvey. Although only 2 percent of the people in areas swept by California's wildfires had property damage, 26 percent of them had their homes completely destroyed.

Here are five lessons CR members learned that could protect you from devastating financial loss if disaster—natural or otherwise—strikes.

In the Line of Fire

Southern California's Creek Fire burned more than 15,000 acres and destroyed dozens of homes in 2017.

Review Your Coverage

“Check what your insurance covers each year and adjust it to correct any shortfalls. My insurer stopped covering wind damage in the state of Texas, so I had to buy a separate policy to make sure I’d be covered if a hurricane hit.”

—CHARLIE BROWER, 79, WHO HAD TO EVACUATE HIS HOME IN WEST COLUMBIA, TEXAS, DURING HURRICANE HARVEY.

Just over half of the people in our survey follow similar advice and review their homeowners insurance coverage at least every few years.

KNOW WHAT’S COVERED

While there are exceptions for people who live near the Texas coast, standard homeowners policies typically cover damage from wind, fire, explosions (such as from a propane tank), lightning strikes, hail, and other perils. That means that hurricanes, tornadoes, and wildfires should be covered by most policies. Any

outbuildings on your property—like a garage, shed, or fence—are also usually covered. Damage to outbuildings was the most common problem reported by our survey respondents.

If your home is uninhabitable after a storm, your homeowners (or renters) insurance should also reimburse you for living expenses, such as a hotel room or meals out. (Five percent of our survey respondents who had property damage said they couldn’t live in their home after a hurricane; 42 percent said they had to stay elsewhere after damages from a wildfire.) This benefit is generally limited to 20 percent of the total coverage on the structure of your home.

In addition to covering the loss or damage of personal property for covered perils, a homeowners (or renters) policy also protects against theft or vandalism, as in the event of looting following a wildfire or hurricane. Personal property coverage on a typical homeowners

policy is usually 50 to 75 percent of the dwelling’s insured value.

Policies vary, so check with your insurer to see what specific perils are and aren’t covered by your plan. If you own a condo or live in a co-op, check your bylaws or underlying lease to determine what the association covers and what your personal insurance responsibilities will be.

KNOW WHAT’S EXCLUDED

Damage from floods, ground movement (like earthquakes and sinkholes), and water backups isn’t included in homeowners policies. (See the box below for more on flood insurance.)

Earthquake coverage can be added to some plans for a fee or purchased as a separate policy. In California, residents can also purchase it from the California Earthquake Authority (CEA). Rates vary significantly. For example, the statewide average in California is \$832 per year, but

THINK YOU’RE NOT AT RISK OF FLOODING? THINK AGAIN.

“It’s wise to buy flood insurance even if you’re not in a flood zone. It will be inexpensive, and **it’s better to buy it and not need it than to need it and not have it.**”

Jay Bruton, 65, who rode out Hurricane Harvey in his Houston home.



is about \$700. If you own a moderate- to low-risk property, the average is \$420.

There are caps: \$250,000 per residence and \$100,000 for contents under an NFIP policy, or \$500,000 per residence and \$250,000 for contents under private flood coverage. (Renters can also insure their belongings up to the \$100,000 NFIP limit.) Private insurers may sell excess flood insurance above those maximums.

NFIP flood insurance kicks in 30 days after purchase, so you’ll want to buy well before a big storm is on the way. Private flood insurers generally waive the wait period.

To get an assessment of your flood risk, go to the FEMA Flood Map Service Center ([msc.fema.gov](https://www.msc.fema.gov)) and enter your address for the official flood insurance rate map for your area.

PEOPLE TEND TO underestimate their flooding risk, says Lynne McChristian, a consultant with the Insurance Information Institute, a nonprofit group. Ninety percent of all natural disasters—especially hurricanes—include some

form of flooding, and roughly 20 percent of claims processed by the National Flood Insurance Program (NFIP) are from areas considered at low or moderate risk of flooding (when heavy snows melt quickly and cause floods, for example).

You can buy national flood insurance directly from the NFIP as well as through dozens of private insurance companies throughout the country (check with your agent or insurance company for details). The average annual premium

in San Francisco it costs about \$1,500 to \$6,000 annually to cover an older home with a reconstruction cost of \$750,000.

Don't forget to factor in the deductible. Most homeowners policies are subject to a deductible of \$500 to \$1,500. Those for earthquake insurance are higher; the CEA offers plans that range from 5 to 25 percent of the policy limit. (People who live in hurricane-prone areas may have similarly high deductibles for hurricane coverage.) That can be a big expense. If your home is insured for \$350,000 and your policy has a 5 percent deductible, you'll have to pay \$17,500 out of pocket on a covered claim.

Other exclusions to keep in mind include hail damage to the roof, which may not be covered if it's more than 10 years old, and any "sublimits" on personal property such as jewelry, artwork, and furs, which can be as little as \$1,000 to \$2,500. To cover such valuables, you may need to purchase a scheduled personal property endorsement, which could cost about \$25 per \$1,000 of coverage per year.

Get Credit for Updates

"If you improve your home to better withstand a storm, you might get a discount on your insurance."

—DAVID BEATTY, 58, WHO EVACUATED HIS HOME IN BONITA SPRINGS, FLA., DURING HURRICANE IRMA.

For example, installing impact-resistant windows and doors if you live in a hurricane zone could earn you as much as a 45 percent discount on your premiums, says Juan Rodriquez, an engineer who manages large civil works and home-building projects.

Some insurers will require you to do your entire house, says Lynne McChristian, a consultant with the nonprofit Insurance Information Institute. That could be pricey: A hurricane-impact door 60x80 inches can cost about \$1,900, and a single-hung window can run \$500 to \$600, Rodriquez says.

PREPARE A "GO BAG" TO MAKE A QUICKER EXIT

"We keep a bag with **important documents and cash** by the door in case we have to get out in a hurry."

Ryan Cross, 38, San Diego



THE FIRST SIGN something was wrong was the "snow" Ryan Cross and his family saw outside their San Diego home in October 2003. They soon realized it was ash from an approaching wildfire. "We just grabbed stuff like computers and my mom's jewelry and left," he remembers. "We had to drive on the wrong side of the road because the other side was covered in flames."

The Cross family was lucky: Their house was one of the few in the area that was spared. Cross, 38, still lives in the San Diego area with his wife and 7- and 9-year-old daughters. But now he's prepared: He has a "go bag" by

the front door that includes cash in small bills, battery-operated video games for the girls, expired passports for ID, contact numbers, space blankets, and a thumb drive that has copies of insurance policies and other financial documents in case a secure web connection can't be found. There's also a list in the bag of items they can grab if they have more than 15 minutes to leave their home. The kids know where the family will rendezvous if they have to evacuate separately.

Just over 40 percent of CR members who experienced a hurricane had a go bag on hand when the storm struck; only 25 percent who

live where there are wildfires had them. Even if you don't need to evacuate, having some cash, food, extra gas, and batteries will come in handy if you're without power for an extended time.

For a complete list of items you should have in your go bag and advice about where to store it, go to the Department of Homeland Security's website, ready.gov. And if you have the time, Cross suggests you raid the freezer and liquor cabinet on your way out the door. "You're probably going to stay with family or friends who will feed and house you for a while," he says. "They'll appreciate a great bottle of scotch and a giant steak."

Opt for Full Replacement

"Make sure your insurance will pay for the cost of rebuilding your home. Some of my mom's neighbors whose homes were destroyed had to sell their lot because they didn't have enough coverage to rebuild."

—RYAN CROSS, 38, WHO HAD TO EVACUATE HIS HOME IN SAN DIEGO DURING A WILDFIRE.

In our survey, 18 percent of CR members who filed claims found they were

underinsured. That can be a serious problem when a home is a total loss.

Rather than insuring your home for its actual cash or market value (the amount it would cost to replace it minus depreciation), McChristian suggests you insure it for the full replacement cost. This option costs 10 to 20 percent more per year than actual cash value coverage, but it will

Ratings > **Cover Your Assets** These insurance companies were rated by CR members who filed claims of \$10,000 or more between 2013 and 2016.

Company	Reader Score	Survey Results					
		Ease of reaching an agent	Simplicity of the process	Prompt response and attentiveness	Damage estimate	Agent courtesy and professionalism	Timely payment
Amica	93	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑
USAA	92	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑
State Farm	84	↑↑	↑	↑	↑	↑	↑
Farmers	84	↑↑	↑	↑	↑	↑↑	↑
Travelers	81	↑	↑	↑	↓	↑	↑
Liberty Mutual	81	↑	↑	↑	↓	↑	↑
Allstate	80	↑	↑	↑	↓	↑	↑

HOW WE SURVEY: Ratings are based on responses to a 2016 survey of 2,369 CR members who are homeowners and filed claims of \$10,000 or more. The **Reader Score** represents overall satisfaction and

is not exclusively determined by factors under the survey results. If all respondents were completely satisfied with the handling and settlement of the claim, the reader score would be 100; a score of 80

would indicate that respondents were "very satisfied" on average; 60, "somewhat satisfied." Differences of fewer than 5 points are not meaningful. Each rating category under **Survey Results** reflects

average scores ranging from "completely satisfied" to "completely dissatisfied." Ratings are based on CR members, who may not be representative of the general U.S. population.

pay to rebuild your home exactly as it was, even if the amount exceeds the estimated value. It's a good idea to have a professional appraiser evaluate your home's replacement cost every two to three years, McChristian adds.

Shop Around

"I spent a lot of time shopping for the best coverage at the best price. Look for companies that have a good record of paying out claims."

—DAVID BEATTY, 58, BONITA SPRINGS, FLA.

When it's time to renew your policy, compare the same coverage offered by the insurers at the top of our ratings chart, above. Some of the major insurers included in our 2016 survey provided a significantly better experience handling claims. Amica Mutual Insurance Company and USAA are among the highest-rated homeowners insurance companies reported by members who filed claims of \$10,000 or more between 2013 and 2016. They also received the highest marks in all categories.

You may be able to save hundreds in premiums by shopping around. About 9 percent of respondents in the 2016 survey said they had switched insurers in the previous three years, and of those, more than half did so because they got a better price.

Ease the Claims Process

"I take a video every year of all the belongings in our home, including what's in each drawer and cabinet. It ensured we didn't forget to claim anything that was damaged in the hurricane."

—CHARLOTTE COPPENHAVER, 73, WHO EVACUATED HER HOME IN DICKINSON, TEXAS, DURING HURRICANE HARVEY.

Taking an inventory of your belongings and keeping it up to date will make it easy to see whether you're sufficiently insured. It could also speed the insurance claims process by helping provide proof of losses for tax or disaster-aid purposes, McChristian says, especially if you have photos or a video of your possessions. Coppenhaver and her husband, Dorian,

71, had a check within a month.

The Coppenhavers only had to worry about claiming their destroyed possessions. They sold the Dickinson home they'd lived in since 1985 a month before Harvey hit and were renting it from the new owners until their move to Orlando, Fla., a month after the storm.

The couple calculated that their artwork, books, furniture, and the rest that they lost were worth \$248,000. But they had insured them for only \$85,000. "A FEMA adjuster told us to claim it all, just in case some of the claims were disallowed," Coppenhaver says. None were; they received a check for \$85,000 and were able to recoup some of the rest of their losses on their 2017 tax return under the Disaster Tax Relief and Airport and Airway Extension Act of 2017, which allowed victims of Hurricanes Harvey, Irma, and Maria to claim additional personal casualty losses last year.

"In the end it's just stuff," Coppenhaver says. "You'll never own anything that's worth more than life itself."

ROAD REPORT



STAY AHEAD OF THE CURVE WITH CR AUTO RATINGS, NEWS & ADVICE™

THE VITAL STATISTIC

56%

Percentage of women (vs. 36% of men) who find crash protection extremely important when buying a new car.

Source: Consumer Reports 2018 Car Buying Survey.

TIPS FROM OUR TEST TRACK

NEVER IGNORE A 'CHECK ENGINE' LIGHT

When that light is illuminated, it means your car's computerized diagnostics system has found a problem that could be costly to ignore. Here's what to do.



If the light is blinking

or red: The problem needs immediate attention. It may indicate a severe engine misfire that could lead to expensive repairs. Reduce your speed and have the car looked at by a professional as soon as possible.



If the light is yellow and not blinking:

Try tightening the gas cap; a loose one could trigger a false alarm. It may take several trips before the light resets.

Use built-in diagnostic services, if you have them. Many newer cars have remote diagnostic capabilities that will serve up instructions and alert the dealership.

ASK OUR EXPERTS

DOES MY CAR BATTERY REQUIRE ANY MAINTENANCE?

Fall is a good time to make sure your battery's connections are snug and to disconnect and clean them with a battery brush if they're showing signs of corrosion. Have your battery load tested once a year after it's 2 years old if you live in a warmer climate or after it's 4 years old if you live in a colder climate. If you park your car for extended periods, a trickle charger can extend the battery's life. Be sure to use one with built-in circuitry that prevents overcharging.

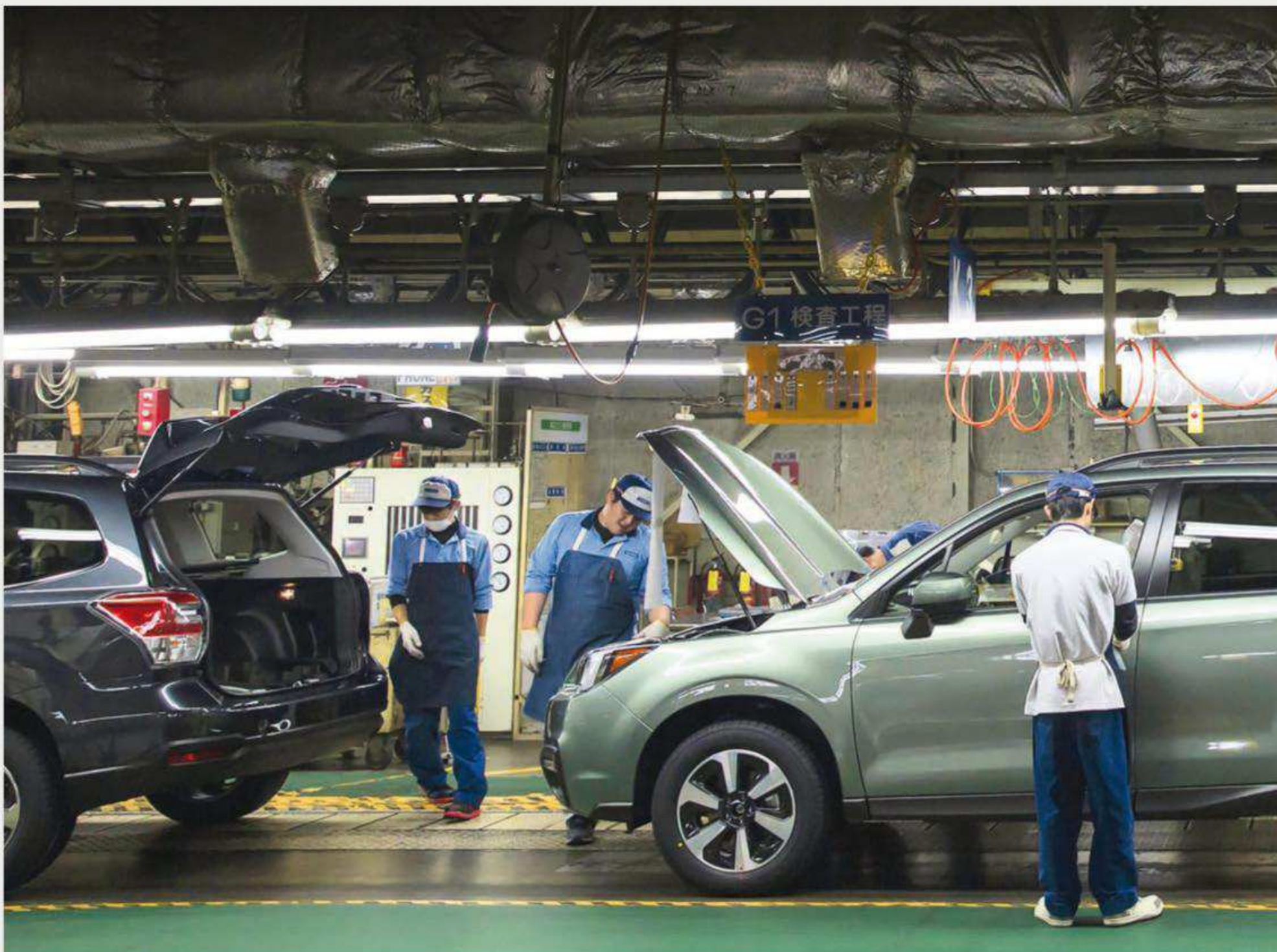


RECALL

CHRYSLER PACIFICA MINIVAN

Fiat Chrysler Automobiles is recalling 240,242 Chrysler Pacifica minivans built between 2016 and 2018. It's too easy to remove a piece of dash trim that activates a manual Park release and could cause the car to roll.

What to do: Chrysler will fix the problem free of charge. Call the company at 800-853-1403 for more information, or go to nhtsa.gov/recalls and enter your car's 17-character VIN.



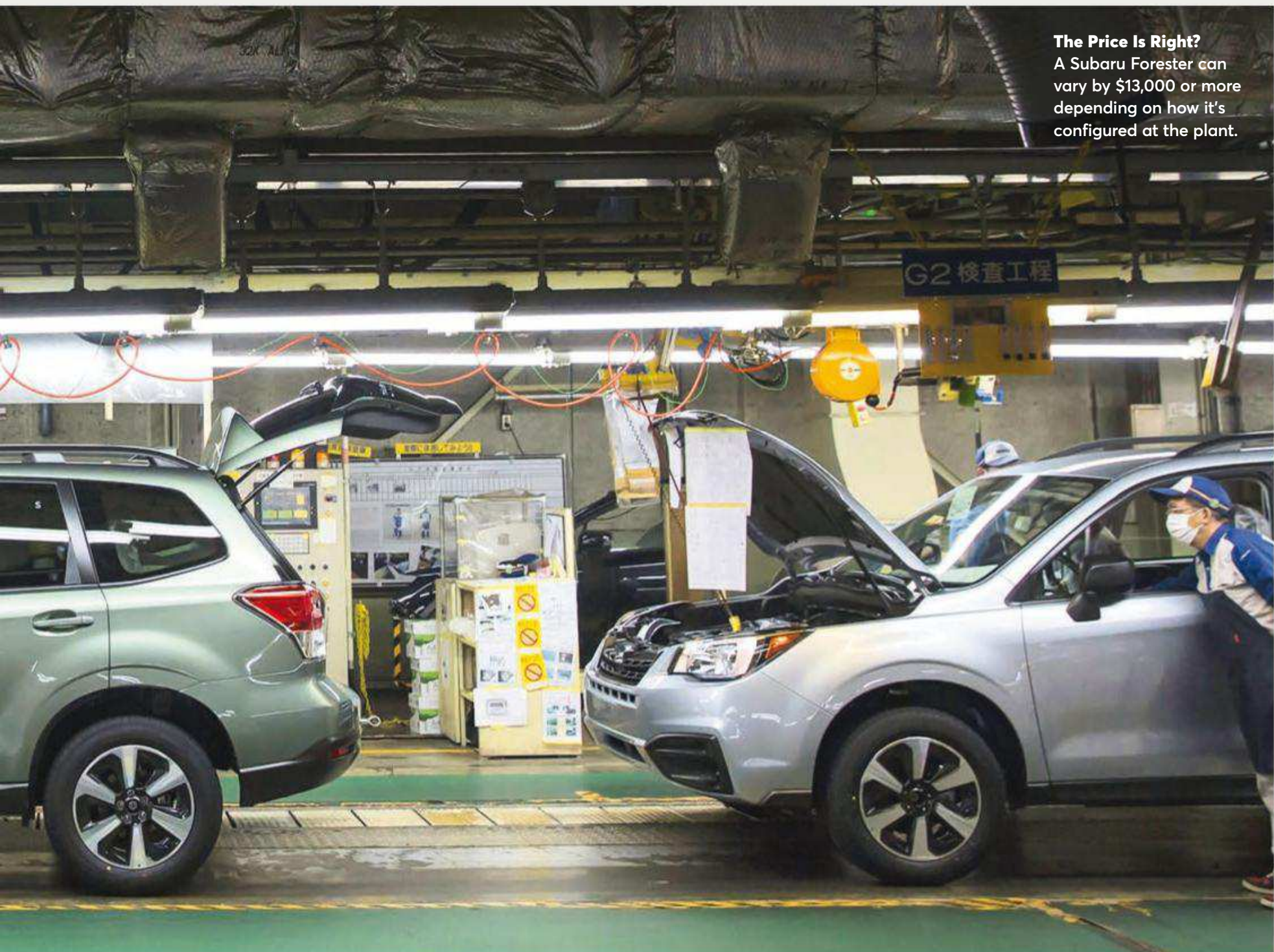
Sticker Shock

How a car is made in a factory—meaning what options and features are built in—can boost the base model's price by \$10,000 or more. Learn how to stop paying for features you don't want and get the ones you do.

by Kevin Doyle

A FEW MONTHS AGO, while driving on the highway and listening to a broadcast of “Madama Butterfly,” I realized I’d fallen out of love with my hatchback. As is often the case with matters of the heart, my feelings weren’t entirely rational. The car had served me faithfully for more than six years and 90,000 trouble-free miles, ferrying me safely to and from work and on weekend expeditions through cloudbursts, blizzards, and ice storms.

But there was no denying that the flush I felt when I first drove it off the lot had long faded: I was as eager to trade it in for a new model as Lt. Pinkerton was to trade in his



The Price Is Right?
A Subaru Forester can vary by \$13,000 or more depending on how it's configured at the plant.

poor Butterfly for a new wife.

For starters, it was loud. I was tired of shouting to be heard by passengers over the aggressive drone of road noise, which at high speeds sounded like a buzz saw chewing through a two-by-four. The cloth seats were hard to clean: No matter how vigorously I vacuumed, the fur my dog shed in the backseat clung to it so fiercely that it was beginning to look like a bearskin rug. Most vexing of all were the speakers, which issued a timbre as thin and tinny as the transistor radio I used to tote to the beach as a teenager.

I knew exactly what I wanted in a new car: All-wheel drive for control on

slick roads, safety features including automatic emergency braking and blind-spot warning, leather or leatherette seats for easy cleaning, and a sound system as worthy of symphonies as of Taylor Swift. Dual-zone climate control would be a plus, because I'm married to someone who isn't comfortable until the dog and I are at risk of hypothermia, but having that feature was not a deal breaker.

With my modest list of must-haves in hand, I set out to visit the dealerships. Though my needs were simple, my search to find all of them in a new car turned out to be anything but.

A Trim-Level Primer

Pick a model, any model, of car or truck. Chances are it's available in at least four (and potentially several more) trim levels. These are essentially different versions of the same model, each with its own price and set of features—from drivetrain and engine type to safety enhancements to conveniences such as power seats and premium speakers. Consider all the various trim levels for a car model, what each includes or doesn't include, and the additional option packages and accessories, and you might start to feel as if you've driven into unknown territory without GPS navigation—or even a map. You may also

find, depending on the trim level you choose, that the cost of the car you thought you could afford is actually twice the price and now out of your reach.

Of course, car trims are nothing new; manufacturers have been packaging models in different versions for decades. And there are plenty of good things to say about having choices. But the number of trim levels on some models has doubled over the past 15 years. And the price difference between the base and the top trim levels has stretched to the point that a front-wheel-drive 2019 Kia Sorento SUV can start at a budget-friendly \$25,990 and run all the way up to \$44,690, which is flirting with the cost of a luxury SUV.

All of this, I was to learn, can present a steep learning curve to the typical car buyer, who—like me—shops for a new vehicle about every six years, according to IHS Markit, a company that tracks the automotive market.

Unlike me, however, most new-car buyers don't have a dedicated team of automotive savant colleagues to help make sense of all of the various trims and options. As the executive editor of this magazine, I had the advantage of being able to check in with Jon Linkov, one of CR's auto editors, before heading to the dealerships. He and the other experts at our Auto Test Center in Colchester, Conn., put more than 50 vehicles a year through rigorous tests to judge performance, fit and finish, and safety on behalf of consumers. CR purchases all of the cars we test, and over the decades our autos staff has become as expert in the car-buying experience as it has in testing.

"Be sure to take along your list of must-haves, and don't get talked into buying anything that's not on the list," Linkov counseled me before I started shopping. "And check back with me before you decide to buy."

Linkov also helped me narrow down my list of candidate cars to just four: the Honda CR-V for its price and practicality; the Ford F-150 because it

\$9,600

THE ADDITIONAL COST OVER THE BASE TRIM FOR A 2019 KIA SORENTO THAT INCLUDES AUTOMATIC EMERGENCY BRAKING.

gets respectable fuel economy in its class and because I need to transport brush, branches, and bulky equipment from time to time; the Mercedes-Benz C-Class because I'm beginning to like the idea of a little luxury; and the Subaru Forester, which the experts at CR's test track place at the top of the compact-SUV vehicle category. The Forester was also at the top of my list, so I started my research at a Subaru dealership.

Stepping Into the Showroom

Within minutes after arriving, I was standing with a patient salesman in front of a large touch-screen monitor for a quick trim-level tutorial. On the screen was a side-by-side comparison of the six Forester trims and what they included. The \$22,795 price of the 2.5i base trim immediately caught my eye.

"Does the 2.5i come with advanced safety features?" I asked.

"No. You can add as many accessories to the 2.5i as you want," the salesman said, gesturing to a neighboring display of mesh cargo bags, foldable sunshades, and bike racks, "but you can't add EyeSight," Subaru's suite of advanced safety features, which includes automatic emergency braking and forward-collision warning. "It's available on other versions of the Forester and standard on the top-trim Touring."

Like a majority of car buyers, to get the features I wanted I would need to climb the trim-level ladder, where each ascending rung comes with more features—and a higher price. The next step up was the Premium trim level, starting at \$25,695, followed by the Limited, starting at \$29,395. I asked the salesman the difference between the two.

"The Limited comes with extras like fog lights, chrome trim, and leather seats," he said.

"I don't care about fog lights or chrome," I said. "But I do want leather. Can I get leather seats on the Premium?"

"No."

"Not even if I pay for them?"

"No," the salesman said, again pointing to the long rows of dashes and dots displayed on the screen under each trim level, indicating what does or doesn't come included on the car and what can be added for a charge. "If you want leather, you need to go up to the Limited."

I'd just climbed two rungs—and tacked on more than \$6,000 to the base price—in not much longer than the 8.7 seconds it takes the Forester to go from 0 to 60 mph.

"Okay. What about safety features?"

"The Limited comes with blind-spot detection and rear cross-traffic alert," he said.

That was encouraging. "What about automatic emergency braking?"

"You can add that in an option package. Look," he said, producing a piece of paper covered with numbered grids, each of them outlining various option packages for the Subaru model lineup. "You could go with option number 23, which includes the Harman Kardon speakers, the EyeSight safety package, and navigation."

"I want the speakers and the safety features, but I don't need navigation. Can you leave that out and charge me less?"

"No," he said. "The nav system comes with the package."

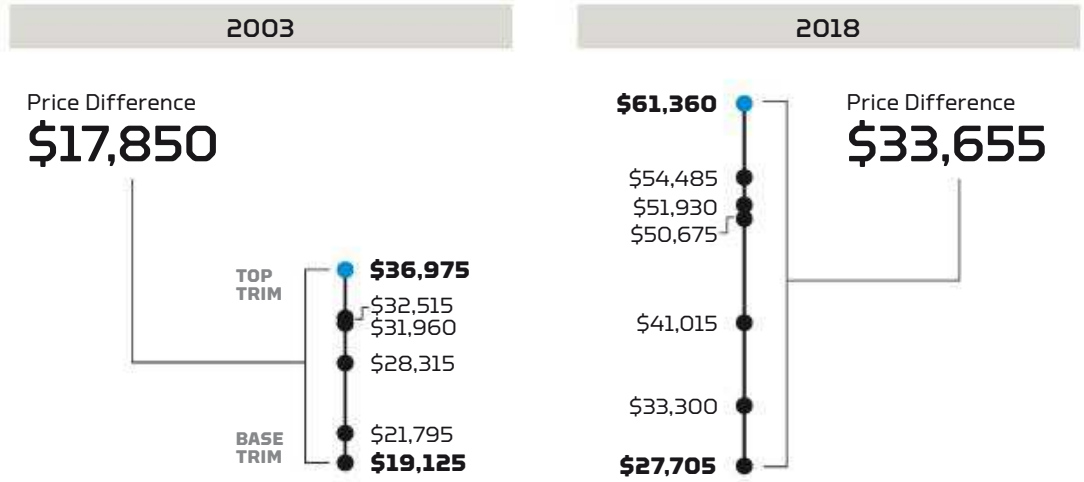
I looked back at the monitor, where the dots and dashes were starting to

Tangled Up in Trims

As carmakers increase the number of trim levels on their models, the price difference between the base and top trims also climbs. In some cases, the number of trims and the price difference has more than doubled over the past 15 years. The graphic below shows how trims have trended on four popular models during that time.

THEN AND NOW: A Trim-Level and Pricing Comparison

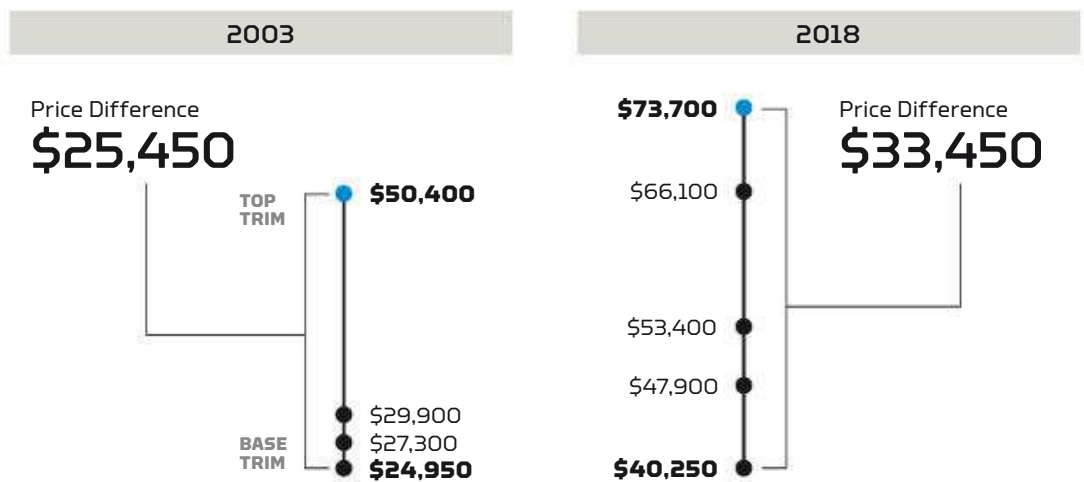
FORD F-150*



HONDA CR-V*



MERCEDES-BENZ C-CLASS SEDAN*



SUBARU FORESTER*



PHOTOS: EVOXSTOCK

*Cars shown are the base models for 2018.

swim on the screen. Doing a little math on the fly, I could see that the price difference between the Limited and the top-of-the-line, fully loaded Touring, which starts at \$33,090, was less than \$4,000.

“So for less than \$4,000 over the price of a Limited, what do I get in the Touring?”

“You get all the safety features you want, along with things like fancy rims, a heated steering wheel, LED lights, turn signals on your mirrors, and dual-zone climate control,” he said. “But if you don’t care about fancy rims and a heated steering wheel, just go for the

Limited and add the safety package.”

“How much would that cost?”

“Come with me,” he said, leading me across the glistening white tiles of the showroom floor to his desk, where he searched his computer to see what was on the lot.

“We have a Limited with EyeSight, premium speakers, and nav for \$34,193 and another for \$34,609.” The price discrepancy, he explained, was due to different accessories.

I liked the idea of saving money, but I was even more excited by the Touring’s dual-zone climate control and the thought that I’d never have to

fight again about turning down the air conditioner.

“And what’s the cost of the Touring?” I asked.

“We don’t have one on the lot right now, but I could find you one.” He looked back at his screen. “To give you an idea of price, we recently sold a Touring for \$34,461.”

“But that’s less than the price of one of the Limiteds on your lot, and it comes with so much more.”

“I know,” he said. “It doesn’t really make sense.”

Carmakers Clarify Trims

If trim levels and option packages can leave even car salespeople scratching their heads, what are the rest of us supposed to make of them? (To be fair, Subaru says it is simplifying the Forester choices with its 2019 model year, making EyeSight standard on all trims and dropping the turbocharged engine.)

Auto-industry experts say that trim levels and option packages, frustrating though they may be, impose a necessary order to the growing number of features and conveniences available on cars today. Without them, they say, the sheer number of choices would become overwhelming for consumers and impossible for carmakers to deliver.

“If you allowed everything to be a separate option, the possible configurations of a vehicle would explode exponentially,” says Anil Goyal, executive vice president of operations at Black Book, a company that tracks car prices. “So manufacturers group features based on past purchase data and consumer demand. But it is true that trim levels and option packages have become more numerous and more complex over the years.”

For many car buyers, trim levels are at best confusing and at worst a frustrating way for car companies to bolster profits by bundling features in a way that forces us to buy things we

Don't Go Home Without These

Here are the features CR's auto experts think every new-car buyer should opt for, plus a few that might be worth skipping.

MUST-HAVES

Advanced Safety Features

(in order of importance to CR)

Automatic emergency braking:

Automatically applies brakes to prevent a collision or reduce the force of an impact.

Forward-collision warning: Provides visual and/or audible warnings to alert the driver that a collision may be imminent.

Blind-spot warning/alert: Gives a visual and/or audible notification if a vehicle is at the car’s flanks, where the driver may not be able to see it easily.

Rear cross-traffic warning: Notifies the driver that an object or vehicle out of rear-camera range could be moving into the car’s path.

Lane-keeping assist: Provides corrective steering input or braking when the car crosses lane markings without the driver activating the turn signal.

Convenience

Knobs for volume, tuning, and power for the audio system: We prefer

physical knobs, because touch-screen-only controls for these functions are distracting to use when driving.

Automatic day/night mirrors: These help prevent driver distraction from bright lights in the rearview mirror.

Power driver’s seat with height-adjustable lumbar support: These have a greater range of adjustments than manual ones and help reduce fatigue.

CONSIDER SKIPPING

Bigger wheels: Optional larger wheels often result in a stiffer, less comfortable ride and can be more expensive to replace when damaged.

Built-in navigation systems:

They are typically costly. Instead, use Android Auto and Apple CarPlay, which allow drivers to tap into smartphone mapping apps directly.

Rear entertainment units: Relatively inexpensive tablet computers can carry movies, books, and games, and most newer vehicles have rear USB outlets to keep them charged. That makes expensive DVD-based systems obsolete.

don't want to get the things we do.

Nancy Daley of Elk Grove, Calif., a CR member, says she looked at several makes before recently deciding to purchase a Honda Clarity Plug-In Hybrid, in part because it only comes in two trim levels. "I wanted leather seats," she says, "but in most of the cars I looked at I had to go up so many trim levels that infotainment and navigation systems and all sorts of other features I don't need were included. I wish I could just get leather seats without all of that other stuff."

Another CR member, Ray Ayala of McMinnville, Ore., had similar complaints after recently shopping for a Toyota RAV4. "It was just plain frustrating that I couldn't get the satellite navigation system I wanted without also having to get a sunroof, power tailgate, and automatic lights that I didn't want," he says. "I told the dealer I just needed the nav system and wasn't interested in having the other features. But he told me he wouldn't charge me for the sunroof and gave me a reasonable price, so I took it."

Not all consumers want a simple car-buying process. Many luxury car buyers, Goyal says, want to highly customize their vehicles. They enjoy sifting through long lists of trims and options, which is why most luxury automakers provide choices that are as inventive as they are exhaustive. Mercedes-Benz, for instance, offers a mini fridge in the backseat of some of its higher-end models (\$1,100), and, for thoroughly modern magi who want to follow their own star, an LED projector that casts an image of Mercedes' three-pointed logo onto the pavement (from \$200). Porsche's add-on enticements include an ionizer to cleanse the cabin air (\$400 in the Cayenne) and leather surfaces with contrasting interior stitching for a super-sporty look (\$5,160 in the Panamera). "Higher trim levels also tend to be more profitable for the manufacturer," Goyal said.

The trim choices of the 2018 Forester I was thinking of buying were simple

238

THE NUMBER OF BASE CONFIGURATIONS AVAILABLE ON FORD F-SERIES TRUCKS.

in comparison. Still, the Forester is available in six trim levels (the 2019 model will have five) with 10 option packages and up to 64 Subaru accessories (such as a \$73 side cargo net and a \$489 remote engine starter).

The Forester can be configured 19 possible ways based on trim, transmission, and option packages alone. Depending on which combination of these you choose, and which of the available accessories you add, there are an almost unlimited number of ways to assemble a Forester before you drive it off the lot, at prices from \$22,795 to more than \$40,000. With seven trim levels, three cab sizes, and an encyclopedic list of options and accessories, including power-deployable running boards and an in-vehicle safe, the Ford F-150 pushes the boundary of possibilities even further.

My experience shopping for a Honda CR-V, on the other hand, was mercifully straightforward. The car comes in four trims, three of which include advanced safety features. Honda does offer a few accessories for the CR-V, but only one or two premium features and no option packages.

As it turns out, the company has added only two trim levels to the CR-V in the past 15 years. "Our customers and dealers like trims that are well thought out, with simplicity and

the customer in mind," says Gary Robinson, senior manager of product planning for Honda. "We try to keep our trims to a minimum and still satisfy the desires and needs of our customers."

Most carmakers, however, don't keep things quite so simple. "From a manufacturer's standpoint, it's hard to make a configuration that's perfect for everybody, but we try to get as close as possible," says Todd Hill, Subaru's car line manager. "We look at owner surveys and historical sales data to find correlations. For instance, we might find that people who want a high-end sound system also want a navigation system, so we would package them together. There are so many different things that can go on a car today that it's hard to keep it to just a few trim levels without making them all expensive. One way to manage that is to offer more trim choices."

The Price of Safety

I can understand why car companies need to package features in a way that will appeal to the broadest audience, even if those features don't necessarily appeal to me. What I don't understand is why advanced safety features aren't offered even as an option on some of the less expensive trims. For instance, I had to move up two trim lines—and \$13,310—from the base F-150 for advanced safety features even to be an option. They were also not available on either the 2018 Honda CR-V or the Forester base trims.

Consumer Reports believes these safety features should be standard on every car. "Forward-collision warning and automatic emergency braking, among other technologies, should come standard on every new car and truck," says David Friedman, CR's vice president of advocacy. "Consumers should not have to wade through complicated menus to see if a car comes with these safety features, or pay thousands of dollars for them because they're packaged with high-end

entertainment and other luxury items. Safety should come standard on every new car and truck. It should not be a luxury.”

Goyal of Black Book says that some automakers are cashing in on consumers’ growing awareness of the benefits of advanced safety systems by requiring car buyers to pay for them as part of option packages. Subaru says its EyeSight suite of advanced safety features will be standard on every Forester, Legacy, and Outback beginning with the 2019 model year. It will, however, remain optional on certain Impreza and Crosstrek trims.

At press time I still hadn’t bought a new car. I was planning to wait for Subaru to roll out its streamlined trim selection and standard advanced safety features on the 2019 Forester, though I didn’t know how much that would add to the sticker price or how it might influence my decision.

In the meantime, I went back to my colleague, Jon Linkov, for more guidance.

“A good place to start your research is the road-test section of the car ratings on CR.org,” Linkov said. “It outlines the key features at each trim level and recommends the best one to choose.”

Here are Linkov’s other tips on how to sort through car trim levels and option packages. I call them Linkov’s Lessons, and I’ll be taking them with me as I continue the search for my new car. I recommend you do, too, the next time you go car shopping. They’ll make it easier to find a model with the features and conveniences you want at a price you can afford.

Lessons From Our Experts

➤ **The base price is a bust.**

Don’t be enticed by a base model. Dealerships often have just one on the lot to attract customers with its lower price. When shopping for a Ford F-150, a Honda CR-V, a Mercedes-Benz C-Class, and a Subaru Forester, none of the dealerships I visited had the least expensive version of the base

83%

PERCENTAGE PRICE INCREASE YOU PAY FOR THE TOP TRIM OVER THE BASE TRIM FOR THE MERCEDES-BENZ C-CLASS SEDAN.

trim available. Before heading to showrooms, consumers should go to carmaker websites to study various trim levels, option packages, and accessories to see what’s standard and how much added features cost.

“Use Consumer Reports’ online recommendations of the best version to get, which include a list of the features you must have and those that would be nice to have but aren’t deal breakers,” Linkov says. “It will impose some discipline on your search and help you stay within your budget.”

➤ **Don’t pay for features you don’t want** (and other negotiating tactics).

Ray Ayala, the CR member who recently bought a new SUV, says he saved money by insisting he didn’t want the sunroof that came with the package that included a navigation system, which he did want. “The salesman told me he would give me the sunroof for free and ended up charging me for the next trim level down,” he says. “I didn’t realize he could do that.”

Linkov explains that salespeople and dealerships have monthly sales goals to reach to trigger sizable bonus payments from carmakers. “They’re going to be more eager to make a deal—and you’re going to have more negotiating power—the later in the month you go shopping,” he says. “If you’re not satisfied with the pricing, thank the

salesperson and walk out. If they ask you to sit down and keep talking, you know you could be on your way to a better deal. If not, you know they’ve given you their best offer.”

➤ **Start shopping below your budget.**

Always make sure you have a few thousand dollars in your budget on top of the purchase price, because there will likely be more costs to consider.

“Shopping below your budget provides room to pay for the destination charge and other associated costs,” Linkov says. “Those fees can easily add \$1,000 or more to the price of a car, and that’s before taxes.” Remember that moving up a trim level or adding options increases the price and your sales taxes. It also increases any local taxes you may owe each year. “If you start shopping at your budget, you’re definitely going to exceed your target price,” Linkov says.

And don’t be swayed by a salesperson saying, “We’ll just roll the added charges into the financing.” You could be paying those costs for years to come because the length of the average new-car loan is nearly six years, according to Experian Automotive.

➤ **Be prepared to pay extra for safety.**

Toyota and Lexus are among the few carmakers that include advanced safety features on even the base trim level, Linkov says.

Some companies offer advanced safety features only at higher, more expensive trim levels. Cadillac and Kia, for example, include safety features only with pricey add-ons.

It costs \$6,800 over the base price of the 2018 Cadillac XT5 to get the Driver Awareness Package of advanced safety features. With the 2019 Kia Sorento, you need to go to the fourth-highest trim level out of six to get forward-collision warning and lane-keeping assist.

“Buyers could end up paying nearly \$10,000 over the base price to get advanced safety features that CR believes should be standard on all cars,” Linkov says.



COMPACT SUVs

Jeep Cherokee

Updated, but Still Mediocre

64

OVERALL SCORE

ROAD-TEST SCORE 68

HIGHS Space, controls, braking**LOWS** Sluggish initial acceleration, uncooperative transmission, ride, agility, engine noise**POWERTRAIN** 270-hp, 2.0-liter four-cylinder turbo engine; 9-speed automatic transmission; all-wheel drive**FUEL** 23 mpg on regular fuel**PRICE AS TESTED** \$37,655

JEEP HAS REFRESHED the Cherokee, giving it a face-lift, additional creature comforts, and a new turbocharged engine option. But despite those improvements, it's still a mediocre model—with little to like—in a popular and competitive segment.

The Jeep's new, more fuel-efficient engine delivered swift acceleration on our track but felt hesitant everywhere else, punctuated by a notable delay in stop-and-go traffic. A less expensive, more refined V6 engine is available. The nine-speed automatic transmission isn't smooth or responsive, and the engine noise is loud and coarse.

The Cherokee lumbers through turns, just as the previous version did. The ride is calm on smooth roads, but now bumps are felt more severely by

passengers than before.

The Cherokee is among the roomiest compact SUVs, with a generous backseat. Its cargo room is typical for the segment.

The controls are easy to use, with clear buttons and knobs for most climate and audio functions. The Uconnect touch-screen infotainment system is a rare bright spot, particularly when the Cherokee is equipped with the optional 8.4-inch screen. But when drivers power off the radio, they lose access to many other system functions because the screen goes dark.

Jeep forces shoppers who want advanced safety features, such as forward-collision warning and automatic emergency braking, to buy more expensive trims and add an option package.

COMPACT SUVs

Mitsubishi Eclipse Cross

All Flash, No Substance

57

OVERALL SCORE

ROAD-TEST SCORE 57

HIGHS Access, rear seat**LOWS** Controls, agility, visibility, front-seat comfort, acceleration, cargo space**POWERTRAIN** 152-hp, 1.5-liter four-cylinder turbo engine; continuously variable transmission; all-wheel drive**FUEL** 24 mpg on regular fuel**PRICE AS TESTED** \$28,470

THE ECLIPSE CROSS is infuriating even before it leaves the driveway because of one of the most convoluted infotainment systems we've ever tested. The interaction with the finicky system is maddening and distracting because of small text and a multistep process, whether using the touch screen or touchpad.

The SUV's styling hurts visibility, which makes backing out of a parking spot difficult. Blind-spot warning and rear cross-traffic warning come standard on the upper SE and SEL, but these helpful features aren't available on the ES and LE trims.

Our experience didn't improve on the road. The small turbocharged engine moves the Eclipse Cross sufficiently around town, but it has to work hard when

climbing hills or merging onto highways. The continuously variable transmission mimics a traditional automatic, but the faux "shifts" can be jolting.

We didn't have much confidence taking corners because of the pronounced body lean and overly light steering.

At least the suspension absorbed most bumps, but the ride was unsettled on uneven roads. Road and wind noises were kept to a minimum, but the engine had a gritty, metallic sound under hard acceleration.

The front seats are squishy, and adjustable lumbar isn't available. The rear seat, which can slide forward or back, has plenty of room for adults, but the cargo space is small.

Forward-collision warning and automatic emergency braking are available only on the top SEL trim.



MIDSIZED CARS

Mazda6

Luxury at a Bargain Price

79

OVERALL SCORE

ROAD-TEST SCORE 79

HIGHS Handling, ride, fit and finish

LOWS Relatively tight quarters, acceleration with standard engine

POWERTRAIN 187-hp, 2.5-liter four-cylinder engine; 6-speed automatic transmission; front-wheel drive

FUEL 28 mpg on regular fuel

PRICE AS TESTED \$26,590

THE REVISED MAZDA6 is significantly more comfortable and quiet while retaining much of its driving exuberance. This updated 6 feels more expensive than it is. But with the updates, the car has become slower and less fuel-efficient.

That said, we like how the base four-cylinder engine and responsive automatic transmission make the sedan feel quicker than the test results indicate. The engine returned 28 mpg overall, average for the class.

We also rented a 6 with the optional turbocharged engine and found it zippier and quieter.

The 6's fast-reacting steering contributes to its agile handling. And its steady, absorbent ride and quiet cabin make it feel substantial.

This sedan's low stance might make it a challenge for some to get into the car. The interior is a bit snug but the front seats are appealing. We found the rear seat has enough room for taller passengers, but headroom is tight.

The cabin design is understated, and the fit and finish is impressive for the price. The stitching on the padded dashboard and center console, as well as the way various controls precisely click into position, create an upscale feel.

The infotainment system requires some practice to master, but we ultimately found it manageable.

Advanced safety systems and driver-assist features, such as low-speed automatic emergency braking and blind-spot warning, are standard equipment on all versions.



MIDSIZED SUVs

Kia Sorento

Riding in the Sweet Spot

74

OVERALL SCORE

ROAD-TEST SCORE 78

HIGHS Smooth V6, intuitive controls, ride, quiet cabin, standard third-row seat

LOWS Third-row seat access

POWERTRAIN 290-hp, 3.3-liter V6 engine; 8-speed automatic transmission; all-wheel drive

FUEL 22 mpg on regular fuel

PRICE AS TESTED \$41,935

ONCE AGAIN, OUR TESTING shows the Kia Sorento to be a refined three-row SUV and a strong competitor in its class.

The six-cylinder Sorento gets a new eight-speed automatic transmission as part of its update for 2019. That 3.3-liter V6 is punchy and polished, and delivers effortless power. The pairing of the slick transmission and quiet engine returned 22 mpg overall, 1 mpg better than when we last tested this SUV. And it can still tow 5,000 pounds.

We found the Sorento to be just right, with a level of comfort and a range of features and functionality in a tasteful, modestly sized SUV.

This Kia is smaller than some of its competitors, making it easier to maneuver. But that tight size means there's less cargo and interior

space than in the Honda Pilot or Toyota Highlander.

Adults should find the well-padded second-row seats to their liking. There's a standard child-friendly third-row seat, although it's a challenge to climb into the wayback.

We appreciated the Kia's ride, particularly how the suspension absorbed road flaws. In routine driving, the Sorento has responsive handling.

The Kia's quiet, nicely appointed interior has soft surfaces and supportive seats. Its controls are among the easiest to use in the industry, including its intuitive infotainment system with the 8-inch touch screen.

Forward-collision warning and automatic emergency braking are standard on the midlevel EX trim and above.

Ratings > **Family Friendly in Assorted Sizes** Our auto experts tested cars and SUVs that we think appeal to a wide variety of shoppers.

Recommended	Make & Model	Overall Score	Price	Survey Results		Safety	Road-Test Results										
				As tested	Predicted reliability		Owner satisfaction	Front-crash prevention	Road-test score	Overall mpg	Acceleration 0-60 mph, sec.	Dry braking 60-0 mph, ft.	Avoidance-maneuver speed, mph	Routine handling	Ride	Noise	Seat comfort front/rear
COMPACT SUVs																	
✓	Subaru Forester 2.5i Premium	84	\$27,145	↑	↑	Opt.	85	26	8.7	127	52.0	↑	↓	↓	↑/↑	↑	35.5
✓	Honda CR-V EX (1.5T)	83	\$28,935	↑	↑	Opt.	82	28	8.2	137	52.0	↑	↓	↑	↑/↑	↑	36.0
✓	Toyota RAV4 XLE	81	\$29,014	↑	↑	Std./↑	75	24	9.3	135	51.0	↑	↑	↑	↓/↑	↑	37.0
✓	Nissan Rogue SV	73	\$29,920	↑	↓	Std./↑	74	24	9.5	134	54.0	↓	↑	↓	↓/↑	↑	31.5
✓	Mazda CX-5 Touring	72	\$29,530	↓	↑	Std./↑	80	24	8.6	133	54.0	↑	↑	↑	↑/↑	↑	30.5
✓	Kia Sportage LX (2.4L)	71	\$26,720	↓	↑	Opt.	78	23	9.6	128	52.5	↑	↓	↓	↑/↑	↑	29.5
✓	Ford Escape SE (1.5T)	69	\$29,630	↓	↓	Opt.	75	23	10.1	132	50.0	↑	↑	↑	↓/↓	↑	34.0
	Volkswagen Tiguan SE	65	\$31,645	↓	↑	Opt.	84	25	10.3	131	52.0	↑	↑	↑	↑/↑	↑	33.0
	Chevrolet Equinox LT (1.5T)	65	\$33,730	↓	↓	Opt.	78	25	9.6	132	53.0	↑	↑	↑	↑/↑	↑	32.0
	Jeep Cherokee Limited (2.0T)	64	\$37,655	↓	↓	Opt.	68	23	7.5	129	53.0	↓	↓	↓	↑/↑	↑	31.0
	Mitsubishi Outlander SEL (4-cyl.)	63	\$28,405	↑	↓	Opt.	59	24	10.0	132	50.5	↓	↓	↓	↓/↑	↑	32.5
	GMC Terrain SLE (2.0T)	57	\$36,950	↓	↓	Opt.	67	22	7.2	128	54.0	↓	↓	↓	↑/↑	↓	33.0
	Mitsubishi Eclipse Cross SE	57	\$28,470	↓	↓	Opt.	57	24	9.9	132	52.5	↓	↓	↓	↓/↑	↓	22.5
	Hyundai Tucson SE (2.0L)	56	\$25,920	↓	↓	Opt.	76	24	11.0	129	54.0	↑	↑	↑	↑/↑	↑	29.5
	Jeep Compass Latitude	50	\$30,870	↓	↓	Opt.	56	24	9.8	137	53.5	↓	↓	↓	↓/↓	↑	27.5
MIDSIZED 3-ROW SUVs																	
✓	Toyota Highlander XLE (V6)	85	\$41,169	↑	↑	Std./↑	82	22	7.4	134	48.5	↓	↑	↑	↑/↑	↑	40.5
✓	Honda Pilot EX-L (2019)	77	\$40,655	↓	↑	Std./↑	80	20	7.5	136	49.5	↓	↑	↑	↑/↑	↓	48.0
✓	Hyundai Santa Fe SE (V6)	75	\$36,290	↓	↓	Opt.	81	20	7.6	133	51.0	↓	↑	↑	↑/↑	↑	40.5
✓	Kia Sorento EX (V6)	74	\$41,935	↓	↑	Opt.	78	22	8.1	137	49.0	↓	↑	↑	↑/↑	↑	37.5
	Nissan Pathfinder SL	69	\$40,470	↓	↓	Std./↑	72	18	7.7	137	47.0	↓	↑	↑	↑/↑	↑	39.5
	Volkswagen Atlas SEL (V6)	65	\$44,165	↓	↑	Opt.	84	20	8.7	135	51.0	↑	↑	↑	↑/↑	↑	50.5
	Mazda CX-9 Touring	60	\$40,470	↓	↑	Std./↑	80	22	7.9	139	50.0	↑	↑	↑	↑/↑	↓	34.0
	Ford Explorer XLT (V6)	59	\$39,275	↓	↓	Opt.	71	18	7.9	135	49.5	↓	↑	↑	↑/↑	↑	42.0
MIDSIZED CARS																	
✓	Toyota Camry LE (4-cyl.)	87	\$26,364	↑	↑	Std./↑	86	32	8.0	126	53.5	↑	↑	↑	↑/↑	↑	3+1
✓	Honda Accord EX (1.5T)	84	\$28,345	↓	↑	Std./↑	89	31	7.7	135	54.5	↑	↑	↑	↑/↑	↑	4+1
✓	Kia Optima EX (2.4L)	81	\$25,860	↑	↑	Opt.	86	28	8.0	130	51.5	↑	↑	↑	↑/↑	↑	3+2
✓	Mazda6 Touring (2.5L)	79	\$26,590	↑	↑	Std./↑	79	28	9.2	133	54.0	↑	↑	↑	↑/↑	↑	3+2
✓	Hyundai Sonata SEL (2.4L)	78	\$25,845	↓	↓	Opt.	85	28	8.3	129	51.5	↑	↓	↑	↑/↑	↑	3+2
✓	Ford Fusion SE (1.5T)	78	\$27,720	↑	↓	Opt.	81	24	9.2	125	52.5	↑	↑	↑	↓/↑	↑	3+2
	Chevrolet Malibu 1LT (1.5T)	68	\$26,790	↓	↓	Opt.	80	29	8.4	130	53.0	↑	↑	↑	↓/↑	↑	3+2

HOW WE TEST: Recommended models did well in our **Overall Score**, which factors in **Road-Test Results, Predicted reliability, Owner satisfaction, and Safety**, which includes crash-test results and the

availability of front-crash prevention features, such as forward-collision warning and automatic emergency braking at city or highway speeds. For these systems, NA means no such system is offered; Opt. means

it's available on some versions but not necessarily on the one we tested; and models with standard systems are rated from ↓ to ↑ based on how many of these features are standard. We also deduct points

from the **Overall Score** if a vehicle's shifter lacks fail-safes or is difficult to operate. Readers with a Digital or All-Access membership can go to CR.org/cars for complete, up-to-date ratings.

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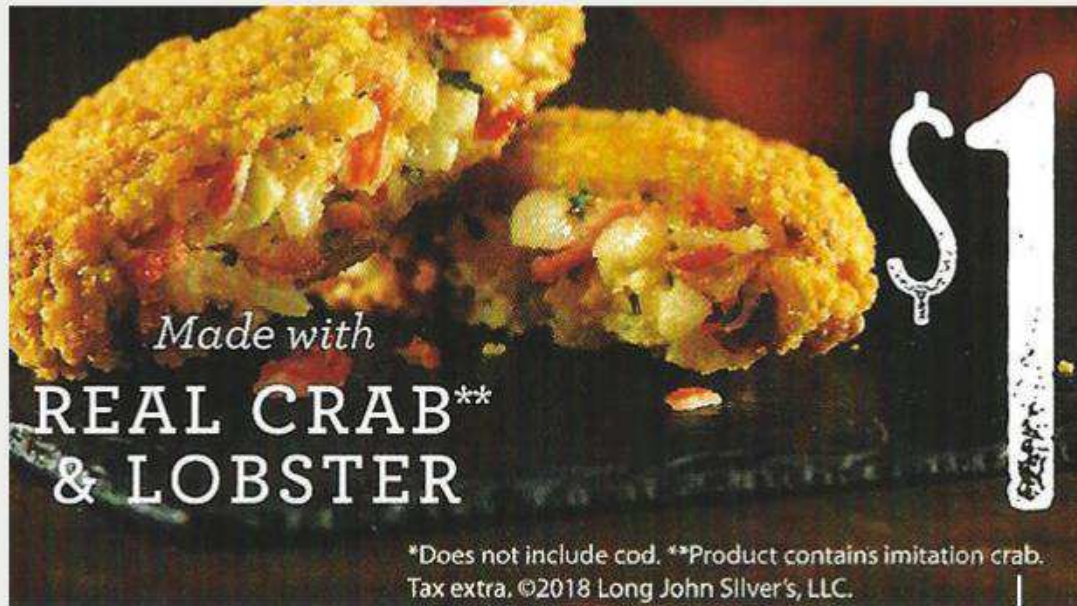
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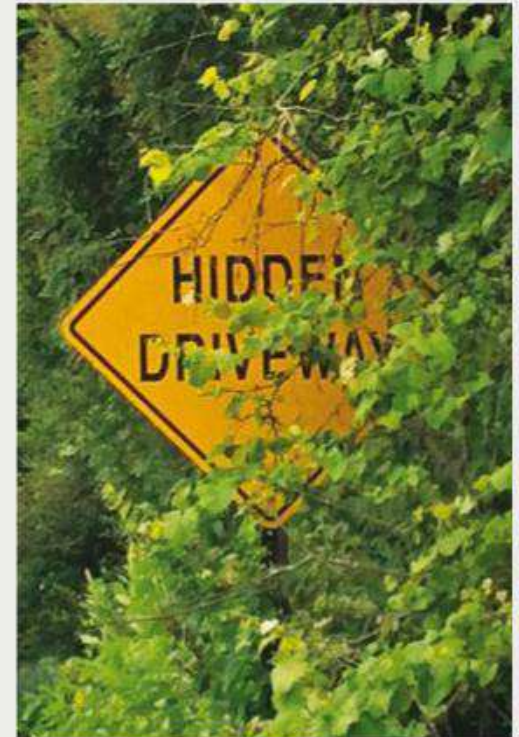
These signs and ads might make you do a double take

Seafood Subterfuge

This faux-fish dish is bound to make some customers crabby.
Submitted by Mark Sinkhorn, Louisville, KY



****Product contains imitation crab.**



Sign Unseen

This street sign may be taking itself too literally.
Submitted by R.T. Neumann, Pittsburgh

Smells Like a Bad Idea

But maybe there are people who want to relive their stinkiest memories?
Submitted by Russ Durnil, St. Louis

Restores Tough Odors



You'll Laugh So Hard ...

It's all fun and games until somebody needs a diaper change.
Submitted by Craig and Debbie Holscher, Aurora, CO



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